VILLAGE OF MCFARLAND

Public Works & Utilities Committee

NOTICE OF PUBLIC MEETING

Monday, August 22, 2022 **6:00 PM** **McFarland Municipal Center**
Community Room

AGENDA

You are invited to this meeting through a Zoom webinar. The public is strongly encouraged to watch and participate in these meetings remotely through either the webinar or telephone options listed below.

PLEASE CLICK THE LINK BELOW TO JOIN THE ZOOM WEBINAR:
https://us02web.zoom.us/j/87321231583
Or by Telephone: +1 (312) 626-6799
Webinar ID: 873 2123 1583
Press *9 to raise/lower hand. Press *6 to mute/unmute.

1. CALL TO ORDER, ROLL CALL.

2. PUBLIC APPEARANCES.
   a. This is an opportunity for members of the public to address the Public Works & Utilities Committee. Please remember this is a virtual meeting conducted through the Zoom online meeting platform. Zoom meeting attendees wishing to address the Committee may do so using the Question and Answer feature within the Zoom online meeting platform. You may state your name, address, and provide your comments to the Committee for their consideration. Members of the public who are present in person and wish to address the Committee should fill out a public comment form and turn into the meeting chairperson. Members of the public may speak during public appearances or during their selected agenda item as they designate on the public comment form. Please adhere to the 3-minute time limit. Additionally, you may send your public comments to public.works@mcfarland.wi.us to be included as part of the meeting.

3. APPROVAL OF MINUTES.
   a. Discussion and action regarding the minutes from the Public Works & Utilities meeting held on July 25, 2022.

4. BUSINESS.
   a. Public Information Meeting regarding Paulson Road project
   b. Discussion and action to make a recommendation to the Village Board regarding sanitary sewer rates
   c. Update regarding Lift Station #2 project and design.
   d. Discussion and action to make a recommendation to the Village Board regarding issuance of a 2023 sidewalk replacement BID.
   e. Update regarding Exchange Street and action to schedule a Public Information Meeting.
   f. Update regarding the 2022 Sanitary Survey report performed by the Wisconsin Department of Natural Resources (DNR)

g. Discussion regarding December meeting conflict

5. SCHEDULE NEXT MEETING DATE.

   a. Monday, September 26, 2022 at 6:00 p.m.

6. ADJOURNMENT.

Any person who has a qualifying disability as defined by the Americans with Disabilities Act that requires the meeting or materials at the meeting to be in an accessible location or format should contact the McFarland Municipal Center at (608)838-3153, 5915 Milwaukee Street, McFarland, Wisconsin, or village.clerk@mcfarland.wi.us by 2:00 p.m. at least 5 business days prior to the meeting so that any necessary arrangements can be made to accommodate each request. If the meeting or request is less than 5 business days from the meeting, requests for accommodations may still be made and reasonable efforts will be made to accommodate each request.

VILLAGE OF MCFARLAND

Public Works & Utilities Committee Minutes

Monday, July 25, 2022 - 6:00 PM

1. CALL TO ORDER, ROLL CALL.

Village President Clow called the regular meeting of the Public Works & Utilities Committee to order at 6:00 PM in the Community Room of the Municipal Center. This meeting was held via Zoom webinar.

Members present: Carolyn Clow, Pauline Boness arrived at 6:05 p.m., Marv Meyers, Eric Kryzenske, Chris Fredrick, Jerry Adrian

Members not present: Marc Nielsen

Staff Present: Village Administrator Matt Schuenke, Public Works Director Jim Hessling, Streets and Utilities Superintendent Lee Igl, Assistant to the Public Works Director Aimee Irwin, and Town and Country staff Tim Stieve and Brian Berquist.

2. PUBLIC APPEARANCES.

a. *This is an opportunity for members of the public to address the Public Works & Utilities Committee. Please remember this is a virtual meeting conducted through the Zoom online meeting platform. Zoom meeting attendees wishing to address the Committee may do so using the Question and Answer feature within the Zoom online meeting platform. You may state your name, address, and provide your comments to the Committee for their consideration. Members of the public who are present in person and wish to address the Committee should fill out a public comment form and turn into the meeting chairperson. Members of the public may speak during public appearances or during their selected agenda item as they designate on the public comment form. Please adhere to the 3-minute time limit. Additionally, you may send your public comments to public.works@mcfarland.wi.us to be included as part of the meeting.*

None.

3. APPROVAL OF MINUTES.

a. *Discussion and action regarding the minutes from the Public Works & Utilities meeting held on June 27, 2022.*

Motion by Village President Clow, seconded by Jerry Adrian, to approve the minutes from the Public Works & Utilities meeting held on June 27, 2022. Motion carries 3 - 0 - 2, with Marv Meyers, Eric Kryzenske abstaining.

4. BUSINESS.

a. *Discussion and action to make a recommendation to the Village Board regarding the 2023-2027 Capital Improvement Plan (CIP).*

Schuenke reviewed the changes to the 2023-2027 CIP from the June committee meeting. Schuenke also stated that the allocation to the water utility of 50% was reduced to 35%, which caused an increase to the streets' budget for projects. Tim Stieve of Town and Country Engineering reviewed the updated Long Range Capital Improvement Plan since

the June committee meeting. Stieve stated the following items have been added to the plan: pathways, sidewalks, parking lots, and new water main and valve replacement near the Cottages on Taylor Road. Stieve added that the water main and valve replacement project was added due to two recent breaks in the area along with the valves not functioning properly.

- Pauline Boness asked what water main or sewer work would occur as part of the Paulson Road project. Stieve responded that there would be some lining related to the sanitary sewer and the water main would be replaced on the northern third of the project. Berquist added that sanitary sewer manholes would be replaced as well. Boness asked if the water and sewer are connected north and south. Berquist stated the water main is connected. However, the sewer is not and is not planned to be connected.
- Chris Fredrick asked if the Village Board is financially looking to support the direction of the Long Range Plan. President Clow stated the Village Board is supportive in trying to plan and prepare for these projects. If the project can be financially supported and budgeted, it will be reviewed during the budget cycle on an annual basis.
- Fredrick asked if valves are exercised routinely. Igl responded that approximately one-fifth of the valves in the Village are exercised each year.
- Jerry Adrian asked for clarification regarding the salt brine containment item within the plan. Hessling explained that a concrete containment would be constructed at the Public Works building to prevent spills of salt brine.

Motion by Village President Carolyn Clow, seconded by Eric Kryzenske, to recommend approval to the Village Board regarding the 2023-2027 Capital Improvement Plan (CIP). Motion carries 6 - 0 - 0.

b. *Update and discussion regarding sanitary sewer rates.*

Brian Berquist of Town and Country Engineering reviewed the enclosed chart related to sanitary user charges. Berquist stated that, if desired, it would be possible to adjust the variable sewer rate but keep the base rate or fixed rate at the current rate.

- Eric Kryzenske asked if the presented chart is being conservative based on the MMSD presentation provided in June. Berquist responded that MMSD's estimated increase in percentage is a placeholder. When MMSD provides a rate increase of 9%, that may or may not be what actually occurs for the Village as it is based on the volume and strength of waste sent to MMSD.
- Chris Fredrick asked if it would be supported to continue with the sewer losing money. Berquist responded that this could be further reviewed and it would be important to be able to provide justification to the users and future users.
- Jerry Adrian asked the reason for the varied rate increases. Berquist responded that the amount was based on the supporting justification for the rate increases.

c. *Discussion regarding the Paulson Road project and action to schedule a Public Information Meeting.*

Tim Stieve of Town and Country Engineering provided an overview of the

reconstruction planned for Paulson Road in 2023. Construction would involve a reconstruction from Siggelkow Road to the current gate. Brian Berquist added that this would include a sidewalk on the west side of the roadway due to the steepness and driveways on the east side. Stieve said that traffic calming devices would be installed to help with traffic flow. From the gate to the south it would include a curb and gutter, not a reconstruction, and a possible sidewalk on the east side of the roadway.

- Chris Fredrick asked if the developer agreement for Preston Place would require them to pay for the sidewalk in their area. Schuenke responded that this would be further looked into.
- Pauline Boness asked if the property on the west side before the gate had been connected to water and sewer services. Aimee Irwin responded that the property is connected to water but not sewer services. Berquist stated this could be included as part of the project.
- Jerry Adrian recommended engaging the public sooner rather than later.
- Village President Clow asked if the public information meeting would be held in person or virtually. Berquist stated that either or both options are feasible.

Motion by Village President Carolyn Clow, seconded by Boness, to recommend the scheduling of a Public Information Meeting on August 22, 2022 at 6:00 p.m. Motion carries 6 - 0 - 0.

d. *Discussion and action to make a recommendation to the Village Board regarding a Request for Proposal (RFP) for yard waste and drop-off site services.*

Jim Hessling reviewed the enclosed request for proposal for yard waste and drop-off site services.

- Chris Fredrick asked how many bids were received last time this request for proposal was issued. Hessling stated only one bid was received.
- Jerry Adrian asked if it would be feasible to have a schedule of when the contractor is cleaning out the yard waste site to avoid gate closure and waiting residents. Hessling responded that this would be difficult to schedule due to the volume of material and the hours of the contractor. Lee Igl added that the contractor is currently running two trucks almost five days a week.
- Village President Clow asked if a longer-term contract might be more appropriate. Hessling responded that this would be possible. Fredrick commented that contractors could be hesitant due to the ability to accurately project costs.
- Village President Clow recommended expanding the bidding pool to hopefully receive additional bids. Clow asked about adding a section related to additional pick-up due to storm damage or village needs. Hessling responded that the request for proposal can be edited to include this section. Fredrick added that this section should include a statement about being mutually agreeable with the contractor and the village.
- Village President Clow recommended adding language regarding the holiday tree drop-off site maintenance. Hessling stated this would be added.

Motion by Village President Clow, seconded by Fredrick, to recommend approval to the Village Board regarding a Request for Proposal (RFP) for yard waste and drop-off site services. Motion to amend by Village President Clow, seconded by Fredrick, to recommend approval to the Village Board regarding a Request for Proposal (RFP) for yard waste and drop-off site services with the addition of holiday tree drop-off site maintenance and other refinements as discussed. The amended motion passed 6-0-0.

e. *Discussion on transition of the Village's meeting format effective August 1, 2022.*
Village President Clow provided an overview of the transition back to in-person committee meeting attendance beginning August 1, 2022. Committee members will no longer receive a zoom link. If committee members need to attend virtually, they would utilize the public zoom link and be promoted once the meeting has started.

5. SCHEDULE NEXT MEETING DATE.

a. *Monday, August 22, 2022 at 6:00 p.m.*

6. ADJOURNMENT.
Motion by Pauline Boness, seconded by Chris Fredrick, to adjourn at 7:18 p.m.

Pursuant to law, written notice of this meeting was given to the public and posted on the public bulletin boards in accordance with Open Meetings Law.

Respectfully submitted,
Aimee Irwin
Assistant to the Public Works Director

VILLAGE OF
McFarland

SUMMARY SHEET

MEETING DATE: **Monday, August 22, 2022**

SECTION: **Business**

DEPARTMENT: **Public Works**

CONTACT: **Jim Hessling, Public Works Director, Matt Schuenke, Village Administrator**

AGENDA ITEM: **Public Information Meeting regarding Paulson Road project**

PREVIOUS ACTION:
The Paulson Road project has been previously discussed at various Public Works & Utilities meetings along with the village board.

ISSUE SUMMARY:
The Village is in the process of planning and design for the reconstruction of Paulson Road from Siggelkow Road to Ridge Road. This project is planned to include a full reconstruction of the street, including the addition of curb and gutter, storm sewer, water main and a new sidewalk to the western side of the street. This project also includes the removal of the existing gates located approximately 1,800 feet south of Siggelkow Road.

The project is planned for construction in 2023.

As part of the design process, a Public Information Meeting (PIM) will be held at 6:00 p.m. on August 22, 2022. The PIM will allow the public to ask questions and offer input on the project. This PIM will be both virtual and in person.

FINANCIAL/BUDGET IMPACT:
Design funding for the project was included in the 2022 village budget.

VILLAGE PLAN REFERENCE:
Long Range Capital Improvement Plan

ORDINANCE REFERENCE:
None.

BOARD, COMMISSION OR COMMITTEE RECOMMENDATION:
No action on this item.

ATTACHMENTS:
1. PIM Notification Letter for Paulson
2. Paulson Road Roll Drawing (1)

<u>Public Information Meeting</u>- 2023 Paulson Road Reconstruction Project

The Village is in the process of planning and design for the reconstruction of Paulson Road from Siggelkow Road to Ridge Road. This project is planned to include a full reconstruction of the street including the addition of curb and gutter, storm sewer, and a new sidewalk to the western side of the street. This project also includes the removal of the existing gates located approximately 1,800 feet south of Siggelkow Road.

The project is planned for construction in 2023. The Village will be working to plan for and design the project this year. In order to help keep the public informed of the upcoming work, the Village is planning a public information meeting for **<u>6:00 p.m. on Monday August 22, 2022</u>.** At this meeting, an overview of the project details will be presented. After the presentation, there will be an opportunity for residents to ask questions or discuss concerns with Village staff and the Village Engineer.

This meeting will be held in-person at the Municipal Center. The Municipal Center is located at 5915 Milwaukee Street in McFarland. There will also be an option for virtual attendance through Zoom. You can join the Zoom Webinar by utilizing the below information.

- By web browser: https://us02web.zoom.us/j/87321231583

- Or Telephone:
    - Dial US: +1 (312) 626-6799
    - Webinar ID: 873 2123 1583
        - Press *9 to raise/lower hand
        - Press *6 to mute/unmute

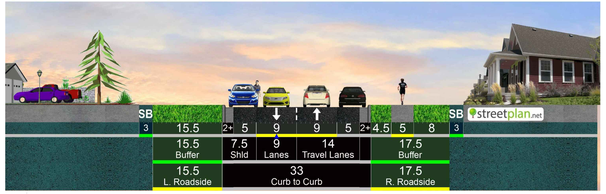
If you cannot attend the meeting, please submit your written comments to the Public Works Department before August 17, 2022. The mailing address is:

Village of McFarland, Public Works Department
P.O. Box 110
McFarland, WI 53558
public.works@mcfarland.wi.us

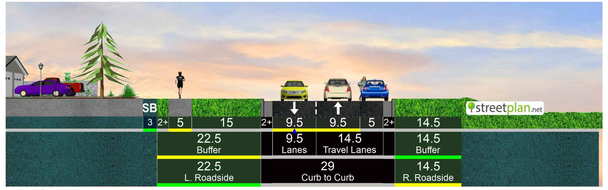
Thank you,
VILLAGE OF McFARLAND

VILLAGE OF MCFARLAND
2023 PAULSON ROAD RECONSTRUCTION

Paulson Road Siggelkow to Ridge **Alt 2** Right-of-Way: 66' of 66'



Paulson Road Siggelkow to Ridge **Alt 3** Right-of-Way: 66' of 66'



VILLAGE OF
McFarland

SUMMARY SHEET

MEETING DATE: **Monday, August 22, 2022**

SECTION: **Business**

DEPARTMENT: **Public Works**

CONTACT: **Matt Schuenke, Village Administrator, Jim Hessling, Public Works Director**

AGENDA ITEM: **Discussion and action to make a recommendation to the Village Board regarding sanitary sewer rates**

PREVIOUS ACTION:
The Public Works & Utilities Committee previously began discussion regarding sanitary sewer rates during their June 27, 2022 meeting.

The Village Board authorized a rate increase of 22 percent back in February 2020.

ISSUE SUMMARY:
As part of the 2022 budget, a study on sanitary sewer rates is underway. Town and Country, the village's engineer, will provide a brief update on the progress of the study.

Rates for the sanitary sewer system were last adjusted in 2020. One of the largest expenditures within the sanitary sewer system is the MMSD charges. Other operating costs have increased over the same period.

Town & Country is recommending the Village to consider a stepped increase to the variable charges only and leave the fixed charges static to help minimize the impact on the smaller users. If all the assumptions presented by Town & Country hold, this would help bring the sewer utility back to a positive financial position in 2025.

FINANCIAL/BUDGET IMPACT:
None.

VILLAGE PLAN REFERENCE:
None.

ORDINANCE REFERENCE:
None.

BOARD, COMMISSION OR COMMITTEE RECOMMENDATION:
Motion and second to recommend to the Village Board a rate adjustment in 2023 for the variable sanitary sewer rates as presented.

VILLAGE OF
McFarland

ATTACHMENTS:

1. 2022 User Charge System End of Year
2. 2022 User Charge System 8.16.2022

Annual Shortfall
$200,000
$100,000
$-
$(100,000)
$(200,000)
$(300,000)
$(400,000)
$(500,000)
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030

VILLAGE OF McFARLAND - SEWER UTILITY
CASH FLOW ANALYSIS
August 2022

Input value in cash flow sheet
Input value from Sensitive Analysis sheet

ASSUMPTIONS		Lift Station Project	Exchange Street Project	
		$ 2,000,000	$ 850,000	
INTEREST INCOME RATE ASSUMED	0.50%	$ 140,722	$ 59,807	
O&M ANNUAL INCREASE	3.00%			
MMSD ANNUAL INCREASE	8.50%	After 2025 change to :		3%
Sewer System replacement fund and lease	3.00%			
2021 Cash and investments-Water and Sewer combined	$ 2,416,424	P. 20 audit		
Assumed amount for sewer-	25%	$ 604,106		

BUDGET ITEM	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
EXPENSES										
Loans										
Bond Pay off										
2015 Note	$ 156,988	$ 154,088	$ 156,333	$ 158,333	$ -	$ -	$ -	$ -	$ -	$ -
2017 Note	$ 38,875	$ 38,088	$ 37,300	$ 41,600	$ 40,800	$ -	$ -	$ -	$ -	$ -
2021 Note		$ 88,500	$ 85,650	$ 89,100	$ 87,500	$ 85,900	$ 89,250	$ 87,550	$ 86,275	$ 85,425
Proposed Lift Station Upgrade ($1M, 10yr, 4%)	$ -		$ 140,722	$ 140,722	$ 140,722	$ 140,722	$ 140,722	$ 140,722	$ 140,722	$ 140,722
Exchange Street Project					$ 59,807	$ 59,807	$ 59,807	$ 59,807	$ 59,807	$ 59,807
Future Projects			$ -	$ -		$ -	$ -	$ -	$ -	$ -
O&M										
Annual Operation and Maintenance	$ 605,314	$ 623,423	$ 636,650	$ 655,750	$ 675,422	$ 695,685	$ 716,555	$ 738,052	$ 760,193	$ 782,999
Annual MMSD Charge	$ 768,590	$ 833,920	$ 850,000	$ 922,250	$ 1,000,641	$ 1,030,660	$ 1,061,580	$ 1,093,428	$ 1,126,231	$ 1,160,017
Other Expenses										
Capital Lease (17.5% Share, 50/50 with water)	$ 15,265	$ 2,332	$ 8,500	$ 8,755	$ 9,018	$ 9,288	$ 9,567	$ 9,854	$ 10,149	$ 10,454
Replacement Funds										
Equipment Replacement Fund Deposit	$ 34,692	$ 33,583	$ 33,583	$ 33,583	$ 33,583	$ 33,583	$ 33,583	$ 33,583	$ 33,583	$ 33,583
NEW Collection System Replacement Fund Deposit	$ 26,000	$ 125,000	$ 125,000	$ 128,750	$ 132,613	$ 136,591	$ 140,689	$ 144,909	$ 149,257	$ 153,734
		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL ANNUAL EXPENSES	**$ 1,645,724**	**$ 1,898,933**	**$ 2,073,738**	**$ 2,178,842**	**$ 2,180,105**	**$ 2,192,236**	**$ 2,251,753**	**$ 2,307,905**	**$ 2,366,217**	**$ 2,426,742**
REVENUES										
User Charge Revenues	$ 1,481,582	$ 1,500,062	$ 1,808,251	$ 2,016,231	$ 2,225,181	$ 2,332,951	$ 2,338,814	$ 2,344,676	$ 2,350,539	$ 2,356,401
Forfeited Discounts Revenue	$ 8,796	$ 8,000	$ 8,000	$ 8,000	$ 8,000	$ 8,000	$ 8,000	$ 8,000	$ 8,000	$ 8,000
Non-Operating Revenue	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Interest Income	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Restricted Replacement Account [Not used as revenue]	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Depreciation Reserve Account [Not used as revenue]										
TOTAL ANNUAL REVENUE	**$ 1,490,378**	**$ 1,508,062**	**$ 1,816,251**	**$ 2,024,231**	**$ 2,233,181**	**$ 2,340,951**	**$ 2,346,814**	**$ 2,352,676**	**$ 2,358,539**	**$ 2,364,401**
Cash and Equivalents - Beginning of Year		$ 604,106	$ 213,235	$ (44,251)	$ (198,863)	$ (145,787)	$ 2,928	$ 97,989	$ 142,760	$ 135,082
Annual Excess Revenue (Shortfall)	$ (155,346)	$ (390,871)	$ (257,487)	$ (154,611)	$ 53,075	$ 148,715	$ 95,061	$ 44,772	$ (7,678)	$ (62,340)
Total Available Carryover	$ 604,106	$ 213,235	$ (44,251)	$ (198,863)	$ (145,787)	$ 2,928	$ 97,989	$ 142,760	$ 135,082	$ 72,741
REVENUE DETAILS										
Equivalent Meters (EM) Added		10	10	10	10	10	10	10	10	10
Gallons/Year Added/EM @ gal/mo/EM (1000 gal)	0	485	485	485	485	485	485	485	485	485
Monthly Usage Per EM		4044								
Estimated Number of Equivalent Meters	3478	3488	3498	3508	3518	3528	3538	3548	3558	3568
Estimated Annual Sewer Usage (1000 gallons)*	201,874	202,360	202,845	203,330	203,816	204,301	204,786	205,272	205,757	206,242
ESTIMATED BI-MONTHLY USER CHARGES										
Fixed Charges on Debt										
Bi-Monthly Fixed Charge per EM Implemented	$ 33.00	$ 33.00	$ 33.00	$ 33.00	$ 33.00	$ 33.00	$ 33.00	$ 33.00	$ 33.00	$ 33.00
Annual Fixed Charge Revenue Generated	$ 688,644	$ 690,624	$ 692,604	$ 694,584	$ 696,564	$ 698,544	$ 700,524	$ 702,504	$ 704,484	$ 706,464
Variable Charges - O, M & R Costs (Cost per 1000 gallons)										
Variable Charge per 1000 Gallons Implemented	$ 4.00	$ 4.00	$ 5.50	$ 6.50	$ 7.50	$ 8.00	$ 8.00	$ 8.00	$ 8.00	$ 8.00
Annual Variable Charge Revenue Generated	$ 807,497	$ 809,438	$ 1,115,647	$ 1,321,647	$ 1,528,617	$ 1,634,407	$ 1,638,290	$ 1,642,172	$ 1,646,055	$ 1,649,937
TOTAL BI-MONTHLY USER CHARGE PER EM	**$ 65.35**	**$ 65.35**	**$ 77.49**	**$ 85.58**	**$ 93.67**	**$ 97.71**	**$ 97.71**	**$ 97.71**	**$ 97.71**	**$ 97.71**
REVENUE GENERATED BY RATES	**$ 1,496,141**	**$ 1,500,062**	**$ 1,808,251**	**$ 2,016,231**	**$ 2,225,181**	**$ 2,332,951**	**$ 2,338,814**	**$ 2,344,676**	**$ 2,350,539**	**$ 2,356,401**
DEBT COVERAGE RATIO	**77.9%**	**78.3%**	**83.6%**	**85.4%**	**97.4%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Replacement Account Total	**$ 521,663**	**$ 555,246**	**$ 588,829**	**$ 622,412**	**$ 655,995**	**$ 689,578**	**$ 723,161**	**$ 756,744**	**$ 790,327**	**$ 823,910**
Replacement fund used	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Net replacement fund	**$ 521,663**	**$ 555,246**	**$ 588,829**	**$ 622,412**	**$ 655,995**	**$ 689,578**	**$ 723,161**	**$ 756,744**	**$ 790,327**	**$ 823,910**

J:\JOB#S\McFarland\MC-200-W1 2022 Sewer User Charge Update\Data\2022 User Charge System

VILLAGE OF
McFarland

SUMMARY SHEET

MEETING DATE: **Monday, August 22, 2022**

SECTION: **Business**

DEPARTMENT: **Public Works**

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

AGENDA ITEM: **Update regarding Lift Station #2 project and design.**

PREVIOUS ACTION:
None

ISSUE SUMMARY:
Lift Station #2, located along Pheasant Run, is in the process of planning for an upgrade. This station was constructed back in the late 1970's and is an underground steel-canned unit that houses the pumps and motors along with controls. This station handles over 50% of the village's daily volume of sewage pumped into Madison Metropolitan Sewerage District's conveyance pipes. Lift station #2 is responsible for handling the ongoing growth on the eastside of the village. Design work is needed this year in order to proceed with construction next year, 2023.

Village staff met with engineering personnel from Town & Country Engineers to discuss the needs of a station to handle today's flows while looking into future projections related to village growth on the east side. As part of the concept of a building layout, confined space entry elimination was included. This elimination helps to promote worker safety. Another aspect of the design is the inclusion of a permanent indoor backup electrical generator with an instantaneous start. All new controls along with pumping apparatuses are being planned to be incorporated too.

The current wetwell, where the sewage is stored until pumping time, will be turned into a manhole structure. A new wetwell will be constructed to accommodate the new submissible pumping system along with capacity for future growth.

Preliminary DRAFT plans are enclosed within the packet.

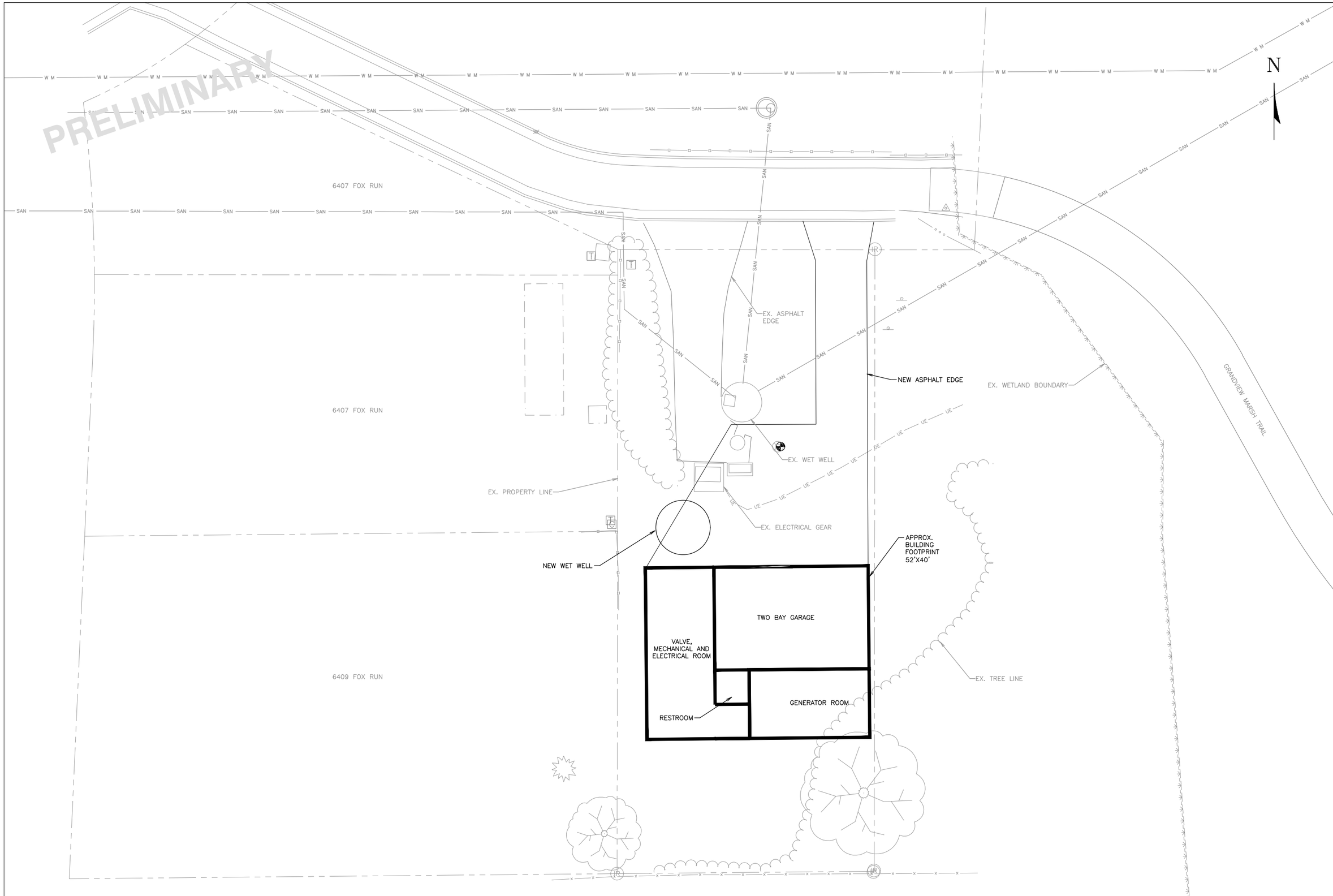
FINANCIAL/BUDGET IMPACT:
Funding for design engineering is included in the 2022 budget.

VILLAGE PLAN REFERENCE:
None.

ORDINANCE REFERENCE:
None.

BOARD, COMMISSION OR COMMITTEE RECOMMENDATION:
No action at this time.

ATTACHMENTS:
1. MC 198 BASE-PLAN



TOWN & COUNTRY ENGINEERING, INC.
6264 Nesbitt Road
Madison, WI 53719
(608) 273-3350
www.tcengineers.net

LIFT STATION 2 SITE PLAN

2023 LIFT STATION 2 IMPROVEMENTS
Marsh Woods Drive
Village of McFarland, Wisconsin

PROJECT NO.:	MC 198
DRAWING FILE:	MC 198 BASE.DWG
DRAWN BY:	T.J.S.
CHECKED BY:	X.X.X
DATE:	8-17-22
REVISIONS:	
SCALE:	0 5 10
SHEET:	1

VILLAGE OF
McFarland

SUMMARY SHEET

MEETING DATE: **Monday, August 22, 2022**

SECTION: **Business**

DEPARTMENT: **Public Works**

CONTACT: **Lee Igl, Streets/Utilities Superintendent, Jim Hessling, Public Works Director**

AGENDA ITEM: **Discussion and action to make a recommendation to the Village Board regarding issuance of a 2023 sidewalk replacement BID.**

PREVIOUS ACTION:
None

ISSUE SUMMARY:
Property owners are the maintaining authority of the sidewalk adjacent to their property. To assist property owners with correction of structural deficiencies with concrete sidewalks and ramps, the Department of Public Works inspects and corrects and/or replaces defective sidewalk sections on an annual basis. This process is driven by inspections and citizen requests/inquiries. Replacement areas are logged on our GIS system. Residents are not assessed for this work as funds in the Public Works budget cover this.

In an effort to streamline the process as contractors' schedules fill up rather quickly, the department would like to bid this project early, in order to secure pricing and a time slot to have the work completed.

Attached maps of the proposed work areas are preliminary. Work in these areas could change due to some of the 2022 work that was previously authorized.

FINANCIAL/BUDGET IMPACT:
The funds for the 2023 Sidewalk Replacement project are projected to be included within the 2023 Budget.

VILLAGE PLAN REFERENCE:
None.

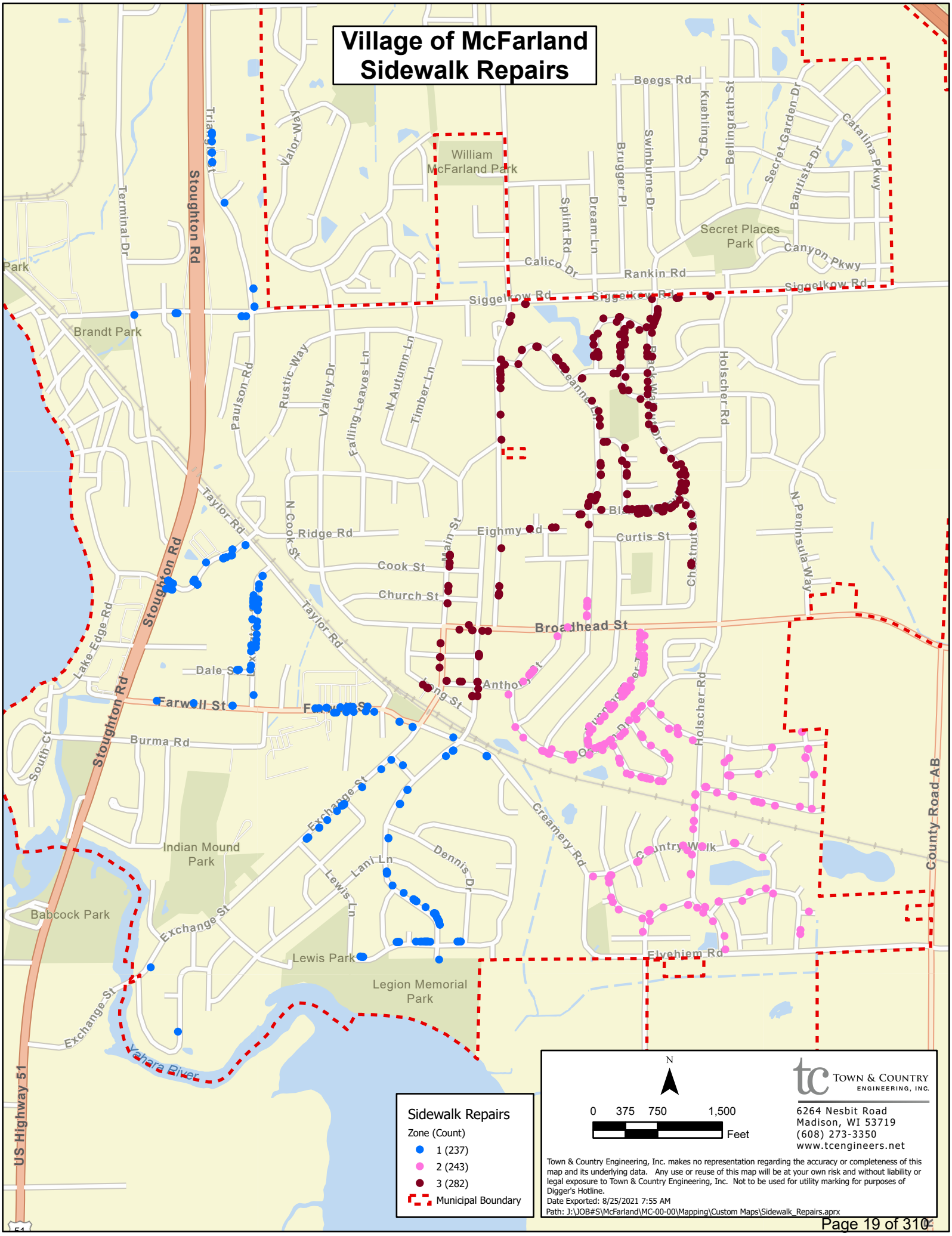
ORDINANCE REFERENCE:
None.

BOARD, COMMISSION OR COMMITTEE RECOMMENDATION:
Motion and second to recommend approval to the Village Board of the 2023 Sidewalk Replacement project and authorize the project for bid.

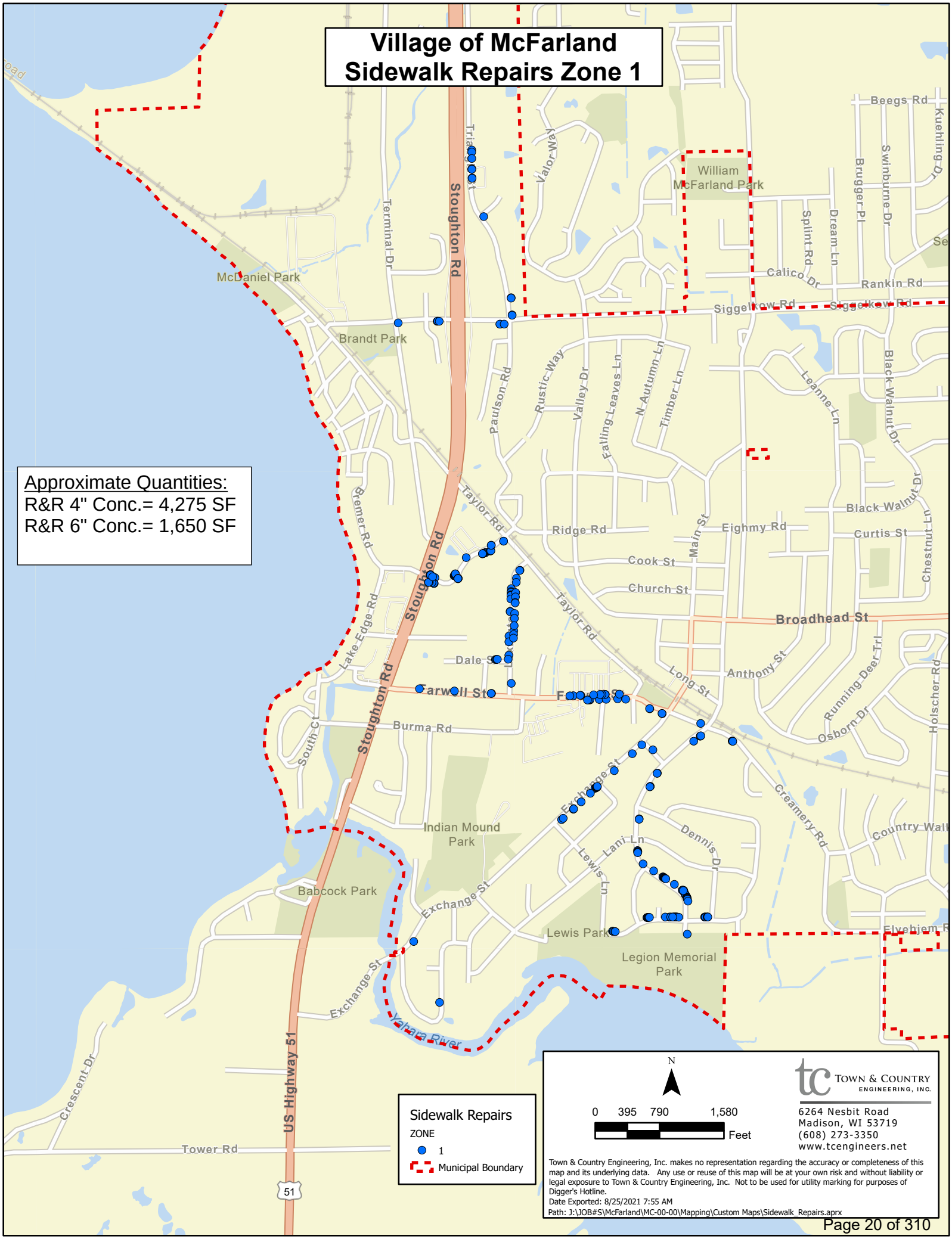
ATTACHMENTS:

1. Sidewalks--All Zones
2. Bidder Documents & Technical Specifications

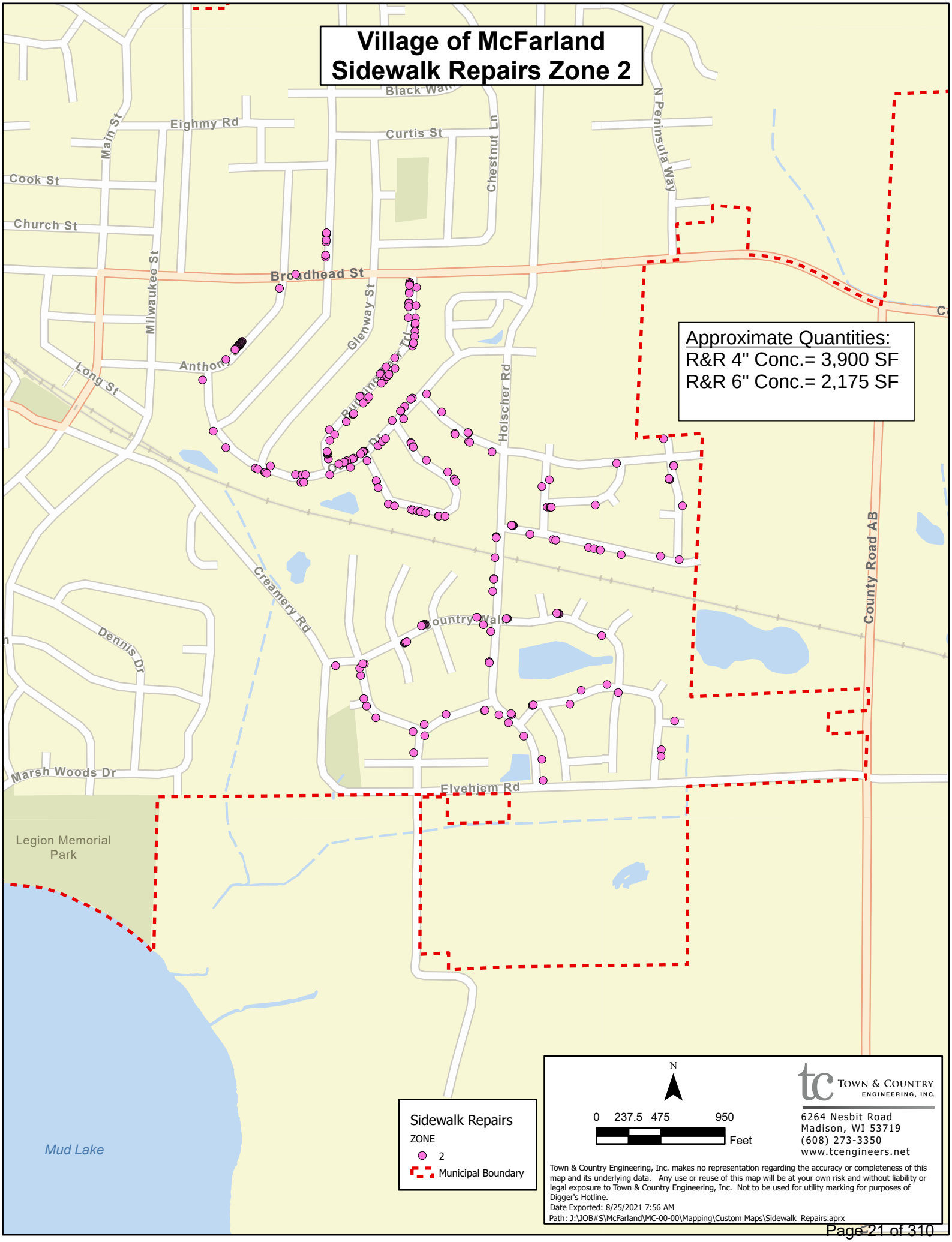
Village of McFarland Sidewalk Repairs



Village of McFarland Sidewalk Repairs Zone 1



Village of McFarland Sidewalk Repairs Zone 2



Village of McFarland Sidewalk Repairs Zone 3

Approximate Quantities:
R&R 4" Conc.= 4,565 SF
R&R 6" Conc.= 2,375 SF

Sidewalk Repair
ZONE
3
Municipal Boundary

N
0 185 370 740
Feet

TOWN & COUNTRY ENGINEERING, INC.
6264 Nesbit Road
Madison, WI 53719
(608) 273-3350
www.tcengineers.net

Town & Country Engineering, Inc. makes no representation regarding the accuracy or completeness of this map and its underlying data. Any use or reuse of this map will be at your own risk and without liability or legal exposure to Town & Country Engineering, Inc. Not to be used for utility marking for purposes of Digger's Hotline.
Date Exported: 8/25/2021 7:56 AM
Path: J:\JOB#S\McFarland\MC-00-00\Mapping\Custom Maps\Sidewalk_Repairs.aprx

Typical Letter of Transmittal
August 18, 2022

Subject: Bidding Documents and Technical Specifications**; 2023 Sidewalk Improvements;** Village of McFarland
Bid Deadline: October 20, 2022 at 10:00 a.m. local time

Ladies and Gentlemen:

Enclosed are the subject Bidding Documents and Technical Specifications. The Bidding Documents require that the ***Bidder's Proof of Responsibility Form must be submitted at least 5 days prior to the Bid Deadline*** by those parties desiring to submit a bid, except for contractors who have submitted such a form to the Village of McFarland within the past year.

Section **01 00 00 Summary of the Work; Special Conditions** located at the beginning of the Technical Specifications, modifies or supplements the Bidding Documents, the General Conditions, or the standard specification sections which make up the remainder of the Technical Specifications, and defines what work is included under each item in the Bid Proposal. This section should be read with care. The sites of the work should also be carefully inspected.

Each of the standard specification sections of the Technical Specifications is divided into three parts:

- General, summarizing the work covered by that section,
- Material & Equipment, where applicable, which provides the specifications for the materials which go into the construction, and
- Construction, where applicable, which sets forth construction and testing procedures to which the Contractor must adhere.

When submitting a bid each bidder must submit the completed Bid Proposal, Affidavit of Organization & Authority and the Bid Security. If you have any questions please notify this office at least one week prior to the Bid Deadline. Thank you for your interest in this project.

Sincerely,
TOWN & COUNTRY ENGINEERING, INC.

Tim Stieve, P.E.
Project Engineer

Bidding Documents and
Technical Specifications

2023 SIDEWALK IMPROVEMENTS

Village of McFarland, Wisconsin

TOWN & COUNTRY ENGINEERING, INC.
Madison ♦ Rhinelander ♦ Kenosha
6264 Nesbitt Road • Madison, WI 53719 • (608) 273-3350 • tce@tcengineers.net

Bidding Documents and
Technical Specifications

2023 SIDEWALK IMPROVEMENTS

Village of McFarland, Wisconsin

TABLE OF CONTENTS

Title	*Pages*
BID DOCUMENTS (PRE-BID)	
00 10 10 Advertisement for Bids	2
00 21 13 Instructions to Bidders	13
00 30 00 Bidder's Proof of Responsibility	3
BID DOCUMENTS (TO BE SUBMITTED WITH THE BID)	
00 41 00 Bid Proposal Form	6
00 41 50 Affidavit of Organization & Authority	1
00 43 00 Bid Bond	2
CONTRACT DOCUMENTS	
00 51 00 Notice of Award Form	1
00 52 00 Agreement Form	6
00 55 00 Notice to Proceed Form	1
00 61 00 Performance Bond Form	3
00 61 50 Payment Bond Form	3
00 62 00 Certificate of Insurance	2
GENERAL CONDITIONS	
00 70 00 General Conditions	71
SUPPLEMENTARY CONDITIONS	
00 80 00 Supplementary Conditions	8

Title *Pages*

TECHNICAL SPECIFICATIONS

DIVISION 01 - GENERAL REQUIREMENTS

01 00 00	Summary of the Work; Special Conditions; Measurement & Payment Criteria	8
01 20 00	Price and Payment Procedures	5
01 25 00	Substitution Procedures	2
01 30 00	Administrative Requirements	7
01 33 00	Submittals	5
01 40 00	Quality Requirements	4
01 60 00	Product Requirements	3
01 60 10	Standard Specification Requirements	9
01 70 00	Execution Requirements and Project Closeout	10

DIVISION 03 - CONCRETE

03 30 01	Cast-In-Place Concrete	6

DIVISION 31 – EARTHWORK

31 22 13	Roadway Excavation & Grading	6
31 25 00	Erosion and Sediment Control	8

DIVISION 32 – EXTERIOR IMPROVEMENTS

32 05 00	Soils and Aggregates and Exterior Improvements	7
32 16 23	Sidewalks	8
32 90 00	Landscape Restoration	6

DIVISION 00
BID DOCUMENTS
(PRE-BID)

ADVERTISEMENT FOR BIDS

PROJECT: **2023 SIDEWALK IMPROVEMENTS**

OWNER: Village of McFarland
5915 Milwaukee Street, P.O. Box 110
McFarland, WI 53558

CONTRACTS AND BID DEADLINE:

Sealed bids for a single contract for sidewalk improvements will be received by the Village of McFarland in the McFarland Village office until 10:00 a.m. local time on October 20, 2022. Bids will be publicly opened and read aloud immediately thereafter in the parking lot at the Municipal Center.

The contract consists of the following approximate quantities:

Remove and Replace 4" Thick Concrete	4,275 square feet
Remove and Replace 6" Thick Concrete	1,650 square feet

The quantities are subject to change without notice prior to document distribution.

CONTRACT DOCUMENTS:

The Contract Documents, consisting of Advertisement for Bids, Instructions to Bidders, Bidder's Proof of Responsibility, Bid Proposal Form, Affidavit of Organization and Authority, Bid Bond (in the amount of 5% of the maximum amount of the bid), Notice of Award Form, Agreement Form, Notice to Proceed Form, Performance/Payment Bond (100%), Certificate of Insurance, General Conditions, Supplementary Conditions, Technical Specifications, Drawings and Addenda (if any) may be examined at the following locations:

Village of McFarland
5915 Milwaukee Street, P.O. Box 110
McFarland, WI 53558

Town & Country Engineering, Inc.
6264 Nesbitt Road
Madison, WI 53719

Copies of the Contract Documents and the Construction Plans may be obtained at the office of Town & Country Engineering, Inc., 6264 Nesbitt Road, Madison, WI 53719 via appointment only. There is a ***$40 non-refundable*** copying and distribution charge for these documents. Electronic bidding documents are available on-line at Questcdn.com, Project No. 8283313 for $30. This fee includes access to submit a bid on-line via Questcdn.

QUALIFICATIONS:

Bidders must be pre-qualified with the Village of McFarland within the last year or must be pre-qualified for this work 5 days prior to the bid deadline in accordance with Section 66.0903 of the Wisconsin Statutes. Each bidder must deposit, with his bid, security in the amount of 5% of the maximum bid amount. Bidders must be experienced in municipal pipeline construction.

RIGHTS RESERVED:

The Village of McFarland reserves the right to reject any and all bids and to waive informalities in any bid.

Published by the authority of:
Matthew Schuenke, Village Administrator
Village of McFarland

SECTION 00 20 00 - INSTRUCTIONS TO BIDDERS

1.1 SUMMARY

A. Document Includes:

1. Defined terms.
2. Copies of Bidding Documents.
3. Qualifications of Bidders.
4. Bid Submittal Documents
5. Existing Site Conditions; Examination of Site.
6. Bidder's Representations.
7. Prebid Conference.
8. Interpretations and Addenda.
9. Bid Security.
10. Contract Times and Liquidated Damages.
11. Substitute and "Or-Equal" Items.
12. Subcontractors, Suppliers and Others.
13. Preparation of Bid.
14. Affirmative Action.
15. Basis of Bid.
16. Submittal of Bid.
17. Modification and Withdrawal of Bid; Corrections of Errors in Bids.
18. Opening of Bids.
19. Bids to Remain Subject to Acceptance.
20. Evaluation of Bids and Award of Contract.
21. Bonds and Insurance.
22. Signing of Agreement.
23. Sales and Use Taxes; Wage Rate Requirements.
24. Contracts to be Assigned.
25. Federal Requirements.

B. Related Documents:

1. Document 00 10 10 Advertisement for Bids.
2. Document 00 41 00 Bid Proposal Form.
3. Document 00 41 40 Bid Form Supplements (if any).
4. Document 00 80 00 Supplementary Conditions.

1.2 DEFINED TERMS.

A. Terms used in these Instructions to Bidders will have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below which are applicable to both the singular and plural thereof:
   1. Bidder - Any individual or entity who submits a Bid directly to the Owner.
   2. Issuing Office - Town & Country Engineering, Inc.

3. Successful Bidder - The lowest responsible Bidder submitting a responsive Bid to whom the Owner makes an award.

1.3 COPIES OF BIDDING DOCUMENTS.

A. Complete sets of the Bidding Documents including drawings and specifications may be obtained from the office of Town & Country Engineering, Inc. Refer to the Advertisement for Bid for mailing address and fees required.

B. Complete sets of Bidding Documents must be used in preparing Bids; neither the Owner nor Town & Country Engineering, Inc. assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

C. The Owner and Town & Country Engineering, Inc. in making copies of Bidding Documents available on the above terms do so only for the purpose of obtaining Bids for the Work and do not authorize or confer a license or grant for any other use.

1.4 QUALIFICATIONS OF BIDDERS.

A. Bidders who have not formally qualified with the Owner for similar bids within twelve (12) months of the Bid Deadline shall do so by filing a Bidder's Proof of Responsibility form enclosed in the Contract Documents and Technical Specifications. In accordance with Wisconsin Statutes, this form should be filed with the Owner prior to five (5) days before the Bid Deadline. The following additional information shall also be submitted:
   1. Evidence of Bidder's authority to do business in the state where the Project is located.
   2. Subcontractor and Supplier qualification information.

B. A Bidder's failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.

C. No requirement in Qualification of Bidders to submit information will prejudice the right of the Owner to seek additional pertinent information regarding Bidder's qualifications.

D. Bidder is advised to carefully review those portions of the Bid Form requiring Bidder's representations and certifications.

E. A formal evaluation of the qualifications of bidders may not be made prior to the bid opening.

1.5 BID SUBMITTAL DOCUMENTS

A. Documents to be submitted to the Owner by the Bid Deadline shall include the Bid Proposal including all Bid Schedules, the addendum acknowledgement and signature pages; any Bid Form supplements; Affidavit of Organization and Authority; and a Bid Bond or Bid Security.

1.6 EXISTING SITE CONDITIONS; EXAMINATION OF SITE.

A. Existing Site Conditions
   1. Subsurface and Physical Conditions; Hazardous Environmental Conditions

a. The Supplementary Conditions identify:
   1) Those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site.
   2) Those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).
   3) Reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site.
   4) Technical Data contained in such reports and drawings.

2. Owner will make copies of reports and drawings referenced above available to any Bidder on request. These reports and drawings are not part of the Contract Documents, but the Technical Data contained therein upon whose accuracy Bidder is entitled to rely, as provided in the General Conditions, has been identified and established in the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any Technical Data or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.
3. If the Supplementary Conditions do not identify Technical Data, the default definition of Technical Data set forth in Article 1 of the General Conditions will apply.

B. Subsurface and Physical Conditions
1. The Supplementary Conditions identify those reports of explorations and tests of subsurface conditions at or contiguous to the Site, if any, that the Engineer has used in preparing the Bidding Documents. The parts of such documents that shall be considered Technical Data are defined in the Supplementary Conditions. The Technical Data describe certain select subsurface conditions that are anticipated to be encountered by a Contractor during construction in specified locations. The provision of the Technical Data is intended to reduce uncertainty and the degree of contingency in submitted Bids. However, Bidders cannot rely solely on the provided Technical Data. Bids should be based upon a comprehensive approach that includes independent review and analysis of the Technical Data, all other Contract Documents, other available information and observable surface conditions. The Contractor should not assume all potential subsurface conditions are described in the Technical Data. The provision of the Technical Data is not intended to relieve Bidders of the responsibility to conduct their own investigations and make their own determinations regarding construction costs, bidding strategies and Bid prices, nor of the responsibility to select and be responsible for the means, methods, techniques, sequences and procedures of construction and for safety precautions and programs incident thereto.

C. Underground Facilities
1. Information and data shown or indicated on the Plan Sheets and within the Specifications with respect to existing underground facilities or structures at or contiguous to the site is based upon information and data furnished to the Owner and Town & Country Engineering, Inc. by the owners of such underground facilities or structures. The Successful Bidder shall make contact with the owners of these facilities to establish locations before starting construction

D. Adequacy of Data
1. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions, and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated subsurface or physical conditions appear in Paragraphs 5.03, 5.04, and 5.05 of the General Conditions. Provisions concerning responsibilities for the adequacy

of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work, appear in Paragraph 5.06 of the General Conditions.

E. Site Visit and Testing by Bidders

1. Upon request, the Owner will provide Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies as Bidder deems necessary for preparing and submitting a successful Bid. Bidder shall comply with all applicable laws and regulations relative to excavations, "utility locates", security or safety concerns, liability insurance and applicable safety programs. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies.

F. Construction Limits

1. Site construction limits are identified on the Plan Sheets and/or within the Specifications. All additional lands and access thereto required for temporary construction facilities, construction equipment, or storage of materials and equipment to be incorporated in the Work are to be obtained and paid for by the Contractor. Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by the Owner unless otherwise provided in the Bidding Documents.

1.7 BIDDER'S REPRESENTATIONS.

A. It is the responsibility of each Bidder before submitting a Bid to:

1. Examine and carefully study the Bidding Documents, including the Plans and any Addenda and the other related data identified in the Bidding Documents;
2. Visit the Site and become familiar with and satisfy Bidder as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;
3. Become familiar with all federal, state, and local laws and regulations that may affect cost, progress, or performance of the Work including but not limited to American Iron and Steel requirements as mandated by Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A - Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2017) and subsequent statutes mandating domestic preference which apply to the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and construction materials.
4. Carefully study all:
   a. Reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, if any, especially with respect to Technical Data in such reports and drawings.
   b. Reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.
5. Undertake additional testing or studies at the Bidder's expense that the Bidder considers necessary to adequately prepare a Bid for the Work, and agree at the time of submitting a

Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price(s) bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents;

6. Consider the information known to Bidder; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, and (3) Bidder's safety precautions and programs;
7. Become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;
8. Promptly provide Town & Country Engineering, Inc. written notice of all conflicts, errors, ambiguities, or discrepancies that the Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Town & Country Engineering, Inc. is acceptable to the Bidder; and
9. Determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work.
10. Agree that the submission of a Bid will constitute an incontrovertible representation that the Bidder has complied with every requirement of this Instructions to Bidders including those listed above and that without exception the Bid is premised upon performing and furnishing the Work required by the Bidding Documents.
11. In addition, by submitting a Bid the Bidder agrees to the following:
    a. The Engineer shall be the sole authority for determining conformance of substitute bid items with the Contract Documents.
    b. The Engineer shall not be required to justify decisions made on substitute bid items.
    c. Substitutions or modifications for material, equipment, Manufacturers, Suppliers and Subcontractors will not be considered after receipt of Bids unless approved in writing by the Owner.

1.8 PREBID CONFERENCE

A. A pre-bid conference, if applicable, will be held at the time and location stated on the invitation or advertisement to bid or in the Bid Proposal Form. Representatives of Owner and Engineer will be present to discuss the project. Bidders are encouraged to attend and participate in the conference. Engineer will transmit to all prospective Bidders of Record such addenda as it considers necessary in response to questions arising at the conference. Oral statements may not be relied upon and will not be binding or legally effective.

1.9 INTERPRETATIONS AND ADDENDA.

A. All questions about the meaning or intent of the Bidding Documents are to be submitted to Town & Country Engineering, Inc. in writing. Interpretations or clarifications considered necessary by Town & Country Engineering, Inc. in response to such questions will be issued by Addenda mailed, e-mailed, faxed or delivered to all parties recorded by Town & Country Engineering, Inc. as having received the Bidding Documents. Questions received less than five

working days prior to the date for opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

B. Addenda may be issued to clarify, correct, supplement or change the Bidding Documents as deemed advisable by Owner or Engineer.

C. All Addenda so issued shall become part of the Contract Documents and Technical Specifications and must be acknowledged by the Bidder on the Bid Proposal Form. Failure of any bidder to receive any such addendum shall not relieve that bidder from any obligation under his bid as submitted. Failure to acknowledge addenda shall, at the Owner's discretion, be grounds for rejection of the bid.

1.10 BID SECURITY.

A. Each Bid must be accompanied by Bid security made payable to the Owner in an amount of 5% of the Bidder's maximum Bid Price (determined by adding the base bid and any alternates and supplemental bid items), or in an amount otherwise required in the Advertisement for Bid, in the form of a certified check, bank money order or a Bid Bond on the form enclosed in the Bidding Documents or on a form issued by a surety meeting the requirements of paragraphs 6.01 and 6.02 of the General Conditions. Bonds shall be executed by the Bidder and a surety corporation licensed to transact business in Wisconsin. Attorneys-in-fact who signs bid bonds must file with each bond a certified and current copy of their power of attorney.

B. The Bid security of the apparent Successful Bidder will be retained until such time that the Bidder has executed the Contract Documents, furnished the required contract security and met the other conditions of the Notice of Award, whereupon the Bid security will be returned. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within 10 days after the Notice of Award, the Owner may consider Bidder to be in default, annul the Notice of Award and the Bid security of that Bidder will be forfeited. Such forfeiture shall be Owner's exclusive remedy if Bidder defaults.

C. The Bid security of other Bidders whom the Owner believes to have a reasonable chance of receiving the Contract Award may be retained by the Owner until the earlier of seven days after the Effective Date of the Agreement or one day after the end of the acceptance period established in Article 18 of this Instructions to Bidders, whereupon Bid security furnished by such Bidders will be returned.

D. Bid security of other Bidders whom Owner believes do not have a reasonable chance of receiving the award will be returned within seven days after the Owner makes such determination.

1.11 CONTRACT TIMES AND LIQUIDATED DAMAGES.

A. The number of days within which, or the dates by which, the Work (or milestones, thereof) is to be (a) Substantially Completed and (b) also completed and ready for final payment are set forth in the Bid Proposal or Section 01 00 00 - Summary of Work of the Specifications and will be included in the final Contract Agreement. In addition, the Bid Proposal establishes the

liquidated damage amounts that can be assessed against the Contractor for failure to comply with the Contract times.

1.12 SUBSTITUTE AND "OR-EQUAL" ITEMS.

A. The Contract for the Work, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents, and those “or-equal” or substitute materials and equipment subsequently approved by Engineer prior to the submittal of Bids and identified by Addendum. No item of material or equipment will be considered by Engineer as an “or-equal” or substitute unless written request for approval has been submitted by Bidder and has been received by Engineer at least 15 days prior to the date for receipt of Bids in the case of a proposed substitute and 5 days prior in the case of a proposed “or-equal.” Each such request shall comply with the requirements of Paragraphs 7.04 and 7.05 of the General Conditions.

B. Each such request shall include Manufacturer’s Certification letter for compliance with Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A - Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2017) and subsequent statutes mandating domestic preference, if applicable. Refer to Manufacturer’s Certification Letter provided in these Contract Documents.

C. The burden of proof of the merit of the proposed item is upon Bidder. Engineer’s decision of approval or disapproval of a proposed item will be final. If Engineer approves any such proposed item, such approval will be set forth in an Addendum issued to all prospective Bidders. Bidders shall not rely upon approvals made in any other manner. Substitutes and “or-equal” materials and equipment may be proposed by Contractor in accordance with Paragraphs 7.04 and 7.05 of the General Conditions after the Effective Date of the Contract.

D. All prices that Bidder sets forth in its Bid shall be based on the presumption that the Contractor will furnish the materials and equipment specified or described in the Bidding Documents, as supplemented by Addenda. Any assumptions regarding the possibility of post-Bid approvals of “or-equal” or substitution requests are made at Bidder’s sole risk.

E. If an award is made, Contractor shall be allowed to submit proposed substitutes and “or-equals” in accordance with the General Conditions.

1.13 SUBCONTRACTORS, SUPPLIERS AND OTHERS.

A. Major Subcontractors and suppliers shall be listed on the appropriate Schedule of the Bid Proposal. If Subcontractors or Suppliers are not specifically listed on the Schedule, a complete listing of these must be submitted to the Owner from the Successful Bidder within five days after the Bid opening. Failure to do so may constitute grounds for rejection of the bid. When so requested by the Owner, a Bidder shall submit an experience statement with pertinent information regarding similar projects and other evidence of qualification for Subcontractors, Suppliers, individuals, or similar entities. Before the Notice of Award is given, if the Owner and Town & Country Engineering, Inc., after due investigation, have reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, the Owner may, before the Notice of Award is given, request the apparent successful Bidder to submit an acceptable substitute without an increase in bid price.

B. If the apparent Successful Bidder declines to make any such substitution, the Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, individuals, or entities. Declining to make requested substitutions will not constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner or Town & Country Engineering, Inc. makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner subject to revocation of such acceptance after the effective date of the Agreement as provided in paragraph 7.06 of the General Conditions.

C. The Contractor shall not be required to employ any Subcontractor, Supplier, individual, or entity against whom the Contractor has reasonable objection.

1.14 PREPARATION OF BID.

A. The Bid Form is included with the Bidding Documents.

B. All blanks on the Bid Form shall be completed in ink and the Bid Form signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each section, base bid item, alternate bid item or supplemental bid item for which a blank space has been provided. In the case of optional alternates the words "No Bid," "No Change," or "Not Applicable" may be entered as appropriate. Unless noted as "required" in the Bid Proposal form, all alternates shall be considered as optional.

C. A Bid by a corporation shall be executed in the corporate name by the president or a vice-president or other corporate officer accompanied by evidence of authority to sign. The corporate seal shall be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown.

D. A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership shall be shown.

E. A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm shall be shown.

F. A Bid by an individual shall show the Bidder's name and official address.

G. A Bid by a joint venture shall be executed by each joint venturer in the manner indicated on the Bid Form. The official address of the joint venture shall be shown.

H. All names shall be printed in ink below the signatures.

I. The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.

J. Postal and e-mail addresses and telephone number for communications regarding the Bid shall be shown.

K. The Bid shall contain evidence of Bidder's authority and qualification to do business in the state where the Project is located, or Bidder shall covenant in writing to obtain such authority and qualification prior to award of the Contract and attach such covenant to the Bid. Bidder's state contractor license number, if any, shall also be shown on the Bid Form.

1.15 AFFIRMATIVE ACTION.

A. Bidders shall agree not to discriminate against any employee or applicant for employment because of age, race, religion, color, handicap, sex, physical condition, and developmental disability as defined by Wisconsin State Statutes. This provision shall include but not be limited to the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rate of pay or other forms of compensation, and selection for training including apprenticeship. The Contractor further agrees to take affirmative action to ensure equal employment opportunities for persons with disabilities. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of the non-discrimination clause.

1.16 BASIS OF BID.

A. For Lump Sum Bids
   1. Bidders shall submit a Bid on a lump sum basis for the Base Bid and include a separate price for each supplemental bid item and for each required alternate described in the Bidding Documents as provided in the Bid Form. In the evaluation of Bids to determine a low bidder, the Base Bid plus alternates in any number and in any order and the total of the supplemental bid items may be selected for award unless otherwise identified in the Bid Proposal form.

B. For Unit Price Bids
   1. Bidders shall submit a Bid on a unit price basis for each item of work listed in the Bid Schedule and include a separate price for each supplemental bid item and for each required alternate described in the Bidding Documents as provided in the Bid Form.
   2. The "Bid Price" (sometimes referred to as the extended price) for each unit price Bid item will be the product of the "Estimated Quantity" (which Owner or its representative has set forth in the Bid Form) for the item and the corresponding "Bid Unit Price" offered by the Bidder. The total of all unit price Bid items will be the sum of these "Bid Prices"; such total will be used by Owner for Bid comparison purposes. The final quantities and Contract Price will be determined in accordance with Paragraph 13.03 of the General Conditions.
   3. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.
   4. The rules for application of alternate bids, if accepted, are set forth in the Bidding Documents. In the evaluation of Bids to determine a low bidder, the Base Bid plus alternates in any number and in any order and the total of the supplemental bid items may be selected for award.

C. Allowances

1. For allowances the Bid price shall include such amounts as the Bidder deems proper for Contractor's overhead, costs, profit, and other expenses on account of the allowances, if any, named in the Contract Documents, in accordance with Paragraph 13.02.B of the General Conditions.

1.17 SUBMITTAL OF BID.

A. Bids shall be submitted via paper copy or electronically. A paper Bid shall be received no later than the date and time prescribed and at the place indicated in the Advertisement for Bids and shall be enclosed in an opaque sealed envelope or package plainly marked with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted), the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate envelope plainly marked on the outside with the notation "BID ENCLOSED." A mailed Bid shall be addressed to the Owner at the address set forth on the first page of the Bid Proposal. An electronic bid shall also be received under the same time constraints via the on-line service listed in the bid advertisement. Faxed or e-mailed Bids are not acceptable, unless specifically authorized by the Owner prior to the Bid Deadline. Bids received after the date and time prescribed, or not submitted at the correct location or in the designated manner, may not be accepted and, in that case, will be returned to the Bidder unopened.

1.18 MODIFICATION AND WITHDRAWAL OF BID; CORRECTIONS OF ERRORS IN BIDS.

A. A bid may be withdrawn by an appropriate document duly executed in the same manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids. Upon receipt of such notice, the unopened Bid will be returned to the Bidder.

B. Section 66.0901 (5) of Wisconsin Statutes applies to modification and corrections of errors in bids, stating as follows:

"(5) CORRECTIONS OF ERRORS IN BIDS. If a person submits a bid or proposal for the performance of public work under any public contract to be let by a municipality and the bidder claims a mistake, omission or error has been made in preparing the bid, the bidder shall, before the bids are opened, make known the fact that an error, omission or mistake has been made. If the bidder makes this fact known, the bid shall be returned to the bidder unopened and the bidder may not bid upon the public contract unless it is readvertised and relet upon the readvertisement. If a bidder makes an error, omission or mistake and discovers it after the bids are opened, the bidder shall immediately and without delay give written notice and make known the fact of the mistake, omission or error which has been committed and submit to the municipality clear and satisfactory evidence of the mistake, omission or error and that it was not caused by any careless act or omission on the bidder's part in the exercise of ordinary care in examining the plans or specifications and in conforming with the provisions of this section. If the discovery and notice of a mistake, omission or error causes a forfeiture, the bidder may not recover the moneys or certified check forfeited as liquidated damages unless it is proven before a court of competent jurisdiction in an action brought for the recovery of the amount forfeited, that in making the mistake, error or omission the bidder was free from carelessness, negligence or inexcusable neglect."

1.19 OPENING OF BIDS.

A. Bids will be opened at the time and place indicated in the advertisement and, unless obviously non-responsive, read aloud publicly. Unsigned bids, incomplete bids and bids not accompanied by bid bonds may be considered unresponsive for purposes of reading the bids aloud. In the case of unsigned bids, if a legally authorized representative of the Bidder is present, the authorized representative will be allowed to sign the bid before it is read aloud publicly. The Owner will then decide whether such a bid will be accepted. An abstract of the amounts of the Bids, including alternates, if any, will be made available to Bidders after the opening of Bids.

1.20 BIDS TO REMAIN SUBJECT TO ACCEPTANCE.

A. All Bids will remain subject to acceptance for the period of time stated in the Advertisement for Bid or in the Bid Form. The Owner may in its sole discretion release any Bid and return the Bid security prior to the end of this period. If no such period of time is stated in the Advertisement for Bids or in the Bid Form, the bids will remain subject to acceptance for a period of sixty (60) calendar days from the Bid Deadline.

1.21 EVALUATION OF BIDS AND AWARD OF CONTRACT.

A. In the evaluation of Bids to determine a low bidder, the Base Bid plus alternates in any number and in any order or combination and the total of the supplemental bid items may be selected for award unless otherwise identified in the Bid Proposal form.

B. The Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, non-responsive, unbalanced, or conditional Bids. Bids may be rejected for failure to comply with any requirements of this section, for alterations of the form, additions to or qualifications on the form, erasures, use of lead pencil to fill out the form, mathematical errors, failure to sign the form, failure to submit bid security, or irregularities of any kind. The Owner further reserves the right to reject the Bid of any Bidder whom it finds, after reasonable inquiry and evaluation, to be non-responsible. The Owner also reserves the right to waive all informalities not involving price, time, or changes in the Work and to negotiate contract terms with the Successful Bidder. The Owner also reserves the right to waive any minor informality and to determine what constitutes a minor informality.

C. More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any Bidder has an interest in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.

D. If the Contract is to be awarded, Owner will award the Contract to the responsible Bidder submitting the lowest responsive bid.

E. In evaluating Bids, the Owner will consider whether or not the Bids comply with the prescribed requirements, as may be requested in the Bid Form or prior to the Notice of Award.

F. In evaluating Bidders, the Owner will consider the qualifications of Bidders and may consider the qualifications and experience of Subcontractors, Suppliers, and other individuals or entities proposed for those portions of the Work for which the identity of Subcontractors, Suppliers, and

other individuals or entities must be submitted as provided in this section, in the Bid Proposal Form or in the Supplementary Conditions.

G. The Owner may conduct such investigations as deemed necessary to establish the responsibility, qualifications, and financial ability of Bidders, proposed Subcontractors, Suppliers, individuals, or entities to perform the Work in accordance with the Contract Documents.

1.22 BONDS AND INSURANCE.

A. Article 6 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth The Owner's requirements as to performance and payment Bonds and insurance. When the Successful Bidder delivers the executed Agreement to the Owner, it must be accompanied by the required contract security and Certificate of Insurance.

1.23 SIGNING AGREEMENT.

A. When Owner gives a Notice of Award to the Successful Bidder, it shall be accompanied by the required number of unsigned counterparts of the Agreement with the other Contract Documents that are identified in the Agreement as attached thereto. Within ten (10) days thereafter, the Successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached documents to the Owner. Within ten (10) days thereafter, the Owner shall deliver one fully signed counterpart to Successful Bidder with a complete set of the Drawings with appropriate identification, unless such complete set of drawings has already been delivered.

1.24 SALES AND USE TAXES; WAGE RATE REQUIREMENTS – IF APPLICABLE.

A. The Supplementary Conditions will define if the Owner is exempt from Wisconsin State sales and use taxes and if government-established wage rates must be paid on the Project.

B. The prevailing wage rates of the U.S. Department of Labor apply to this project. The Labor Standards Provisions found at 29 CFR 5.5(a) apply to this project if the prevailing wage rates of the Department of Labor apply, and if the contract cost is in excess of $100,000, provisions of the Contract Work Hours and Safety Standards Act at 29 CFR 5.5(b) will also apply.

1.25 CONTRACTS TO BE ASSIGNED.

A. The Bid Proposal or Technical Specifications may describe Owner-selected equipment for which procurement contracts have already been executed. The said procurement contracts will be assigned by Owner to Contractor. Contractor must accept the assignments and assume responsibility for the "sellers," who will become Subcontractors to Contractor. Contractor shall provide Owner pre-selected equipment for the price presented in the Allowances or pre-entered in the Bid Proposal form. Contractor shall assume complete responsibility for purchase, delivery, installation, start-up and warranty of the equipment. The scope of the supply commitments for the pre-selected equipment is defined in the Supplementary Conditions or the Technical Specifications.

1.26 FEDERAL REQUIREMENTS – IF APPLICABLE

A. Federal requirements at Article 19 of the Supplementary Conditions apply to this Contract.

B. Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A - Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2017) and subsequent statutes mandating domestic preference applies an American Iron and Steel requirement to this project. All iron and steel products used in this project must be produced in the United States. The term "iron and steel products" means the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and construction materials. The deminimis and minor components waiver apply to this contract.

END OF DOCUMENT 00 20 00

VILLAGE OF MCFARLAND
AFFIDAVIT OF QUALIFICATIONS

_____ ("Affiant"), a duly authorized representative of _____, a potential contractor or subcontractor (hereinafter the "Contractor"), on a project for the Village of McFarland, swears on behalf of said Contractor, under oath and penalty of perjury, as follows:

1. Contractor's permanent place of business is located at:

_____

2. The Contractor, if a business entity, is authorized or registered to transact business in the state by the Department of Financial Institutions in compliance with Wis. Stat. chs. 178, 179, 180, 181, or 183.

3. Neither the Contractor, nor agent, partner or officer of the Contractor, nor any employee who will perform any work on the project, is debarred, suspended, proposed for debarment or declared ineligible from contracting with any unit of federal, state or local government.

4. The Contractor is in compliance with provisions of Section 2000e of Chapter 21, Title 42 of the United States Code and Federal Executive Order No. 11246 as amended by Executive Order No. 11375 (known as the Equal Opportunity Employer provisions).

5. The Contractor has general liability, workers' compensation, unemployment, and automobile insurance at levels sufficient to protect the Village including those liability coverage limits specified in the contract documents.

6. The Contractor has complied with all provisions of Wisconsin prevailing wage law and federal Davis-Bacon related Acts, and all rules and regulations therein, for projects undertaken by the Contractor that are covered by these laws, for the past five (5) years.

7. The Contractor has _____ employees. The Contractor (does / does not) [STRIKE ONE] participant in an Apprenticeship program.

8. The Contractor has a written substance abuse prevention program meeting the requirements of Wis. Stat. § 103.503. As required by Wis. Stat. § 103.503, all employees are subject to drug and alcohol testing before commencing work on the public works project, except that testing of an employee before commencing work on a project is not required if the employee has been participating in a random testing program during the 90 days preceding the date on which the employee commences work on the public construction project.

9. Affiant represents and warrants that all employees who will perform work on the project are properly classified as employees or independent contractors under all applicable state and federal laws.

10. The Contractor (has / has not) [STRIKE ONE] been the subject of any investigation, order or judgment from any state or federal agency or court concerning an employment practice, including but not limited to, classification of employees, unemployment insurance, or discrimination. Copies of any investigation, order or judgment are attached. [STRIKE IF NOT APPLICABLE]

11. The Contractor's employees who will perform work on the project are:
    a. Covered under a current workers' compensation policy; and
    b. Properly classified under such policy.

12. The Contractor is in compliance with all applicable requirements of the federal Affordable Care Act.

13. The Contractor possesses all applicable professional and trade licenses required for performing the public works.

14. The Contractor has adequate financial resources to complete the public construction contract, as well as all other work the bidder is presently under contract to complete.

15. The Contractor is bondable for the terms of the proposed public construction contract.

16. The Contractor has satisfactorily completing the following five projects of similar size and complexity to the proposed public construction project within the last five years.

    a. Project 1:

    b. Project 2:

    c. Project 3:

d. Project 4:

e. Project 5:

17. The Contractor has, and diligently maintains, a written safety program.

18. The Contractor has not been determined to have committed a Serious, Willful or Repeated violation (as defined by OSHA) of OSHA safety standards in the last 10 years.

19. The person signing below has the authority to sign on behalf of, and bind, the Contractor.

20. The Contractor understands that failing to submit the requited affidavit, or providing incorrect, false, or misleading information, shall automatically disqualify the Contractor from be awarded the public construction contract and/or performing work on the project.

Project: _____

Signature: _____

Date: _____

Name: _____

Title: _____

DIVISION 00
BID DOCUMENTS
(TO BE SUBMITTED WITH BID)

BID PROPOSAL FORM

PROJECT: **2023 SIDEWALK IMPROVEMENTS**

OWNER: Village of McFarland
5915 Milwaukee Street, P.O. Box 110
McFarland, WI 53558

BID DEADLINE: October 20, 2022 at 10:00 a.m. local time

The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents, including provision of a Performance Bond and a Payment Bond each in the amount of 100% of the Contract amount.

ACKNOWLEDGMENTS

The undersigned acknowledges that failure to bid all items will be grounds for rejection of our bid.

The undersigned acknowledges the right of the Owner to reject any and all bids, including bids which in the opinion of the Owner, are excessive or are not sufficient to properly carry out the work.

The undersigned acknowledges the right of the Owner to reject the bid of bidders who have previously failed to properly perform or complete on time contracts of similar nature.

Bidder accepts all of the terms and conditions of the Advertisement to Bid and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. The Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

BIDDER'S REPRESENTATIONS & CERTIFICATIONS

In submitting this Bid, Bidder represents, as set forth in the Agreement, that:

A. Bidder has examined and carefully studied the Bidding Documents, the other related data identified in the Bidding Documents, and the following Addenda, receipt of all of which is hereby acknowledged.

Addendum No.	Addendum Date
_____	_____
_____	_____
_____	_____

B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local and Site conditions that may affect cost, progress, and performance of the Work.

C. Bidder is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress and performance of the Work.

D. Bidder has carefully studied (1) reports of explorations and tests of subsurface conditions at or near to the site and all drawings of physical conditions relating to existing surface or

subsurface structures at the site that have been identified in the Supplementary Conditions especially with respect to technical data in such reports and drawings, and (2) reports and drawings of Hazardous Environmental Conditions, if any, at the site that have been identified in the Supplementary Conditions especially with respect to technical data in such reports and drawings.

E. Bidder has considered the information known to Bidder; information commonly known to contractors doing business in the locality of the site; information and observations obtained from visits to the site; the Bidding Documents, and the site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences and procedures of construction to be employed by the Bidder and (3) Bidder's safety precautions and programs.

F. Bidder agrees, based upon the information and observations referred to in the preceding paragraph, that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents.

G. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.

H. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by Engineer is acceptable to Bidder.

I. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work.

J. Bidder certifies that the submission of this Bid constitutes an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, and that, without exception, the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

K. Bidder further certifies that this Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any individual or entity to refrain from bidding; and Bidder has not engaged in corrupt, fraudulent, collusive or coercive practices in competing for the contract.

Bidder will complete the Work in accordance with the Contract Documents for the following prices:

BASE BID

1.	Remove and Replace 4” Thick Concrete Sidewalk and Aprons-Only Zone 1	4,275 sq. ft.	($_____) $_____
2.	Remove and Replace 6” Thick Concrete Sidewalk and Aprons-Only Zone 1	1,650 sq. ft.	($_____) $_____
3.	Truncated Dome Panels	36 sq. ft.	($_____) $_____

BASE BID TOTAL **$** _____

SUPPLEMENTAL BID ITEMS

S1.	Remove and Replace 4” Thick Concrete Sidewalk and Aprons-Only Zone 2	3,900 sq. ft.	($_____) $_____
S2.	Remove and Replace 6” Thick Concrete Sidewalk and Aprons-Only Zone 2	2,175 sq. ft.	($_____) $_____
S3.	Truncated Dome Panels	36 sq. ft.	($_____) $_____

SUPPLEMENTAL BID TOTAL **$** _____

Unit Prices have been computed in accordance with paragraph 11.03.B of the General Conditions.

ACKNOWLEDGMENT

Bidder acknowledges that (1) each Bid unit price includes an amount considered by Bidder to be adequate to cover the Contractor's overhead and profit for each separately identified item, and (2) estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Bid items will be based on actual quantities, determined as provided in the Contract Documents.

TIME OF COMPLETION

Bidder agrees that the Work will be substantially completed, on or before September 1, 2023 and will be completed and ready for final payment in accordance with paragraph 15.06 of the General Conditions on or before September 1, 2023 or within 12 weeks from work start.

BASIS OF AWARD

Award of contract will be made to the lowest responsible, responsive bidders in the Owner's best interests on the basis of the total bid amounts or the total bid amounts plus supplemental bid amounts.

LIQUIDATED DAMAGES

The undersigned agrees that time is of the essence in performing this Contract and that the Owner will suffer financial loss if the Work (and each individual milestone) is not completed within the specified time frames. The undersigned also acknowledges the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by the Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, the Contractor agrees that as liquidated damages to compensate the Owner for additional engineering, legal and administrative costs associated with delay (and not as a penalty or as compensation for other losses), Contractor shall pay Owner the following sums for each day that expires after the times specified for completion as set forth above and in the contract documents:

$1,000 per calendar day

Bidder accepts the provisions of the Agreement as to liquidated damages.

GUARANTEE

By signing this Bid Proposal form the undersigned guarantees workmanship, materials and equipment for a period of one (1) year after final acceptance of the work and component parts by the Owner as indicated by final payment.

The following documents are submitted with and made a condition of this Bid:

A. Required Bid security in the form of _____ payable to the Owner, which is at least 5% of the total of all Estimated Base Bid Prices.

B. The following tabulation of Subcontractors, Suppliers and other individuals and entities:

1. _____

2. _____

3. _____

C. Affidavit of Organization & Authority

DEFINED TERMS

The terms used in this Bid with initial capital letters have the meanings indicated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

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SUBMITTED on _____, 2022.

If Bidder is:

An Individual

Name (typed or printed): _____

By: _____ (SEAL)

(Individual's signature)

Doing business as: _____

Business address: _____

_____

Phone No.: _____ E-Mail: _____

A Partnership

Partnership Name: _____ (SEAL)

By: _____

(Signature of general partner – complete attached Affidavit of Organization and Authority)

Name (typed or printed): _____

Business address: _____

_____

Phone No.: _____ E-Mail: _____

A Corporation

Corporation Name: _____ (SEAL)

State of Incorporation: _____

Type (General Business, Professional, Service, Limited Liability):_____

By: _____

(Signature – complete attached Affidavit of Organization and Authority)

Name (typed or printed): _____

Title: _____

Attest _____

(Signature of Corporate Secretary)

Business address: _____

_____

Phone No.: _____ E-Mail: _____

Date of Qualification to do business is _____.

A Joint Venture

Joint Venturer Name: _____ (SEAL)

By: _____

(Signature of joint venture partner – complete attached Affidavit of Organization and Authority)

Name (typed or printed): _____

Title: _____

Business address: _____

_____

Phone No.: _____ E-Mail: _____

Joint Venturer Name: _____ (SEAL)

By: _____

(Signature – complete attached Affidavit of Organization and Authority)

Name (typed or printed): _____

Title: _____

Business address: _____

_____

Phone No.: _____ E-Mail: _____

Phone Number, and Address for receipt of official communications:

_____

_____

(Each joint venturer must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated above.)

AFFIDAVIT OF ORGANIZATION AND AUTHORITY

_____, being first duly sworn on oath, deposes and says that the bidder on the attached bid proposal is organized as indicated below and that all statements herein made are made on behalf of such bidder and that this deponent is authorized to make them.

(Fill Out Applicable Paragraphs)

1. CORPORATION

The bidder is a corporation organized and existing under the laws of the state of _____ _____ and its president is _____, its secretary is _____ and it does/does not have a corporate seal. The _____ is authorized to sign construction contracts and bids for the company by action of its Board of Directors on _____, a certified copy of which is hereto attached. (Strike out this last sentence, if not applicable).

2. PARTNERSHIP

The bidder is a partnership consisting of _____ and _____ partners doing business under the name of

_____

3. SOLE TRADER

The bidder is an individual and, if operating under a trade name, is as follows:

_____

4. ADDRESS

The business address of the bidder is as follows: _____

_____

_____

Telephone Number: _____

5. STATUTORY SWORN STATEMENT

_____ also deposes and says that he has examined and carefully prepared his bid proposal from the plans and specifications and has checked the name in detail before submitting this proposal or bid; that the statements contained herein are true and correct.

_____
(Signature)

Subscribed and sworn to before me this _____ day of _____, 20_____.

_____

Notary Public, _____ County, _____

My commission expires upon _____

(THIS AFFIDAVIT MUST BE ATTACHED TO AND FILED WITH THE BID PROPOSAL.)

BID BOND

Any singular reference to Bidder, Surety, Owner or other party shall be considered plural where applicable.

BIDDER *(Name and Address)*:

SURETY *(Name, and Address of Principal Place of Business)*:

OWNER *(Name and Address)*:

BID
Bid Due Date:
Description *(Project Name— Include Location)*:

BOND
Bond Number:
Date:
Penal sum _____ $ _____
(Words) (Figures)

Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.

BIDDER	**SURETY**
_____ (Seal)	_____ (Seal)
Bidder's Name and Corporate Seal	Surety's Name and Corporate Seal
By: _____	By: _____
Signature	Signature (Attach Power of Attorney)
_____	_____
Print Name	Print Name
_____	_____
Title	Title
Attest: _____	Attest: _____
Signature	Signature
Title	Title

Note: Addresses are to be used for giving any required notice.
Provide execution by any additional parties, such as joint venturers, if necessary.

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal

sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond shall be Owner's sole and exclusive remedy upon default of Bidder.

2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.

3. This obligation shall be null and void if:

3.1 Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or

3.2 All Bids are rejected by Owner, or

3.3 Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).

4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.

5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from the Bid due date without Surety's written consent.

6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case later than one year after the Bid due date.

7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.

8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.

9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.

10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.

11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

DIVISION 00
CONTRACT DOCUMENTS

NOTICE OF AWARD

Date of Issuance:

Owner: Village of McFarland

Owner Address: 5915 Milwaukee Street, P.O. Box 110
McFarland, WI 53558

Engineer: Town & Country Engineering, Inc. Engineer's Project No.: MC 188

Project: 2023 Sidewalk Improvements

Bidder:

Bidder's Address:

TO BIDDER:

You are notified that Owner has accepted your Bid dated for the above Contract, and that you are the Successful Bidder and are awarded a Contract for

The Contract Price of the awarded Contract is $

Three (3) unexecuted counterparts of the Agreement and the Contract Documents accompany this Notice of Award.

You must comply with the following conditions precedent within 10 days of the date of receipt of this Notice of Award:

1. Deliver to Owner three (3) counterparts of the Agreement, fully executed by Bidder.
2. Deliver with the executed Agreements the Contract security *[e.g., performance and payment bonds]* and insurance documentation as specified in the Instructions to Bidders and General Conditions, Articles 2 and 6.

Failure to comply with these conditions within the time specified will entitle Owner to consider you in default, annul this Notice of Award, and declare your Bid security forfeited.

Within ten days after you comply with the above conditions, Owner will return to you one fully executed counterpart of the Agreement, together with any additional copies of the Contract Documents as indicated in Paragraph 2.02 of the General Conditions.

Owner: _____
Authorized Signature

By: Matt Schuenke

Title: Village Administrator

cc: Town & Country Engineering, Inc. *(6264 Nesbitt Road, Suite 103, Madison, WI 53719)*

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the controlling Laws and Regulations.

AGREEMENT
BETWEEN OWNER AND CONTRACTOR FOR
CONSTRUCTION CONTRACT (STIPULATED PRICE)

Prepared by

EJCDC®
ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

Issued and Published Jointly by

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AMERICAN COUNCIL OF ENGINEERING COMPANIES

ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

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EJCDC® C-520, Agreement Between Owner and Contractor for Construction Contract (Stipulated Price).
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AGREEMENT
BETWEEN OWNER AND CONTRACTOR
FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)

THIS AGREEMENT is by and between _____ ("Owner") and

_____ ("Contractor").

Owner and Contractor hereby agree as follows:

ARTICLE 1 – WORK

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

ARTICLE 2 – THE PROJECT

2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows: _____

ARTICLE 3 – ENGINEER

3.01 The Project has been designed by Town & Country Engineering, Inc.

3.02 The Owner has retained Town & Country Engineering, Inc. ("Engineer") to act as Owner's representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 – CONTRACT TIMES

4.01 *Time of the Essence*

A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 *Contract Times: Dates*

A. The Work will be substantially completed on or before _____, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before _____.

[or]

4.02 *Contract Times: Days*

A. The Work shall be substantially completed within _____ days after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions within _____ days after the date when the Contract Times commence to run.

4.03 *Liquidated Damages*

A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the times specified in Paragraph 4.02 above, plus any

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extensions thereof allowed in accordance with the Contract. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):

1. Substantial Completion: Contractor shall pay Owner $_____ for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.A above for Substantial Completion until the Work is substantially complete.
2. Completion of Remaining Work: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner $_____ for each day that expires after such time until the Work is completed and ready for final payment.
3. Liquidated damages for failing to timely attain Substantial Completion and final completion are not additive and will not be imposed concurrently.

4.04 *Deleted*

ARTICLE 5 – CONTRACT PRICE

5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents an amount in current funds equal to the sum of the amounts determined pursuant to the paragraphs below:

For all Unit Price Work, an amount equal to the sum of the established unit price for each separately identified item of Unit Price Work times the actual quantity of that item as stated in Contractor's Bid, attached henceto as Exhibit A.

The Bid prices for Unit Price Work set forth as of the Effective Date of the Agreement are based on estimated quantities. As provided in Paragraph 13.03 of the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by Engineer.

ARTICLE 6 – PAYMENT PROCEDURES

6.01 *Submittal and Processing of Payments*

A. Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

6.02 *Progress Payments; Retainage*

A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment on or about the 1st day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments

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previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract

a. 95 percent of Work completed (with the remaining being retainage). If the Work has been 50 percent completed as determined by Engineer, and if the character and progress of the Work has been satisfactory to Owner and Engineer, then as long as the character and progress of the Work remain satisfactory to Owner and Engineer, there will be no addition retainage, however, if at 50% completion or any time thereafter the progress of the Work is unsatisfactory, additional amounts may be retained but in no event shall the total retainage be more than 10% of the value of the Work completed.

B. Upon Substantial Completion of the entire construction to be provided under the Contract Documents, Owner shall pay an amount sufficient to increase total payments to Contractor to 97.5 percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less 100 percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.

6.03 *Final Payment*

A. Upon final completion and acceptance of the Work in accordance with Paragraph 15.06 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer as provided in said Paragraph 15.06.

ARTICLE 7 – INTEREST

7.01 All amounts not paid when due shall bear interest at the rate of 6 percent per annum.

ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS

8.01 In order to induce Owner to enter into this Contract, Contractor makes the following representations:

A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.

B. Contractor has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Contractor is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.

D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.

E. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance

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of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (3) Contractor's safety precautions and programs.

F. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.

G. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.

H. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.

I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

J. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

ARTICLE 9 – CONTRACT DOCUMENTS

9.01 *Contents*

A. The Contract Documents consist of the following:

1. This Agreement (pages 1 to ___, inclusive).
2. Performance bond (pages 1 to 3, inclusive).
3. Payment bond (pages 1 to 3, inclusive).
4. General Conditions (pages cover to 65, inclusive).
5. Supplementary Conditions (pages 1 to ___, inclusive).
6. Specifications as listed in the table of contents of the Project Manual.
7. Drawings consisting of ___ sheets with each sheet bearing the following general title: ___.
8. Addenda (numbers ___ to ___, inclusive).
9. Exhibits to this Agreement (enumerated as follows):
   a. Contractor's Bid (pages ___ to ___, inclusive).
10. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
    a. Notice to Proceed.
    b. Work Change Directives.
    c. Change Orders.
    d. Field Orders.

B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).

C. There are no Contract Documents other than those listed above in this Article 9.

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D. The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.

ARTICLE 10 – MISCELLANEOUS

10.01 *Terms*

A. Terms used in this Agreement will have the meanings stated in the General Conditions and the Supplementary Conditions.

10.02 *Assignment of Contract*

A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

10.03 *Successors and Assigns*

A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

10.04 *Severability*

A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

10.05 *Contractor's Certifications*

A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 10.05:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process or in the Contract execution;

2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and

4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

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10.06 *Other Provisions*

A. Owner stipulates that if the General Conditions that are made a part of this Contract are based on EJCDC® C-700, Standard General Conditions for the Construction Contract, published by the Engineers Joint Contract Documents Committee®, and if Owner is the party that has furnished said General Conditions, then Owner has plainly shown all modifications to the standard wording of such published document to the Contractor, through a process such as highlighting or "track changes" (redline/strikeout), or in the Supplementary Conditions.

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement.

This Agreement will be effective on _____ (which is the Effective Date of the Contract).

OWNER:	CONTRACTOR:
_____	_____
By: _____	By: _____
Title: _____	Title: _____
	(If Contractor is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)
Attest: _____	Attest: _____
Title: _____	Title: _____
Address for giving notices:	Address for giving notices:
_____	_____
_____	_____
_____	_____
	License No.: _____ *(where applicable)*

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NOTICE TO PROCEED

Owner: Village of McFarland

Contractor:

Engineer: Town & Country Engineering, Inc. Engineer's Project No.: MC 188

Project: 2023 Sidewalk Improvements Effective Date of Contract:

TO CONTRACTOR:

Owner hereby notifies Contractor that the Contract Times under the above Contract will commence to run on _____.

On that date, Contractor shall start performing its obligations under the Contract Documents. No Work shall be done at the Site prior to such date. In accordance with the Agreement, [the date of Substantial Completion is _____, and the date of readiness for final payment is_____] ***or*** [the number of calendar days to achieve Substantial Completion is _____, and the number of calendar days to achieve readiness for final payment is _____].

Before starting any Work at the Site, Contractor must comply with the following:

Owner**:** _____ Date: _____
Authorized Signature

By: Matt Schuenke

Title: Village Administrator

cc: Town & Country Engineering, Inc. *(6264 Nesbitt Road, Madison, WI 53719)*

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ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

PERFORMANCE BOND

CONTRACTOR *(name and address)*:

SURETY *(name and address of principal place of business)*:

OWNER *(name and address)*:

CONSTRUCTION CONTRACT
Effective Date of the Agreement:
Amount:
Description *(name and location)*:

BOND
Bond Number:
Date *(not earlier than the Effective Date of the Agreement of the Construction Contract)*:
Amount:
Modifications to this Bond Form: ☐ None ☐ See Paragraph 16

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

_____ *(seal)*
Contractor's Name and Corporate Seal

By: _____
Signature

_____
Print Name

_____
Title

Attest:_____
Signature

_____
Title

SURETY

_____ *(seal)*
Surety's Name and Corporate Seal

By:_____
Signature *(attach power of attorney)*

_____
Print Name

_____
Title

Attest:_____
Signature

_____
Title

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

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1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.

3. If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after:

3.1 The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;

3.2 The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and

3.3 The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

5. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:

5.4.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or

5.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:

7.1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

7.2 additional legal, design professional, and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and

7.3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.

9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.

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10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.

11. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit shall be applicable.

12. Notice to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

14. Definitions

14.1 Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

14.2 Construction Contract: The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

14.3 Contractor Default: Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

14.4 Owner Default: Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

14.5 Contract Documents: All the documents that comprise the agreement between the Owner and Contractor.

15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

16. Modifications to this Bond are as follows:

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PAYMENT BOND

CONTRACTOR *(name and address)*:

SURETY *(name and address of principal place of business)*:

OWNER *(name and address)*:

CONSTRUCTION CONTRACT
Effective Date of the Agreement:
Amount:
Description *(name and location)*:

BOND
Bond Number:
Date *(not earlier than the Effective Date of the Agreement of the Construction Contract)*:
Amount:
Modifications to this Bond Form: ☐ None ☐ See Paragraph 18

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

_____ *(seal)*
Contractor's Name and Corporate Seal

By: _____
Signature

_____
Print Name

_____
Title

Attest: _____
Signature

_____
Title

SURETY

_____ *(seal)*
Surety's Name and Corporate Seal

By: _____
Signature *(attach power of attorney)*

_____
Print Name

_____
Title

Attest: _____
Signature

_____
Title

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

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1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.

2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.

3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.

4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.

5. The Surety's obligations to a Claimant under this Bond shall arise after the following:

   5.1 Claimants who do not have a direct contract with the Contractor,

      5.1.1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and

      5.1.2 have sent a Claim to the Surety (at the address described in Paragraph 13).

   5.2 Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).

6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.

7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:

   7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and

   7.2 Pay or arrange for payment of any undisputed amounts.

   7.3 The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

8. The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

9. Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.

11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.

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12. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

13. Notice and Claims to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.

14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

16. **Definitions**

16.1 **Claim:** A written statement by the Claimant including at a minimum:

1. The name of the Claimant;
2. The name of the person for whom the labor was done, or materials or equipment furnished;
3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
4. A brief description of the labor, materials, or equipment furnished;
5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
7. The total amount of previous payments received by the Claimant; and
8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.

16.2 **Claimant:** An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms of "labor, materials, or equipment" that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.

16.3 **Construction Contract:** The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

16.4 **Owner Default**: Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

16.5 **Contract Documents:** All the documents that comprise the agreement between the Owner and Contractor.

17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

18. Modifications to this Bond are as follows:

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CERTIFICATE OF INSURANCE

This certifies to the Addresses shown below that the following described policies, subject to their terms, conditions and exclusions, have been issued to:

NAME AND ADDRESS OF INSURED: _____
_____
_____

DATE: _____

COVERING (Show Project Name and/or Number and Location) _____
_____

Addresses: _____
(Owner) _____
_____

Date: _____

KIND OF INSURANCE	POLICY NO.	ACTIVE DATES	LIMITS OR LIABILITY	
1. (a) Worker's Compensation	_____	_____	$_____	Statutory Worker's Compensation
(b) Employer's Liability	_____	_____	$_____	One Accident and Aggregate Disease
2. Comprehensive General Liability	_____	_____	$_____	Each Occur.-Premises & Operations
	_____	_____	$_____	Each Occur.-Independent Contractors
(a) Bodily Injury	_____	_____	$_____	Each Occur.-Completed Oper. & Prod
	_____	_____	$_____	Each Occurrence-Contractual
	_____	_____	$_____	Aggregate-Completed Oper. & Prod.
(b) Personal Injury	_____	_____	$_____	Each Person Aggregate
	_____	_____	$_____	General Aggregate
	_____	_____	$_____	Each Occur.- Premises & Operations
	_____	_____	$_____	Each Occur.-Independent Contractors
	_____	_____	$_____	Each Occur.-Completed Oper. & Prod
(c) Property Damage	_____	_____	$_____	Each Occurrence-Contractual
	_____	_____	$_____	Aggregate-
	_____	_____	$_____	Aggregate-Operations, Independent Contractors, Prod. & Contractual
3. Comprehensive Automobile Liability	_____	_____	$_____	Each Person
	_____	_____	$_____	Each Occurrence
	_____	_____	$_____	Each Occurrence
4. Umbrella	_____	_____	$_____	

UNDER GENERAL LIABILITY POLICY OR POLICIES

	YES	NO
1. Does Property Damage Liability Insurance shown include coverage for XC and U hazards?	____	____
2. Is Occurrence Basis Coverage provided under Property Damage Liability?	____	____
3. Is Board Form Property Damage Coverage provided for this Project?	____	____
4. Does Personal Injury Liability Insurance include coverage for personal injury sustained by any person as a result of an offense directly or indirectly related to the employment of such person by the Insured?	____	____
5. Is coverage provided for Contractual Liability (including indemnification provision) assumed by Insured?	____	____

UNDER AUTOMOBILE LIABILITY POLICY OR POLICIES

1. Does coverage above apply to non-owned and hired automobiles?	____	____
2. Is Occurrence Basis Coverage provided under Property Damage Liability?	____	____

_____

(NAME OF INSURANCE COMPANY)

_____

_____

(ADDRESS)

_____

(SIGNATURE OF AUTHORIZED REPRESENTATIVE)

CANCELLATION OR NON-RENEWAL

In the event of cancellation or non-renewal of any of the foregoing, fifteen (15) days written notice shall be given to the party to whom this certificate is addressed.

EXTENT OF CERTIFICATION

This certificate is issued for information purposes, only, and confers no rights upon the holder. By its issuance the company does not alter, change, modify or extend any of the provisions of the above policies.

ADDITIONAL PARTIES LISTED AS INSURED UNDER CONTRACTOR'S GENERAL LIABILITY POLICY:

		YES	NO
Engineer:	Town & Country Engineering, Inc.	_____	_____
Owner:	Village of McFarland, Wisconsin	_____	_____

DIVISION 00
GENERAL CONDITIONS

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the controlling Laws and Regulations.

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

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ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

Issued and Published Jointly by

ACEC
AMERICAN COUNCIL OF ENGINEERING COMPANIES

ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

National Society of Professional Engineers®

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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

TABLE OF CONTENTS **Page**

Article 1 – Definitions and Terminology 1
1.01 Defined Terms 1
1.02 Terminology 5
Article 2 – Preliminary Matters 6
2.01 Delivery of Bonds and Evidence of Insurance 6
2.02 Copies of Documents 6
2.03 Before Starting Construction 6
2.04 Preconstruction Conference; Designation of Authorized Representatives 7
2.05 Initial Acceptance of Schedules 7
2.06 Electronic Transmittals 7
Article 3 – Documents: Intent, Requirements, Reuse 8
3.01 Intent 8
3.02 Reference Standards 8
3.03 Reporting and Resolving Discrepancies 8
3.04 Requirements of the Contract Documents 9
3.05 Reuse of Documents 10
Article 4 – Commencement and Progress of the Work 10
4.01 Commencement of Contract Times; Notice to Proceed 10
4.02 Starting the Work 10
4.03 Reference Points 10
4.04 Progress Schedule 10
4.05 Delays in Contractor's Progress 11
Article 5 – Availability of Lands; Subsurface and Physical Conditions; Hazardous Environmental Conditions 12
5.01 Availability of Lands 12
5.02 Use of Site and Other Areas 12
5.03 Subsurface and Physical Conditions 13
5.04 Differing Subsurface or Physical Conditions 14
5.05 Underground Facilities 15
5.06 Hazardous Environmental Conditions at Site 17
Article 6 – Bonds and Insurance 19
6.01 Performance, Payment, and Other Bonds 19
6.02 Insurance—General Provisions 19
6.03 Contractor's Insurance 20
6.04 Owner's Liability Insurance 23
6.05 Property Insurance 23
6.06 Waiver of Rights 25
6.07 Receipt and Application of Property Insurance Proceeds 25

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Article 7 – Contractor's Responsibilities 26
7.01 Supervision and Superintendence 26
7.02 Labor; Working Hours 26
7.03 Services, Materials, and Equipment 26
7.04 "Or Equals" 27
7.05 Substitutes 28
7.06 Concerning Subcontractors, Suppliers, and Others 29
7.07 Patent Fees and Royalties 31
7.08 Permits 31
7.09 Taxes 32
7.10 Laws and Regulations 32
7.11 Record Documents 32
7.12 Safety and Protection 32
7.13 Safety Representative 33
7.14 Hazard Communication Programs 33
7.15 Emergencies 34
7.16 Shop Drawings, Samples, and Other Submittals 34
7.17 Contractor's General Warranty and Guarantee 36
7.18 Indemnification 37
7.19 Delegation of Professional Design Services 37
Article 8 – Other Work at the Site 38
8.01 Other Work 38
8.02 Coordination 39
8.03 Legal Relationships 39
Article 9 – Owner's Responsibilities 40
9.01 Communications to Contractor 40
9.02 Replacement of Engineer 40
9.03 Furnish Data 40
9.04 Pay When Due 40
9.05 Lands and Easements; Reports, Tests, and Drawings 40
9.06 Insurance 40
9.07 Change Orders 40
9.08 Inspections, Tests, and Approvals 41
9.09 Limitations on Owner's Responsibilities 41
9.10 Undisclosed Hazardous Environmental Condition 41
9.11 Evidence of Financial Arrangements 41
9.12 Safety Programs 41
Article 10 – Engineer's Status During Construction 41
10.01 Owner's Representative 41
10.02 Visits to Site 41
10.03 Project Representative 42
10.04 Rejecting Defective Work 42
10.05 Shop Drawings, Change Orders and Payments 42
10.06 Determinations for Unit Price Work 42
10.07 Decisions on Requirements of Contract Documents and Acceptability of Work 42
10.08 Limitations on Engineer's Authority and Responsibilities 42
10.09 Compliance with Safety Program 43

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Article 11 – Amending the Contract Documents; Changes in the Work 43
11.01 Amending and Supplementing Contract Documents 43
11.02 Owner-Authorized Changes in the Work 44
11.03 Unauthorized Changes in the Work 44
11.04 Change of Contract Price 44
11.05 Change of Contract Times 45
11.06 Change Proposals 45
11.07 Execution of Change Orders 46
11.08 Notification to Surety 47
Article 12 – Claims 47
12.01 Claims 47
Article 13 – Cost of the Work; Allowances; Unit Price Work 48
13.01 Cost of the Work 48
13.02 Allowances 50
13.03 Unit Price Work 51
Article 14 – Tests and Inspections; Correction, Removal or Acceptance of Defective Work 52
14.01 Access to Work 52
14.02 Tests, Inspections, and Approvals 52
14.03 Defective Work 53
14.04 Acceptance of Defective Work 53
14.05 Uncovering Work 53
14.06 Owner May Stop the Work 54
14.07 Owner May Correct Defective Work 54
Article 15 – Payments to Contractor; Set-Offs; Completion; Correction Period 55
15.01 Progress Payments 55
15.02 Contractor's Warranty of Title 58
15.03 Substantial Completion 58
15.04 Partial Use or Occupancy 59
15.05 Final Inspection 59
15.06 Final Payment 59
15.07 Waiver of Claims 61
15.08 Correction Period 61
Article 16 – Suspension of Work and Termination 62
16.01 Owner May Suspend Work 62
16.02 Owner May Terminate for Cause 62
16.03 Owner May Terminate For Convenience 63
16.04 Contractor May Stop Work or Terminate 63
Article 17 – Final Resolution of Disputes 64
17.01 Methods and Procedures 64

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Article 18 – Miscellaneous 64
18.01 Giving Notice 64
18.02 Computation of Times 64
18.03 Cumulative Remedies 64
18.04 Limitation of Damages 65
18.05 No Waiver 65
18.06 Survival of Obligations 65
18.07 Controlling Law 65
18.08 Headings 65

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.

2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.

3. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

5. *Bidder*—An individual or entity that submits a Bid to Owner.

6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.

7. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.

8. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.

9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.

10. *Claim*—(a) A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein: seeking an adjustment of Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract; or (b) a demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal; or seeking resolution of a contractual issue that Engineer

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has declined to address. A demand for money or services by a third party is not a Claim.

11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. ("CERCLA"); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5501 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. ("RCRA"); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, state, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.

12. *Contract*—The entire and integrated written contract between the Owner and Contractor concerning the Work.

13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.

14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents. .

15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.

16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.

17. *Cost of the Work*—See Paragraph 13.01 for definition.

18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.

19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.

20. *Engineer*—The individual or entity named as such in the Agreement.

21. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.

22. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated in the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, does not establish a Hazardous Environmental Condition.

23. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

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24. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.

25. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date or by a time prior to Substantial Completion of all the Work.

26. *Notice of Award*—The written notice by Owner to a Bidder of Owner's acceptance of the Bid.

27. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.

28. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.

29. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.

30. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.

31. *Project Manual*—The written documents prepared for, or made available for, procuring and constructing the Work, including but not limited to the Bidding Documents or other construction procurement documents, geotechnical and existing conditions information, the Agreement, bond forms, General Conditions, Supplementary Conditions, and Specifications. The contents of the Project Manual may be bound in one or more volumes.

32. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative or "RPR" includes any assistants or field staff of Resident Project Representative.

33. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.

34. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer's review of the submittals and the performance of related construction activities.

35. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

36. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.

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37. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands furnished by Owner which are designated for the use of Contractor.

38. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.

39. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.

40. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

41. *Successful Bidder*—The Bidder whose Bid the Owner accepts, and to which the Owner makes an award of contract, subject to stated conditions.

42. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.

43. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.

44. *Technical Data*—Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (a) subsurface conditions at the Site, or physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) or (b) Hazardous Environmental Conditions at the Site. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then the data contained in boring logs, recorded measurements of subsurface water levels, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical or environmental report prepared for the Project and made available to Contractor are hereby defined as Technical Data with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06.

45. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including but not limited to those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, fiber optic transmissions, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

46. *Unit Price Work*—Work to be paid for on the basis of unit prices.

47. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.

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48. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

1.02 *Terminology*

A. The words and terms discussed in the following paragraphs are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.

B. *Intent of Certain Terms or Adjectives*:

1. The Contract Documents include the terms "as allowed," "as approved," "as ordered," "as directed" or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.

C. *Day*:

1. The word "day" means a calendar day of 24 hours measured from midnight to the next midnight.

D. *Defective*:

1. The word "defective," when modifying the word "Work," refers to Work that is unsatisfactory, faulty, or deficient in that it:

a. does not conform to the Contract Documents; or

b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or

c. has been damaged prior to Engineer's recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or 15.04).

E. *Furnish, Install, Perform, Provide*:

1. The word "furnish," when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word "install," when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

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3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.

4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words “furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.

F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 – PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

A. *Bonds*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.

B. *Evidence of Contractor’s Insurance*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract), the certificates and other evidence of insurance required to be provided by Contractor in accordance with Article 6.

C. *Evidence of Owner’s Insurance*: After receipt of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or otherwise), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

2.02 *Copies of Documents*

A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully executed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.

B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

2.03 *Before Starting Construction*

A. *Preliminary Schedules*: Within 10 days after the Effective Date of the Contract (or as otherwise specifically required by the Contract Documents), Contractor shall submit to Engineer for timely review:

1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;

2. a preliminary Schedule of Submittals; and

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3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.

B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.05 *Initial Acceptance of Schedules*

A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.03.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.

1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.

2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.

3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.

2.06 *Electronic Transmittals*

A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may transmit, and shall accept, Project-related correspondence, text, data, documents, drawings, information, and graphics, including but not limited to Shop Drawings and other submittals, in electronic media or digital format, either directly, or through access to a secure Project website.

B. If the Contract does not establish protocols for electronic or digital transmittals, then Owner, Engineer, and Contractor shall jointly develop such protocols.

C. When transmitting items in electronic media or digital format, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the recipient's use of software application packages, operating systems, or

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computer hardware differing from those used in the drafting or transmittal of the items, or from those established in applicable transmittal protocols.

ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

A. The Contract Documents are complementary; what is required by one is as binding as if required by all.

B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents.

C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic or digital versions of the Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version shall govern.

D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.

E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.

3.02 *Reference Standards*

A. Standards Specifications, Codes, Laws and Regulations

1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard specification, manual, reference standard, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies*:

1. *Contractor's Verification of Figures and Field Measurements*: Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict,

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error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.

2. *Contractor's Review of Contract Documents*: If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.

3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. *Resolving Discrepancies*:

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:

   a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); or

   b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Requirements of the Contract Documents*

A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work thereunder.

B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.

C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Owner and Contractor that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

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3.05 *Reuse of Documents*

A. Contractor and its Subcontractors and Suppliers shall not:

1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or

2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.

B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

4.01 *Commencement of Contract Times; Notice to Proceed*

A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Contract or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Contract. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Contract, whichever date is earlier.

4.02 *Starting the Work*

A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to such date.

4.03 *Reference Points*

A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.04 *Progress Schedule*

A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.

1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.

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2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 11.

B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.05 *Delays in Contractor's Progress*

A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Times and Contract Price. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.

C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:

1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;

2. abnormal weather conditions;

3. acts or failures to act of utility owners (other than those performing other work at or adjacent to the Site by arrangement with the Owner, as contemplated in Article 8); and

4. acts of war or terrorism.

D. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5.

E. Paragraph 8.03 governs delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.

F. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor.

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G. Contractor must submit any Change Proposal seeking an adjustment in Contract Price or Contract Times under this paragraph within 30 days of the commencement of the delaying, disrupting, or interfering event.

ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.01 *Availability of Lands*

A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.

B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.

C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

5.02 *Use of Site and Other Areas*

A. *Limitation on Use of Site and Other Areas*:

1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.

2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.12, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or at law; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part

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by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.

B. *Removal of Debris During Performance of the Work*: During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

C. *Cleaning*: Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. *Loading of Structures*: Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent structures or land to stresses or pressures that will endanger them.

5.03 *Subsurface and Physical Conditions*

A. *Reports and Drawings*: The Supplementary Conditions identify:

1. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site;

2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities); and

3. Technical Data contained in such reports and drawings.

B. *Reliance by Contractor on Technical Data Authorized*: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

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5.04 *Differing Subsurface or Physical Conditions*

A. *Notice by Contractor*: If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site either:

1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate; or

2. is of such a nature as to require a change in the Drawings or Specifications; or

3. differs materially from that shown or indicated in the Contract Documents; or

4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

B. *Engineer's Review*: After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine the necessity of Owner's obtaining additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A above; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.

C. *Owner's Statement to Contractor Regarding Site Condition*: After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.

D. *Possible Price and Times Adjustments*:

1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, or both, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

a. such condition must fall within any one or more of the categories described in Paragraph 5.04.A;

b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,

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c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:

a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise; or

b. the existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or

c. Contractor failed to give the written notice as required by Paragraph 5.04.A.

3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.

4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.

5.05 *Underground Facilities*

A. *Contractor's Responsibilities*: The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or adjacent to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. Owner and Engineer do not warrant or guarantee the accuracy or completeness of any such information or data provided by others; and

2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:

a. reviewing and checking all information and data regarding existing Underground Facilities at the Site;

b. locating all Underground Facilities shown or indicated in the Contract Documents as being at the Site;

c. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and

d. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.

B. *Notice by Contractor*: If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, then Contractor shall, promptly after

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becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer.

C. *Engineer's Review*: Engineer will promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the Underground Facility in question; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and advise Owner in writing of Engineer's findings, conclusions, and recommendations. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

D. *Owner's Statement to Contractor Regarding Underground Facility*: After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question, addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.

E. *Possible Price and Times Adjustments*:

1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, or both, to the extent that any existing Underground Facility at the Site that was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

    a. Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated the existence or actual location of the Underground Facility in question;

    b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;

    c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times; and

    d. Contractor gave the notice required in Paragraph 5.05.B.

2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.

3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.

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5.06 *Hazardous Environmental Conditions at Site*

A. *Reports and Drawings*: The Supplementary Conditions identify:

1. those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and

2. Technical Data contained in such reports and drawings.

B. *Reliance by Contractor on Technical Data Authorized*: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.

C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.

D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.

E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.

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F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.

G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off.

H. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.

I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.H shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

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ARTICLE 6 – BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of all of Contractor's obligations under the Contract. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the Supplementary Conditions, or other specific provisions of the Contract. Contractor shall also furnish such other bonds as are required by the Supplementary Conditions or other specific provisions of the Contract.

B. All bonds shall be in the form prescribed by the Contract except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (as amended and supplemented) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.

C. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds in the required amounts.

D. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or its right to do business is terminated in any state or jurisdiction where any part of the Project is located, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the bond and surety requirements above.

E. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner's termination rights under Article 16.

F. Upon request, Owner shall provide a copy of the payment bond to any Subcontractor, Supplier, or other person or entity claiming to have furnished labor or materials used in the performance of the Work.

6.02 *Insurance—General Provisions*

A. Owner and Contractor shall obtain and maintain insurance as required in this Article and in the Supplementary Conditions.

B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.

C. Contractor shall deliver to Owner, with copies to each named insured and additional insured (as identified in this Article, in the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Contractor has obtained and is

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maintaining the policies, coverages, and endorsements required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

D. Owner shall deliver to Contractor, with copies to each named insured and additional insured (as identified in this Article, the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Owner has obtained and is maintaining the policies, coverages, and endorsements required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

E. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, shall not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.

F. If either party does not purchase or maintain all of the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.

G. If Contractor has failed to obtain and maintain required insurance, Owner may exclude the Contractor from the Site, impose an appropriate set-off against payment, and exercise Owner's termination rights under Article 16.

H. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price shall be adjusted accordingly.

I. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests.

J. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner and other individuals and entities in the Contract.

6.03 *Contractor's Insurance*

A. *Workers' Compensation*: Contractor shall purchase and maintain workers' compensation and employer's liability insurance for:

1. claims under workers' compensation, disability benefits, and other similar employee benefit acts.

2. United States Longshoreman and Harbor Workers' Compensation Act and Jones Act coverage (if applicable).

3. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees (by stop-gap endorsement in monopolist worker's compensation states).

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4. Foreign voluntary worker compensation (if applicable).

B. *Commercial General Liability—Claims Covered*: Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against:

1. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees.

2. claims for damages insured by reasonably available personal injury liability coverage.

3. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.

C. *Commercial General Liability—Form and Content*: Contractor's commercial liability policy shall be written on a 1996 (or later) ISO commercial general liability form (occurrence form) and include the following coverages and endorsements:

1. Products and completed operations coverage:

   a. Such insurance shall be maintained for three years after final payment.

   b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.

2. Blanket contractual liability coverage, to the extent permitted by law, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.

3. Broad form property damage coverage.

4. Severability of interest.

5. Underground, explosion, and collapse coverage.

6. Personal injury coverage.

7. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together); or CG 20 10 07 04 and CG 20 37 07 04 (together); or their equivalent.

8. For design professional additional insureds, ISO Endorsement CG 20 32 07 04, "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.

D. *Automobile liability*: Contractor shall purchase and maintain automobile liability insurance against claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy shall be written on an occurrence basis.

E. *Umbrella or excess liability*: Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer's liability, commercial general liability, and automobile liability insurance described in the paragraphs above. Subject to industry-standard exclusions, the coverage afforded shall follow form as to each and every one of the underlying policies.

F. *Contractor's pollution liability insurance*: Contractor shall purchase and maintain a policy covering third-party injury and property damage claims, including clean-up costs, as a result

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of pollution conditions arising from Contractor's operations and completed operations. This insurance shall be maintained for no less than three years after final completion.

G. *Additional insureds*: The Contractor's commercial general liability, automobile liability, umbrella or excess, and pollution liability policies shall include and list as additional insureds Owner and Engineer, and any individuals or entities identified in the Supplementary Conditions; include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds; and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis. Contractor shall obtain all necessary endorsements to support these requirements.

H. *Contractor's professional liability insurance*: If Contractor will provide or furnish professional services under this Contract, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance shall provide protection against claims arising out of performance of professional design or related services, and caused by a negligent error, omission, or act for which the insured party is legally liable. It shall be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. If such professional design services are performed by a Subcontractor, and not by Contractor itself, then the requirements of this paragraph may be satisfied through the purchasing and maintenance of such insurance by such Subcontractor.

I. *General provisions*: The policies of insurance required by this Paragraph 6.03 shall:

1. include at least the specific coverages provided in this Article.
2. be written for not less than the limits of liability provided in this Article and in the Supplementary Conditions, or required by Laws or Regulations, whichever is greater.
3. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least 10 days prior written notice has been given to Contractor. Within three days of receipt of any such written notice, Contractor shall provide a copy of the notice to Owner, Engineer, and each other insured under the policy.
4. remain in effect at least until final payment (and longer if expressly required in this Article) and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract Documents.
5. be appropriate for the Work being performed and provide protection from claims that may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable.

J. The coverage requirements for specific policies of insurance must be met by such policies, and not by reference to excess or umbrella insurance provided in other policies.

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6.04 *Owner's Liability Insurance*

A. In addition to the insurance required to be provided by Contractor under Paragraph 6.03, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.

B. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.

6.05 *Property Insurance*

A. *Builder's Risk*: Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the full insurable replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:

1. include the Owner and Contractor as named insureds, and all Subcontractors, and any individuals or entities required by the Supplementary Conditions to be insured under such builder's risk policy, as insureds or named insureds. For purposes of the remainder of this Paragraph 6.05, Paragraphs 6.06 and 6.07, and any corresponding Supplementary Conditions, the parties required to be insured shall collectively be referred to as "insureds."

2. be written on a builder's risk "all risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire; lightning; windstorm; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; flood; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; water damage (other than that caused by flood); and such other perils or causes of loss as may be specifically required by the Supplementary Conditions. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; or flood, are not commercially available under builder's risk policies, by endorsement or otherwise, such insurance may be provided through other insurance policies acceptable to Owner and Contractor.

3. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.

4. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects).

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5. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).
6. extend to cover damage or loss to insured property while in transit.
7. allow for partial occupation or use of the Work by Owner, such that those portions of the Work that are not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
8. allow for the waiver of the insurer's subrogation rights, as set forth below.
9. provide primary coverage for all losses and damages caused by the perils or causes of loss covered.
10. not include a co-insurance clause.
11. include an exception for ensuing losses from physical damage or loss with respect to any defective workmanship, design, or materials exclusions.
12. include performance/hot testing and start-up.
13. be maintained in effect, subject to the provisions herein regarding Substantial Completion and partial occupancy or use of the Work by Owner, until the Work is complete.

B. *Notice of Cancellation or Change*: All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 6.05 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured.

C. *Deductibles*: The purchaser of any required builder's risk or property insurance shall pay for costs not covered because of the application of a policy deductible.

D. *Partial Occupancy or Use by Owner*: If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide notice of such occupancy or use to the builder's risk insurer. The builder's risk insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy; rather, those portions of the Work that are occupied or used by Owner may come off the builder's risk policy, while those portions of the Work not yet occupied or used by Owner shall remain covered by the builder's risk insurance.

E. *Additional Insurance*: If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.05, it may do so at Contractor's expense.

F. *Insurance of Other Property*: If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, such as tools, construction equipment, or other personal property owned by Contractor, a Subcontractor, or an employee of Contractor or a Subcontractor, then the entity or individual owning such property item will be responsible for deciding whether to insure it, and if so in what amount.

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6.06 *Waiver of Rights*

A. All policies purchased in accordance with Paragraph 6.05, expressly including the builder's risk policy, shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any insureds thereunder, or against Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all Subcontractors, all individuals or entities identified in the Supplementary Conditions as insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.

B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for:

1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and

2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06.

C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 6.06.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them.

D. Contractor shall be responsible for assuring that the agreement under which a Subcontractor performs a portion of the Work contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by builder's risk insurance and any other property insurance applicable to the Work.

6.07 *Receipt and Application of Property Insurance Proceeds*

A. Any insured loss under the builder's risk and other policies of insurance required by Paragraph 6.05 will be adjusted and settled with the named insured that purchased the

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policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.

B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.05 shall distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.

C. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the money so received applied on account thereof, and the Work and the cost thereof covered by Change Order, if needed.

ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES

7.01 *Supervision and Superintendence*

A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.

B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.02 *Labor; Working Hours*

A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.

B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

7.03 *Services, Materials, and Equipment*

A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.

B. All materials and equipment incorporated into the Work shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and

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guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

7.04 *"Or Equals"*

A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment, or items from other proposed suppliers under the circumstances described below.

1. If Engineer in its sole discretion determines that an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer shall deem it an "or equal" item. For the purposes of this paragraph, a proposed item of material or equipment will be considered functionally equal to an item so named if:

a. in the exercise of reasonable judgment Engineer determines that:

1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;

3) it has a proven record of performance and availability of responsive service; and

4) it is not objectionable to Owner.

b. Contractor certifies that, if approved and incorporated into the Work:

1) there will be no increase in cost to the Owner or increase in Contract Times; and

2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

B. *Contractor's Expense*: Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.

C. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal", which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.

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D. *Effect of Engineer's Determination*: Neither approval nor denial of an "or-equal" request shall result in any change in Contract Price. The Engineer's denial of an "or-equal" request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents.

E. *Treatment as a Substitution Request*: If Engineer determines that an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer considered the proposed item as a substitute pursuant to Paragraph 7.05.

7.05 *Substitutes*

A. Unless the specification or description of an item of material or equipment required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment under the circumstances described below. To the extent possible such requests shall be made before commencement of related construction at the Site.

1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of material or equipment from anyone other than Contractor.

2. The requirements for review by Engineer will be as set forth in Paragraph 7.05.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.

3. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:

a. shall certify that the proposed substitute item will:

1) perform adequately the functions and achieve the results called for by the general design,

2) be similar in substance to that specified, and

3) be suited to the same use as that specified.

b. will state:

1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times,

2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and

3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.

c. will identify:

1) all variations of the proposed substitute item from that specified, and

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2) available engineering, sales, maintenance, repair, and replacement services.

d. shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.

B. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.

C. *Special Guarantee*: Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.

D. *Reimbursement of Engineer's Cost*: Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

E. *Contractor's Expense*: Contractor shall provide all data in support of any proposed substitute at Contractor's expense.

F. *Effect of Engineer's Determination*: If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.05.D, by timely submittal of a Change Proposal.

7.06 *Concerning Subcontractors, Suppliers, and Others*

A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner.

B. Contractor shall retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of designated parts of the Work if required by the Contract to do so.

C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against which Contractor has reasonable objection.

D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable, during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within five days.

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E. Owner may require the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors, Suppliers, or other individuals or entities for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor, Supplier, or other individual or entity so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity.

F. If Owner requires the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, or both, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.

G. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.

H. On a monthly basis Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.

I. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions.

J. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors, Suppliers, and all other individuals or entities performing or furnishing any of the Work.

K. Contractor shall restrict all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed herein.

L. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

M. All Work performed for Contractor by a Subcontractor or Supplier shall be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer.

N. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor on account of Work performed for Contractor by the particular Subcontractor or Supplier.

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O. Nothing in the Contract Documents:

1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier, or other individual or entity; nor

2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

7.07 *Patent Fees and Royalties*

A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.

B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.

C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

7.08 *Permits*

A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work

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7.09 *Taxes*

A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

7.10 *Laws and Regulations*

A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.

B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work or other action. It shall not be Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.

C. Owner or Contractor may give notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.11 *Record Documents*

A. Contractor shall maintain in a safe place at the Site one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved Shop Drawings. Contractor shall keep such record documents in good order and annotate them to show changes made during construction. These record documents, together with all approved Samples, will be available to Engineer for reference. Upon completion of the Work, Contractor shall deliver these record documents to Engineer.

7.12 *Safety and Protection*

A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:

1. all persons on the Site or who may be affected by the Work;

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2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and

3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify Owner; the owners of adjacent property, Underground Facilities, and other utilities; and other contractors and utility owners performing work at or adjacent to the Site, when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.

C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.

D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.

E. All damage, injury, or loss to any property referred to in Paragraph 7.12.A.2 or 7.12.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

F. Contractor's duties and responsibilities for safety and protection shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 15.06.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

G. Contractor's duties and responsibilities for safety and protection shall resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.13 *Safety Representative*

A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

7.14 *Hazard Communication Programs*

A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or

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exchanged between or among employers at the Site in accordance with Laws or Regulations.

7.15 *Emergencies*

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

7.16 *Shop Drawings, Samples, and Other Submittals*

A. *Shop Drawing and Sample Submittal Requirements*:

1. Before submitting a Shop Drawing or Sample, Contractor shall have:

a. reviewed and coordinated the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;

b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;

c. determined and verified the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and

d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.

2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that submittal, and that Contractor approves the submittal.

3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be set forth in a written communication separate from the Shop Drawings or Sample submittal; and, in addition, in the case of Shop Drawings by a specific notation made on each Shop Drawing submitted to Engineer for review and approval of each such variation.

B. *Submittals for Shop Drawings and Samples*: Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals. Each submittal will be identified as Engineer may require.

1. *Shop Drawings*:

a. Contractor shall submit the number of copies required in the Specifications.

b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to

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provide and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.D.

2. *Samples*:

   a. Contractor shall submit the number of Samples required in the Specifications.

   b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 7.16.D.

3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

C. *Other Submittals*: Contractor shall submit other submittals to Engineer in accordance with the accepted Schedule of Submittals, and pursuant to the applicable terms of the Specifications.

D. *Engineer's Review*:

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions or programs incident thereto.

3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

4. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Contract Documents in a Field Order.

5. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 7.16.A and B.

6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, shall not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.

7. Neither Engineer's receipt, review, acceptance or approval of a Shop Drawing, Sample, or other submittal shall result in such item becoming a Contract Document.

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8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.D.4.

E. *Resubmittal Procedures*:

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.

2. Contractor shall furnish required submittals with sufficient information and accuracy to obtain required approval of an item with no more than three submittals. Engineer will record Engineer's time for reviewing a fourth or subsequent submittal of a Shop Drawings, sample, or other item requiring approval, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges.

3. If Contractor requests a change of a previously approved submittal item, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

7.17 *Contractor's General Warranty and Guarantee*

A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on Contractor's warranty and guarantee.

B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or

2. normal wear and tear under normal usage.

C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:

1. observations by Engineer;

2. recommendation by Engineer or payment by Owner of any progress or final payment;

3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;

4. use or occupancy of the Work or any part thereof by Owner;

5. any review and approval of a Shop Drawing or Sample submittal;

6. the issuance of a notice of acceptability by Engineer;

7. any inspection, test, or approval by others; or

8. any correction of defective Work by Owner.

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D. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract shall govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

7.18 *Indemnification*

A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable.

B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

C. The indemnification obligations of Contractor under Paragraph 7.18.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:

1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or

2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

7.19 *Delegation of Professional Design Services*

A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable Laws and Regulations.

B. If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, and other submittals prepared by such professional. Shop

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Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.

C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.

D. Pursuant to this paragraph, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 7.16.D.1.

E. Contractor shall not be responsible for the adequacy of the performance or design criteria specified by Owner or Engineer.

ARTICLE 8 – OTHER WORK AT THE SITE

8.01 *Other Work*

A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.

B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any utility work at or adjacent to the Site, Owner shall provide such information to Contractor.

C. Contractor shall afford each other contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.

D. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 8, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

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8.02 *Coordination*

A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:

1. the identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;
2. an itemization of the specific matters to be covered by such authority and responsibility; and
3. the extent of such authority and responsibilities.

B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

8.03 *Legal Relationships*

A. If, in the course of performing other work at or adjacent to the Site for Owner, the Owner's employees, any other contractor working for Owner, or any utility owner causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment shall take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract. When applicable, any such equitable adjustment in Contract Price shall be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due to Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this paragraph.

C. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due to Contractor.

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D. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

ARTICLE 9 – OWNER'S RESPONSIBILITIES

9.01 *Communications to Contractor*

A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

9.02 *Replacement of Engineer*

A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer's status under the Contract Documents shall be that of the former Engineer.

9.03 *Furnish Data*

A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

9.04 *Pay When Due*

A. Owner shall make payments to Contractor when they are due as provided in the Agreement.

9.05 *Lands and Easements; Reports, Tests, and Drawings*

A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.

B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.

C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

9.06 *Insurance*

A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.

9.07 *Change Orders*

A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.

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9.08 *Inspections, Tests, and Approvals*

A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.

9.09 *Limitations on Owner's Responsibilities*

A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

9.10 *Undisclosed Hazardous Environmental Condition*

A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.

9.11 *Evidence of Financial Arrangements*

A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents (including obligations under proposed changes in the Work).

9.12 *Safety Programs*

A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.

B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

ARTICLE 10 – ENGINEER'S STATUS DURING CONSTRUCTION

10.01 *Owner's Representative*

A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract.

10.02 *Visits to Site*

A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 10.08. Particularly, but without limitation, during

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or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 *Project Representative*

A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 10.08. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent, or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

10.04 *Rejecting Defective Work*

A. Engineer has the authority to reject Work in accordance with Article 14.

10.05 *Shop Drawings, Change Orders and Payments*

A. Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, are set forth in Paragraph 7.16.

B. Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, are set forth in Paragraph 7.19.

C. Engineer's authority as to Change Orders is set forth in Article 11.

D. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.06 *Determinations for Unit Price Work*

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

10.07 *Decisions on Requirements of Contract Documents and Acceptability of Work*

A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.08 *Limitations on Engineer's Authority and Responsibilities*

A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

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B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 15.06.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.

E. The limitations upon authority and responsibility set forth in this Paragraph 10.08 shall also apply to the Resident Project Representative, if any.

10.09 *Compliance with Safety Program*

A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs (if any) of which Engineer has been informed.

ARTICLE 11 – AMENDING THE CONTRACT DOCUMENTS; CHANGES IN THE WORK

11.01 *Amending and Supplementing Contract Documents*

A. The Contract Documents may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.

1. *Change Orders*:

a. If an amendment or supplement to the Contract Documents includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order. A Change Order also may be used to establish amendments and supplements of the Contract Documents that do not affect the Contract Price or Contract Times.

b. Owner and Contractor may amend those terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, without the recommendation of the Engineer. Such an amendment shall be set forth in a Change Order.

2. *Work Change Directives*: A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.04 regarding change of Contract Price. Contractor must submit any Change Proposal seeking an

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adjustment of the Contract Price or the Contract Times, or both, no later than 30 days after the completion of the Work set out in the Work Change Directive. Owner must submit any Claim seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 60 days after issuance of the Work Change Directive.

3. *Field Orders*: Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.02 *Owner-Authorized Changes in the Work*

A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Such changes shall be supported by Engineer's recommendation, to the extent the change involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters. Such changes may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work shall be performed under the applicable conditions of the Contract Documents. Nothing in this paragraph shall obligate Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

11.03 *Unauthorized Changes in the Work*

A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.

11.04 *Change of Contract Price*

A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment of Contract Price shall comply with the provisions of Article 12.

B. An adjustment in the Contract Price will be determined as follows:

1. where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03); or

2. where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.04.C.2); or

3. where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on

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the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.04.C).

C. *Contractor's Fee*: When applicable, the Contractor's fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or

2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:

a. for costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee shall be 15 percent;

b. for costs incurred under Paragraph 13.01.B.3, the Contractor's fee shall be five percent;

c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.01.C.2.a and 11.01.C.2.b is that the Contractor's fee shall be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.A.1 and 13.01.A.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of five percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted work the maximum total fee to be paid by Owner shall be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the work;

d. no fee shall be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;

e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and

f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 11.04.C.2.a through 11.04.C.2.e, inclusive.

11.05 *Change of Contract Times*

A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment in the Contract Times shall comply with the provisions of Article 12.

B. An adjustment of the Contract Times shall be subject to the limitations set forth in Paragraph 4.05, concerning delays in Contractor's progress.

11.06 *Change Proposals*

A. Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; appeal an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; contest a set-off against payment due; or seek other relief under

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the Contract. The Change Proposal shall specify any proposed change in Contract Times or Contract Price, or both, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents.

1. *Procedures*: Contractor shall submit each Change Proposal to Engineer promptly (but in no event later than 30 days) after the start of the event giving rise thereto, or after such initial decision. The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal. The supporting data shall be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event. Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal.

2. *Engineer's Action*: Engineer will review each Change Proposal and, within 30 days after receipt of the Contractor's supporting data, either deny the Change Proposal in whole, approve it in whole, or deny it in part and approve it in part. Such actions shall be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.

3. *Binding Decision*: Engineer's decision will be final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.

B. *Resolution of Certain Change Proposals*: If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice shall be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.

11.07 *Execution of Change Orders*

A. Owner and Contractor shall execute appropriate Change Orders covering:

1. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;

2. changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;

3. changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.02, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters; and

4. changes in the Contract Price or Contract Times, or other changes, which embody the substance of any final and binding results under Paragraph 11.06, or Article 12.

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B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of this Paragraph 11.07, it shall be deemed to be of full force and effect, as if fully executed.

11.08 *Notification to Surety*

A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

ARTICLE 12 – CLAIMS

12.01 *Claims*

A. *Claims Process*: The following disputes between Owner and Contractor shall be submitted to the Claims process set forth in this Article:

1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;

2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents; and

3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters.

B. *Submittal of Claim*: The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim shall rest with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, or both, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.

C. *Review and Resolution*: The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim shall be stated in writing and submitted to the other party, with a copy to Engineer.

D. *Mediation*:

1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate shall stay the Claim submittal and response process.

2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process shall resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim

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submittal and decision process shall resume as of the date of the conclusion of the mediation, as determined by the mediator.

3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.

E. *Partial Approval*: If the party receiving a Claim approves the Claim in part and denies it in part, such action shall be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.

F. *Denial of Claim*: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim shall be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.

G. *Final and Binding Results*: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim shall be incorporated in a Change Order to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

ARTICLE 13 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

13.01 *Cost of the Work*

A. *Purposes for Determination of Cost of the Work*: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:

1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or

2. To determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.

B. *Costs Included*: Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 13.01.C, and shall include only the following items:

1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, and vacation and holiday pay applicable

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thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.

3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.

4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.

5. Supplemental costs including the following:

    a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.

    b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.

    c. Rentals of all construction equipment and machinery, and the parts thereof, whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.

    d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.

    e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

    f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 6.05), provided such losses and damages have resulted from causes

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other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.

g. The cost of utilities, fuel, and sanitary facilities at the Site.

h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.

i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.

C. *Costs Excluded*: The term Cost of the Work shall not include any of the following items:

1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expediters, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.

2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.

3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.

4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.

D. *Contractor's Fee*: When the Work as a whole is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 11.04.C.

E. *Documentation*: Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

13.02 *Allowances*

A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

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B. *Cash Allowances*: Contractor agrees that:

1. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

2. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

C. *Contingency Allowance*: Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

13.03 *Unit Price Work*

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.

C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.

D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of the following paragraph.

E. Within 30 days of Engineer's written decision under the preceding paragraph, Contractor may submit a Change Proposal, or Owner may file a Claim, seeking an adjustment in the Contract Price if:

1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement;

2. there is no corresponding adjustment with respect to any other item of Work; and

3. Contractor believes that it is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price, and the parties are unable to agree as to the amount of any such increase or decrease.

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ARTICLE 14 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

14.01 *Access to Work*

A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction will have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply therewith as applicable.

14.02 *Tests, Inspections, and Approvals*

A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.

B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work shall be governed by the provisions of Paragraph 14.05.

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.

D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:

1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;

2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;

3. by manufacturers of equipment furnished under the Contract Documents;

4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and

5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

Such inspections and tests shall be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.

F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering shall be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to

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cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 *Defective Work*

A. *Contractor's Obligation*: It is Contractor's obligation to assure that the Work is not defective.

B. *Engineer's Authority*: Engineer has the authority to determine whether Work is defective, and to reject defective Work.

C. *Notice of Defects*: Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.

D. *Correction, or Removal and Replacement*: Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.

E. *Preservation of Warranties*: When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

F. *Costs and Damages*: In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs, losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

14.04 *Acceptance of Defective Work*

A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work shall be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

14.05 *Uncovering Work*

A. Engineer has the authority to require special inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.

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B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.

C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.

1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.

2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

14.06 *Owner May Stop the Work*

A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

14.07 *Owner May Correct Defective Work*

A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, then Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.

B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.

C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will

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include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

ARTICLE 15 – PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

15.01 *Progress Payments*

A. *Basis for Progress Payments*: The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.

B. *Applications for Payments*:

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens, and evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.

3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

C. *Review of Applications*:

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.

2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

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a. the Work has progressed to the point indicated;

b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and

c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.

3. By recommending any such payment Engineer will not thereby be deemed to have represented that:

a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or

b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:

a. to supervise, direct, or control the Work, or

b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or

c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or

d. to make any examination to ascertain how or for what purposes Contractor has used the money paid on account of the Contract Price, or

e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.

5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.

6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:

a. the Work is defective, requiring correction or replacement;

b. the Contract Price has been reduced by Change Orders;

c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;

d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or

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e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. *Payment Becomes Due*:

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.

E. *Reductions in Payment by Owner*:

1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:

a. claims have been made against Owner on account of Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages on account of Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;

b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;

c. Contractor has failed to provide and maintain required bonds or insurance;

d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;

e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;

f. the Work is defective, requiring correction or replacement;

g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;

h. the Contract Price has been reduced by Change Orders;

i. an event that would constitute a default by Contractor and therefore justify a termination for cause has occurred;

j. liquidated damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;

k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;

l. there are other items entitling Owner to a set off against the amount recommended.

2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount

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remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed shall be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.

3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 15.01.C.1 and subject to interest as provided in the Agreement.

15.02 *Contractor's Warranty of Title*

A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than seven days after the time of payment by Owner.

15.03 *Substantial Completion*

A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.

B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.

C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which shall fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.

D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.

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E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.

F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 *Partial Use or Occupancy*

A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:

1. At any time Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through E for that part of the Work.

2. At any time Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.05 regarding builder's risk or other property insurance.

15.05 *Final Inspection*

A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

15.06 *Final Payment*

A. *Application for Payment*:

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of

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inspection, annotated record documents (as provided in Paragraph 7.11), and other documents, Contractor may make application for final payment.

2. The final Application for Payment shall be accompanied (except as previously delivered) by:

   a. all documentation called for in the Contract Documents;

   b. consent of the surety, if any, to final payment;

   c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.

   d. a list of all disputes that Contractor believes are unsettled; and

   e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.

B. *Engineer's Review of Application and Acceptance*:

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the Application for Payment to Owner for payment. Such recommendation shall account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to the provisions of Paragraph 15.07. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. *Completion of Work*: The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment.

D. *Payment Becomes Due*: Thirty days after the presentation to Owner of the final Application for Payment and accompanying documentation, the amount recommended by Engineer (less any further sum Owner is entitled to set off against Engineer's recommendation,

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including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions above with respect to progress payments) will become due and shall be paid by Owner to Contractor.

15.07 *Waiver of Claims*

A. The making of final payment will not constitute a waiver by Owner of claims or rights against Contractor. Owner expressly reserves claims and rights arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 15.05, from Contractor's failure to comply with the Contract Documents or the terms of any special guarantees specified therein, from outstanding Claims by Owner, or from Contractor's continuing obligations under the Contract Documents.

B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted or appealed under the provisions of Article 17.

15.08 *Correction Period*

A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents, or by any specific provision of the Contract Documents), any Work is found to be defective, or if the repair of any damages to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas used by Contractor as permitted by Laws and Regulations, is found to be defective, then Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

1. correct the defective repairs to the Site or such other adjacent areas;
2. correct such defective Work;
3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting therefrom.

B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others).

C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.

D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

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E. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 16 – SUSPENSION OF WORK AND TERMINATION

16.01 *Owner May Suspend Work*

A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension. Any Change Proposal seeking such adjustments shall be submitted no later than 30 days after the date fixed for resumption of Work.

16.02 *Owner May Terminate for Cause*

A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:

1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule);

2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;

3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or

4. Contractor's repeated disregard of the authority of Owner or Engineer.

B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) ten days written notice that Owner is considering a declaration that Contractor is in default and termination of the contract, Owner may proceed to:

1. declare Contractor to be in default, and give Contractor (and any surety) notice that the Contract is terminated; and

2. enforce the rights available to Owner under any applicable performance bond.

C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.

D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within seven days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.

E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses,

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and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.

G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond shall govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 *Owner May Terminate For Convenience*

A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):

1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and

3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.

B. Contractor shall not be paid on account of loss of anticipated overhead, profits, or revenue, or other economic loss arising out of or resulting from such termination.

16.04 *Contractor May Stop Work or Terminate*

A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.

B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for

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expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

ARTICLE 17 – FINAL RESOLUTION OF DISPUTES

17.01 *Methods and Procedures*

A. *Disputes Subject to Final Resolution*: The following disputed matters are subject to final resolution under the provisions of this Article:

1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full; and
2. Disputes between Owner and Contractor concerning the Work or obligations under the Contract Documents, and arising after final payment has been made.

B. *Final Resolution of Disputes*: For any dispute subject to resolution under this Article, Owner or Contractor may:

1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions; or
2. agree with the other party to submit the dispute to another dispute resolution process; or
3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

ARTICLE 18 – MISCELLANEOUS

18.01 *Giving Notice*

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:

1. delivered in person, by a commercial courier service or otherwise, to the individual or to a member of the firm or to an officer of the corporation for which it is intended; or
2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the sender of the notice.

18.02 *Computation of Times*

A. When any period of time is referred to in the Contract by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

18.03 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

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18.04 *Limitation of Damages*

A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 *No Waiver*

A. A party's non-enforcement of any provision shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Contract.

18.06 *Survival of Obligations*

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract, as well as all continuing obligations indicated in the Contract, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

18.07 *Controlling Law*

A. This Contract is to be governed by the law of the state in which the Project is located.

18.08 *Headings*

A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

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DIVISION 00
SUPPLEMENTARY CONDITIONS

SUPPLEMENTARY CONDITIONS

TABLE OF CONTENTS Page

SC-1.01	Defined Terms	1
SC-2.02	Copies of Documents	1
SC-3.01	Intent	2
SC-5.03	Subsurface and Physical Conditions	2
SC-5.06	Hazardous Environmental Conditions	2
SC-6.01	Performance, Payment and Other Bonds	2
SC-6.03	Contractor's Insurance	2
SC-6.05	Property Insurance	4
SC-7.02	Labor; Working Hours	4
SC-7.09	Taxes	4
SC-10.03	Project Representative	4
SC-13.03	Unit Price Work	7
SC-15.03	Substantial Completion	8
SC-17.02	Attorney's Fees	8

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract, EJCDC® C-700 (2013 Edition). All provisions that are not so amended or supplemented remain in full force and effect.

The terms used in these Supplementary Conditions have the meanings stated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added thereto.

ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

SC-1.01 Defined Terms

Add to the list of definitions in Paragraph 1.01.A by inserting the following as numbered items in their proper alphabetical positions:

> Geotechnical Report — The factual report that collects and presents data regarding actual subsurface conditions at or adjacent to the Site, including Technical Data and other geotechnical data, prepared by or for Owner. The report's content may include logs of borings, trenches, and other site investigations, recorded measurements of subsurface water levels, the results of field and laboratory testing, and descriptions of the investigative and testing programs. If opinions, or interpretive or speculative non-factual comments or statements appear in this document, such opinions, comments, or statements are not operative parts of the report and do not have contractual standing. Subject to that exception, the report is a Contract Document.

ARTICLE 2 – PRELIMINARY MATTERS

SC-2.02 Copies of Documents

Amend the first sentence of Paragraph 2.02.A. to read as follows:

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Owner shall furnish to Contractor three copies of the Contract Documents (including one fully executed counterpart of the Agreement).

ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE

SC-3.01 Intent

Delete paragraph 3.01C in its entirety.

ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

SC-5.03 Subsurface and Physical Conditions

F. If there are no known Site-related reports or drawings, use the following version of SC-5.03:

Delete Paragraphs 5.03.A and 5.03.B in their entirety and insert the following:

A. No reports of explorations or tests of subsurface conditions at or adjacent to the Site, or drawings of physical conditions relating to existing surface or subsurface structures at the Site, are known to Owner.

SC-5.06 Hazardous Environmental Conditions

Use the following SC-5.06 if there are no known HEC reports or drawings:

Delete Paragraphs 5.06.A and 5.06.B in their entirety and insert the following:

A. No reports or drawings related to Hazardous Environmental Conditions at the Site are known to Owner.

B. Not Used.

ARTICLE 6 – BONDS AND INSURANCE

SC-6.01 Performance, Payment, and Other Bonds

Add the following sentence at the end of paragraph 6.01F:

Owner may furnish to any Subcontractor, Supplier or Contractor's Bonding Company, to the extent practicable, information about amounts paid to Contractor on account of Work performed for Contractor by a particular Subcontractor or Supplier.

SC-6.03 Contractor's Insurance

Add the following new paragraph immediately after Paragraph 6.03.J:

K. The limits of liability for the insurance required by Paragraph 6.03 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:

1. <u>Worker's Compensation Insurance and related coverages under Paragraphs 6.03 of the General Conditions.</u> Prime Contractors are required to provide Workmen's Compensation Insurance for the duration of this project meeting statutory requirements. Prime Contractors shall require subcontractors to provide Workmen's Compensation Insurance

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for all subcontractor employees working on this project, unless covered by Prime Contractor's policy.

Employer's Liability	$500,000

Projects in Wisconsin constructed by out-of-state contractors or subcontractors must be so endorsed on the policy and noted on the certificate.

2. Contractor's General Liability Insurance under Paragraphs 6.03B and 6.03C of the General Conditions. This policy shall be provided by and in the name of each Prime Contractor and shall include completed operations and product liability coverages, and independent Contractor's Contingent coverage. Minimum limits:

$1,000,000	Each Person
$1,000,000	Each Occurrence
$2,000,000	General Aggregate

Delete exclusions for X-C-U (Explosion, Collapse, and Underground) perils and any exclusion with respect to property under the care, custody and control of the Contractor.

3. Automobile Liability Insurance under Paragraph 6.03.D of the General Conditions. This policy shall be provided by and in the name of each Prime Contractor. Coverage shall include all owned, non-owned, and hired vehicles. Prime Contractors shall require similar coverages by subcontractors. Minimum Limits:

Bodily Injury	$1,000,000	Each Person
	$1,000,000	Each Occurrence
Property Damage	$1,000,000	Each Occurrence
Combined Single Limit	$1,000,000	

4. Umbrella Coverage. This policy shall be provided by and in the name of each Prime Contractor. Coverage shall include all the categories above and shall be for the following minimum limits: $5,000,000, each occurrence and general aggregate.

5. Contractor's Pollution Liability:

Each Occurrence	$N/A
General Aggregate	$N/A

☒ If box is checked, Contractor is not required to provide Contractor's Pollution Liability insurance under this Contract

6. Contractor's Professional Liability:

Each Claim	$N/A
Annual Aggregate	$N/A

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For purposes of these requirements additional insureds shall be:

the OWNER: Village of McFarland, Wisconsin

the ENGINEER: Town & Country Engineering, Inc.

SC-6.05 Property Insurance

Add the following new subparagraph after subparagraph 6.05.A.1:

a. In addition to Owner, Contractor, and all Subcontractors, include as insureds the following: Town & Country Engineering, Inc.

ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES

SC-7.02 Labor; Working Hours

Add the following new subparagraphs immediately after Paragraph 7.02.B:

1. Regular working hours will be 7:00 a.m. through 7:00 p.m.
2. Owner's legal Federal holidays are New Year's Day, Easter Sunday, Memorial Day, July 4th, Labor Day, Thanksgiving Day, Christmas Eve, and Christmas Day. Amend the first and second sentences of Paragraph 7.02.B to state "…all Work at the Site shall be performed during regular working hours, 7 a.m. through 7 p.m. Contractor will not perform Work on a Sunday or any legal holiday."

SC-7.09 Taxes

Add a new paragraph immediately after Paragraph 7.09.A:

B. Owner is exempt from payment of sales and compensating use taxes of the State of Wisconsin and of cities and counties thereof on materials to be incorporated into the Work as allowed by State law.

1. Owner will furnish the required certificates of tax exemption to Contractor for use in the purchase of supplies and materials to be incorporated into the Work.
2. Owner's exemption does not apply to construction tools, machinery, equipment, or other property purchased by or leased by Contractor, or to supplies or materials not incorporated into the Work.

ARTICLE 10 – ENGINEER'S STATUS DURING CONSTRUCTION

SC-10.03 Project Representative

Add the following new paragraphs immediately after Paragraph 10.03.A:

B. The Resident Project Representative (RPR) will be Engineer's representative at the Site, will act as directed by and under the supervision of Engineer, and will confer with Engineer regarding RPR's actions.

1. General: RPR's dealings in matters pertaining to the Work in general shall be with Engineer and Contractor. RPR's dealings with Subcontractors shall only be through or with the full knowledge and approval of Contractor. RPR shall generally communicate with Owner only with the knowledge of and under the direction of Engineer.

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2. Schedules: Review the progress schedule, schedule of Shop Drawing and Sample submittals, and Schedule of Values prepared by Contractor and consult with Engineer concerning acceptability.

3. Conferences and Meetings: Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences, and other Project-related meetings, and prepare and circulate copies of minutes thereof.

4. Liaison:

    a. Serve as Engineer's liaison with Contractor. Working principally through Contractor's authorized representative or designee, assist in providing information regarding the provisions and intent of the Contract Documents.

    b. Assist Engineer in serving as Owner's liaison with Contractor when Contractor's operations affect Owner's on-Site operations.

    c. Assist in obtaining from Owner additional details or information, when required for proper execution of the Work.

5. Interpretation of Contract Documents: Report to Engineer when clarifications and interpretations of the Contract Documents are needed and transmit to Contractor clarifications and interpretations as issued by Engineer.

6. Shop Drawings and Samples:

    a. Record date of receipt of Samples and Contractor-approved Shop Drawings.

    b. Receive Samples which are furnished at the Site by Contractor, and notify Engineer of availability of Samples for examination.

    c. Advise Engineer and Contractor of the commencement of any portion of the Work requiring a Shop Drawing or Sample submittal for which RPR believes that the submittal has not been approved by Engineer.

7. Modifications: Consider and evaluate Contractor's suggestions for modifications in Drawings or Specifications and report such suggestions, together with RPR's recommendations, if any, to Engineer. Transmit to Contractor in writing decisions as issued by Engineer.

8. Review of Work and Rejection of Defective Work:

    a. Conduct on-Site observations of Contractor's work in progress to assist Engineer in determining if the Work is in general proceeding in accordance with the Contract Documents.

    b. Report to Engineer whenever RPR believes that any part of Contractor's work in progress is defective, will not produce a completed Project that conforms generally to the Contract Documents, or will imperil the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents, or has been damaged, or does not meet the requirements of any inspection, test or approval required to be made; and advise Engineer of that part of work in progress that RPR believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.

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9. Inspections, Tests, and System Start-ups:

   a. Verify that tests, equipment, and systems start-ups and operating and maintenance training are conducted in the presence of appropriate Owner's personnel, and that Contractor maintains adequate records thereof.

   b. Observe, record, and report to Engineer appropriate details relative to the test procedures and systems start-ups.

10. Records:

   a. Prepare a daily report or keep a diary or log book, recording Contractor's hours on the Site, Subcontractors present at the Site, weather conditions, data relative to questions of Change Orders, Field Orders, Work Change Directives, or changed conditions, Site visitors, deliveries of equipment or materials, daily activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures; and send copies to Engineer.

   b. Record names, addresses, fax numbers, e-mail addresses, web site locations, and telephone numbers of all Contractors, Subcontractors, and major Suppliers of materials and equipment.

   c. Maintain records for use in preparing Project documentation.

11. Reports:

   a. Furnish to Engineer periodic reports as required of progress of the Work and of Contractor's compliance with the Progress Schedule and schedule of Shop Drawing and Sample submittals.

   b. Draft and recommend to Engineer proposed Change Orders, Work Change Directives, and Field Orders. Obtain backup material from Contractor.

   c. Immediately notify Engineer of the occurrence of any Site accidents, emergencies, acts of God endangering the Work, force majeure or delay events, damage to property by fire or other causes, or the discovery of any Constituent of Concern or Hazardous Environmental Condition.

12. Payment Requests: Review applications for payment with Contractor for compliance with the established procedure for their submission and forward with recommendations to Engineer, noting particularly the relationship of the payment requested to the Schedule of Values, Work completed, and materials and equipment delivered at the Site but not incorporated in the Work.

13. Certificates, Operation and Maintenance Manuals: During the course of the Work, verify that materials and equipment certificates, operation and maintenance manuals and other data required by the Contract Documents to be assembled and furnished by Contractor are applicable to the items actually installed and in accordance with the Contract Documents, and have these documents delivered to Engineer for review and forwarding to Owner prior to payment for that part of the Work.

14. Completion:

   a. Participate in Engineer's visits to the Site to determine Substantial Completion, assist in the determination of Substantial Completion and the preparation of a punch list of items to be completed or corrected.

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b. Participate in Engineer's final visit to the Site to determine completion of the Work, in the company of Owner and Contractor, and prepare a final punch list of items to be completed and deficiencies to be remedied.

c. Observe whether all items on the final list have been completed or corrected and make recommendations to Engineer concerning acceptance and issuance of the notice of acceptability of the work.

C. The RPR shall not:

1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items).

2. Exceed limitations of Engineer's authority as set forth in the Contract Documents.

3. Undertake any of the responsibilities of Contractor, Subcontractors, or Suppliers.

4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of Contractor's work.

5. Advise on, issue directions regarding, or assume control over security or safety practices, precautions, and programs in connection with the activities or operations of Owner or Contractor.

6. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by Engineer.

7. Accept Shop Drawing or Sample submittals from anyone other than Contractor.

8. Authorize Owner to occupy the Project in whole or in part.

ARTICLE 13 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

SC-13.03 Unit Price Work

Delete Paragraph 13.03.E in its entirety and insert the following in its place:

E. The unit price of an item of Unit Price Work shall be subject to reevaluation and adjustment under the following conditions:

1. if the extended price of a particular item of Unit Price Work amounts to 5 percent or more of the Contract Price (based on estimated quantities at the time of Contract formation) and the variation in the quantity of that particular item of Unit Price Work actually furnished or performed by Contractor differs by more than 15 percent from the estimated quantity of such item indicated in the Agreement; and

2. if there is no corresponding adjustment with respect to any other item of Work; and

3. if Contractor believes that Contractor has incurred additional expense as a result thereof, Contractor may submit a Change Proposal, or if Owner believes that the quantity variation entitles Owner to an adjustment in the unit price, Owner may make a Claim, seeking an adjustment in the Contract Price.

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ARTICLE 15 – PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

SC-15.03 Substantial Completion

Add the following new subparagraph to Paragraph 15.03.B:

1. If some or all of the Work has been determined not to be at a point of Substantial Completion and will require re-inspection or re-testing by Engineer, the cost of such re-inspection or re-testing, including the cost of time, travel and living expenses, shall be paid by Contractor to Owner. If Contractor does not pay, or the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under Article 15.

ARTICLE 17 – FINAL RESOLUTION OF DISPUTES

SC-17.02 Attorneys' Fees

Add the following new paragraph immediately after Paragraph 17.02.

SC-17.02 Attorneys' Fees: For any matter subject to final resolution under this Article, the prevailing party shall be entitled to an award of its attorneys' fees incurred in the final resolution proceedings, in an equitable amount to be determined in the discretion of the court, arbitrator, arbitration panel, or other arbiter of the matter subject to final resolution, taking into account the parties' initial demand or defense positions in comparison with the final result.

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DIVISION 01
GENERAL REQUIREMENTS

SECTION 01 00 00 – SUMMARY OF WORK; SPECIAL CONDITIONS; MEASUREMENT & PAYMENT CRITERIA

PART 1 - GENERAL

1.1 SUMMARY

A. This section summarizes the work covered by the contracts, defines special conditions peculiar to this project which modify the technical specifications, and established criteria for measurement and payment of individual bid items. This section is not intended to be all-inclusive. Contractors should closely review the standard technical specification sections and the plan sheets.

B. Section Includes:

- Work description.
- Work by Owner or others.
- Contractor's use of site.
- Special provisions pertaining to this project.
- Items of emphasis.
- Utility and regulatory agency contacts.
- Incidental work.
- Exploratory excavations and unforeseen conditions.
- Down time.
- Plans – limitations.
- Owner occupancy.
- Permits.
- Specification conventions.
- Measurement and payment criteria for individual bid items.

1.2 WORK DESCRIPTION

A. Work of the Project includes the removal and replacement of sidewalk sections within the Village.

1.3 WORK BY OWNER OR OTHERS

A. If contracts interfere with each other due to work being performed at the same time or at the same Site, Owner will determine the sequence of work under all contracts according to "Work Sequence" and "Contractor's Use of Site" Articles in this Section.

B. Coordinate Work with utilities of Owner and other contractors.

1.4 CONTRACTOR'S USE OF SITE

A. Limit use of Site to allow:

- Disruptions of access to adjoining properties only after 24-hour prior notice to the property owner.
- Access into the driveways of adjoining properties at the end of each work day.

B. Construction Operations: Limited to areas indicated on Drawings.

C. Time Restrictions for Performing Work: Regular working hours will be -_7 a.m. through _7_p.m.

D. Utility Outages and Shutdown:

- Coordinate and schedule electrical and other utility outages with Owner.

1.5 SPECIAL PROVISIONS PERTAINING TO THIS PROJECT

A. For all sidewalk sections that are not within a driveway apron, the Contractor is required to reinstall any removed concrete within 7 days following the removal of the section.

B. For all sidewalk sections that are within a driveway apron, the Contractor is required to reinstall any removed concrete within 2 days following the removal of the section. Additionally, replacements within a driveway apron will require the use of high early strength concrete or steel plates for access.

C. The Contractor is required to provide notification to residents affected by a driveway sidewalk section removal prior to any work being performed.

D. The Contractor is required to complete all work planned for any given year within 12 weeks of start of work for that year. Schedule overruns beyond this timeframe will result in the assessment of liquidated damages.

E. The Contractor is required to complete all construction work planned for a given year prior to September 1st of that year. Schedule overruns beyond this timeframe will result in the assessment of liquidated damages.

F. The Contractor shall make all efforts to avoid the disturbance of surfaces adjacent to the sidewalk slabs being replaced. If surfaces are disturbed during work, the Contractor is responsible for their restoration. Any costs incurred for the restoration of non-sidewalk disturbed surfaces shall be considered incidental to the work of the project. No additional payment will be made for the restoration of such surfaces. Any restoration completed by the Contractor shall be subject to compliance with Village specifications, such as Section 32 90 00, Landscape Restoration.

1.6 ITEMS OF EMPHASIS

A. When the word "provide" or "provision" is used herein it shall mean to "furnish and install, complete in place, fully tested as required, with final acceptance by the Owner.

B. The Contractor shall provide barricades controlling traffic of all kinds, including pedestrian and bicycle traffic, in the construction areas. "Road Closed – Local Traffic Only" signed barricades shall be placed on the streets leading to the construction areas at the nearest intersections in all directions.

C. The police, fire and EMS departments, project area businesses and churches, and, during the school year, the school bus operator, shall be notified by the Contractor at least 24 hours in advance of any access restrictions or any changes in access or traffic patterns.

D. Construction shall be conducted so as to cause as little inconvenience as possible to owners of abutting property. Convenient access to and into driveways, houses and buildings shall be maintained and temporary approaches to such driveways and crossing or intersecting highways shall be provided and kept in good condition.

E. Local traffic, both vehicular and pedestrian, shall be provided access into private properties at all times, except during some urgent stages of construction when it is impractical to carry on the construction and maintain traffic simultaneously. In such cases, the affected property owner(s) shall be notified by the Contractor 24 hours in advance and shall be told the approximate duration of the limited access. Access shall be restored before the Contractor leaves the site, even overnight. Emergency traffic, such as fire, police, ambulance and disaster units shall be provided reasonable access at all times. The Contractor shall be liable for any damages that may result from his failure to provide such reasonable access.

F. The Contractor, not the City or the Engineer, shall be responsible for all aspects of safety in construction means and methods.

G. Payment will not be made for materials either on or off the construction site which are not incorporated into the work unless the materials are enclosed within a fenced and secured Owner property to prevent them being taken from the site by a third party without Owner approval. (Pipes or manholes placed on Owner street rights-of-way along the job do not meet this criterion.) The Contractor assumes full responsibility for damage to materials that may occur for any cause, including from Owner operations. Copies of the original supplier invoices and lien waivers are presented showing that the Contractor has paid for said materials and owns them free and clear. A complete priced and dated inventory of the stored materials (in addition to the original supplier invoices) is provided with the first application for payment showing the units being stored, and updated inventories are provided with each subsequent applications for payment clearly defining the stored materials incorporated into the work since the last application for payment, the stored materials remaining to be incorporated into the work, and new stored materials that have been added to the storage site. No payment will be made for materials stored at the Contractor's shop or otherwise stored on the Contractor's property.

1.7 UTILITY AND REGULATORY AGENCY CONTACTS

A. Under the provisions of Section 182.0175 of Wisconsin Statutes, all contractors, subcontractors and any firm or individual intending to do work shall contract all utility firms in the affected area of construction a minimum of three working days prior to beginning construction so that affected utilities will be located and marked.

Electric
Mr. Dan Treinen
Alliant Utilities
1521 Progress Lane
Stoughton, WI 53589
DanTreinen@alliantenergy.com
Office: (608) 877-1650
Cell: (608) 459-5259

Gas	Madison Gas & Electric workplans@mge.com Mr. Dan Treinen Alliant Utilities 1521 Progress Lane Stoughton, WI 53589 DanTreinen@alliantenergy.com Office: (608) 877-1650 Cell: (608) 459-5259
Cable	Mr. Kirk Upperman Charter Communications 2701 Daniels Street Madison, WI 53718-6792 (608) 209-3206 Kirk.upperman@charter.com Mr. Matt Schulte TDS Telecommunications, LLC 16924 West Victor Road New Berlin, WI 53151 (262) 754-3063 Matt.schulte@tdstelecom.com Or Mr. Matthew Weise Matthew.Weise@tdstelecom.com Chris Tormala Manager, Outside Plant Everstream Fiber Optic O: 414-409-9310 M: 262-825-2363 Ctormala@everstream.net
Phone	Mr. Russ Ryan Frontier Communications 118 Division Street Plymouth, WI 53073 (920) 583-3275 (Cell) (920) 737-9662 russell.w.ryan@ftr.com

1.8 INCIDENTAL WORK

A. The bid items represent complete compensation for all work. Any work shown on the plans or described in the Technical Specification sections for which no specific bid item is provided shall be considered incidental to those bid items which are provided.

B. "Incidental", as used in these documents, means included as part of other work and has no implication regarding size or magnitude.

1.9 EXPLORATORY EXCAVATIONS AND UNFORESEEN CONDITIONS

A. Contractor shall expect that some time will be required to excavate, find and expose existing underground features. Exploratory excavations of up to four hours following marking of the utilities in the field by the appropriate party for finding and exposing any individual underground feature shall be considered incidental to the contract prices, unless specific bid items are provided. The Contractor is encouraged to make these exploratory excavations early in the project. Should the Contractor fail to do so and relocations of underground utilities are required such that the contractor's normal sequence of operation is disrupted or such that additional remobilizations are required, the Contractor shall merit no extra payment for these interruptions in excess of four hours or for remobilizations.

B. During the course of the work it is anticipated that there will be periods of time when unforeseen conditions will be encountered. These circumstances will require investigative time and consultation by the Engineer, the Contractor and the Owner to make appropriate decisions as to the course of action to be undertaken. This time will be considered as ordinary down time and the Contractor will not be eligible for compensation for this down time for crew time or equipment time unless there is no other work to which the crew and equipment can be diverted and unless the downtime exceeds four hours.

1.10 DOWN TIME

A. Should change orders be necessary which cannot be made on a unit price basis and which require the Contractor to alter his normal plan of operation, the contractor shall be reimbursed only for changes in actual work performed, not for ordinary crew or equipment "down time".

1.11 PLANS – LIMITATIONS

A. The plans are schematic depictions only. Partial lengths of pipe and fittings not shown may be necessary to complete the installation. Such partial lengths of pipe and extra fittings shall be considered incidental to the contract prices.

B. Underground utilities known at the time of plan preparation are shown. No warranty is given that the locations shown are exactly correct. The Contractor shall verify prior to making his bid what underground utilities will be encountered and shall make suitable provision for working around those utilities and for coordination with the utility companies, as necessary. The exact utility locations should be marked in the field prior to construction. The Contractor shall call the utility companies at least three working days prior to the time when construction in that area will commence to provide time for such markings.

C. If existing sanitary sewer laterals are shown on the plans they are shown only to provide reference that their existence is expected. The exact locations of these laterals or even their existence may not be known, and the absence of a sewer lateral on the plan does not relieve the Contractor of responsibility for verifying the existence of a lateral or of locating a lateral, including taking all reasonable measures such as dye testing and televising existing sanitary sewer mains to determine the location of lateral connections to the mains.

1.12 OWNER OCCUPANCY

A. Schedule and substantially complete designated portions of the Work for occupancy before Substantial Completion of the entire Work.
   - Owner's use and occupancy of designated areas before Substantial Completion of the entire Project do not relieve Contractor of responsibility to maintain specified insurance coverages on a 100% basis until date of final payment.

B. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.

C. Schedule the Work to accommodate Owner occupancy.

1.13 PERMITS

A. Owner will furnish all necessary permits for construction of Work, except in the case a discharge permit is needed during the Contractor's operations.

B. Contractor will be bound to all conditions of the approved permits.

1.14 SPECIFICATION CONVENTIONS

A. These Specifications are written in imperative mood and streamlined form. This imperative language is directed to Contractor unless specifically noted otherwise. The words "shall be" are included by inference where a colon (:) is used within sentences or phrases.

1.15 MEASUREMENT AND PAYMENT CRITERIA

A. This section provides descriptions of the payment items used in the bid proposal, establishes criteria for measurements associated with these payment items, and provides information regarding what work is considered incidental to those payment items.

B. Where there is a conflict between this section and subsequent technical Specification Sections, the provisions of this section shall govern.

C. Any related work for which a pay item has not been provided in the proposal shall be considered incidental to the prices for the bid items provided.

D. The Contractor shall, at his own cost, incidental to the bid prices, obtain any discharge permits required by the DNR. The Contractor should note that even a discharge of runoff from rainfall that might have accumulated in a trench requires a DNR discharge permit.

E. Rock Excavation and groundwater dewatering, of whatever type necessary, including well-pointing or deep well construction, and granular bedding around and to 12 inches over the pipe shall be INCIDENTAL to the contract unit prices for pipe construction. Each bidder should conduct whatever pre-bid investigations are necessary to satisfy him regarding the amount of such work items which will be necessary. The Contractor shall, at his own cost, obtain the DNR dewatering permit.

F. The Contractor shall, at his own cost, perform (or retain an engineer to perform) whatever calculations are necessary to design dewatering and shoring systems that may be required to perform the work and to avoid any damages to properties outside the public right-of-way, and shall assume all responsibility for the sufficiency of these calculations and these systems.

G. The presumption of this specification is that the excavated material will be suitable for trench backfill. If unsuitable backfill materials are encountered, such that materials must be hauled in from off the project site, the supplemental bid prices will be used, or if no appropriate supplemental bid price exists, an extra price will be negotiated.

H. All trench compaction shall be Class I. Compaction testing may be conducted at various depths in the trench to verify the required density has been achieved. If compaction tests fail, the Contractor shall pay for a second set of tests to demonstrate that the inadequate compaction condition has been remedied.

I. Completed erosion control inspection forms shall be completed by the Contractor and submitted with applications for payment. Forms covering the interval of time between applications for payment shall be submitted with each such application. No payment on any contract item will be made until the completed inspection forms are submitted.

J. Description of Bid Items:

- Remove and Replace 4" Thick Concrete Sidewalk and Aprons- Zone 1 Only(Item 1) covers the removal of existing and construction of new concrete sidewalk and aprons. No special payment shall be made for sidewalk ramps. Rather the ramps shall be measured as concrete sidewalk. Any related topsoil restoration shall be incidental to this unit price. The provision and placement of six inches of crushed aggregate base under the new sidewalk shall be incidental to this unit price. The unit of measurement is per square foot.

  Pricing under this item shall represent the removal and replacement of all 4" sidewalk in zone 1 in 2022. No other zones shall be included in this scope.

- Remove and Replace 6" Thick Concrete Sidewalk and Aprons- Zone 1 Only(Item 2) covers the removal of existing and construction of new concrete sidewalk and aprons. No special payment shall be made for sidewalk ramps. Rather the ramps shall be measured as concrete sidewalk. Any related topsoil restoration shall be incidental to this unit price. The provision and placement of six inches of crushed aggregate base under the new sidewalk shall be incidental to this uni price. The unit of measurement is per square foot.

  Pricing under this item shall represent the removal and replacement of all 6" sidewalk in zone 1 in 2022. No other zones shall be included in this scope.

- Remove and Replace 4" Thick Concrete Sidewalk and Aprons- Zone 2 Only(Item S1) covers the removal of existing and construction of new concrete sidewalk and aprons. No special payment shall be made for sidewalk ramps. Rather the ramps shall be measured as concrete sidewalk. Any related topsoil restoration shall be incidental to this unit price. The provision and placement of six inches of crushed aggregate base under the new sidewalk shall be incidental to this unit price. The unit of measurement is per square foot.

  If used, all work under this item will be performed in 2023. Overall duration of work in 2023 shall be limited to 12 weeks and all work shall be completed by September 1, 2023. The Owner shall direct the Contractor that work under this item is to be executed by October 31, 2022.

- Remove and Replace 6" Thick Concrete Sidewalk and Aprons- Zone 2 Only(Item S2) covers the removal of existing and construction of new concrete sidewalk and aprons. No special payment shall be made for sidewalk ramps. Rather the ramps shall be measured as concrete sidewalk. Any related topsoil restoration shall be incidental to this unit price. The provision and placement of six inches of crushed aggregate base under the new sidewalk shall be incidental to this unit price. The unit of measurement is per square foot.

  If used, all work under this item will be performed in 2023. Overall duration of work in 2023 shall be limited to 12 weeks and all work shall be completed by September 1, 2023. The Owner shall direct the Contractor that work under this item is to be executed by October 31, 2022.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION - Not Used

END OF SECTION 01 00 00

SECTION 01 20 00 - PRICE AND PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Allowances.

B. Product allowances.

C. Testing and inspection allowances.

D. Application for Payment.

E. Change procedures.

F. Defect assessment.

G. Unit prices.

H. Alternates.

1.2 ALLOWANCES

A. The dollar value of all allowances are shown in the Bid Proposal Form.

1.3 PRODUCT ALLOWANCES

A. Costs Included in Product Allowances: Cost of product to Contractor or Subcontractor, less applicable trade discounts; delivery to Site and applicable taxes unless stated otherwise elsewhere in the specifications.

B. Costs Not Included in Product Allowances but Included in Contract Sum/Price: Product handling at Site including unloading, uncrating, and storage; protection of products from elements and from damage; and labor for installation and finishing unless stated otherwise elsewhere in the specifications.

C. Engineer Responsibilities:

1. Consult with Contractor for consideration and selection of products, suppliers and installers.
2. Select products in consultation with Owner and transmit decision to Contractor.
3. Prepare Change Order.

D. Contractor Responsibilities:

1. Assist Engineer in selection of products, suppliers and installers.

2. Obtain proposals from suppliers and installers, and offer recommendations.
3. Upon notification of selection by Owner, execute purchase agreement with designated supplier and installer.
4. Arrange for and process Shop Drawings, Product Data, and Samples. Arrange for delivery.
5. Promptly inspect products upon delivery for completeness, damage, and defects. Submit claims for transportation damage.

E. Differences in costs will be adjusted by Change Order.

1.4 TESTING AND INSPECTION ALLOWANCES

A. Costs Included in Testing and Inspecting Allowances:

1. Execution of tests and inspecting.
2. Reporting results.

B. Costs Not Included in Testing and Inspecting Allowance but Included in Contract Sum/Price:

1. Costs of incidental labor and facilities required to assist testing or inspecting agency.
2. Costs of testing services used by Contractor separate from Contract Document requirements.
3. Costs of retesting upon failure of previous tests as determined by Engineer.
4. Testing costs that are required by specification to be part of the project bid, such as, but not limited to, concrete testing, pipe testing, equipment performance testing and any other miscellaneous testing required to meet performance.

C. Payment Procedures:

1. Submit one copy of inspecting or testing firm's invoice with next Application for Payment.
2. Pay invoice upon approval by Engineer.

D. Differences in cost will be adjusted by Change Order.

1.5 APPLICATION FOR PAYMENT

A. Submit four copies of each Application for Payment on either AIA G702 - Application and Certificate for Payment and AIA G703 - Continuation Sheet for G702 Contractor's electronic media driven form or EJCDC C-620 - Contractor's Application for Payment.

B. Content and Format: Use Schedule of Values or the unit price listing in the Bid Proposal Form, as applicable, for listing items in Application for Payment.

C. Substantiating Data: When Engineer requires substantiating information, submit data justifying dollar amounts in question. Include the following with Application for Payment:
   1. Partial release of liens from major Subcontractors and vendors.
   2. Affidavits attesting to off-Site stored products, if allowed.
   3. Construction Progress Schedule, revised and current.

1.6 CHANGE PROCEDURES

A. Submittals: Submit name of individual who is authorized to receive change documents and is responsible for informing others in Contractor's employ or Subcontractors of changes to the Work.

B. Carefully study and compare Contract Documents before proceeding with fabrication and installation of Work. Promptly advise Engineer of any error, inconsistency, omission, or apparent discrepancy.

C. Requests for Interpretation (RFI) and Clarifications: Allot time in construction scheduling for liaison with Engineer; establish procedures for handling queries and clarifications.

D. Contractor may propose changes by submitting a request for change to Engineer, describing proposed change and its full effect on the Work. Include a statement describing reason for the change and the effect on Contract Sum/Price and Contract Time with full documentation.

E. Unit Price Change Order: For Contract unit prices and quantities, the Change Order will be executed on a fixed unit price basis. For unit costs or quantities of units of that which are not predetermined, execute Work under Work Directive Change. Changes in Contract Sum/Price or Contract Time will be computed as specified for Time and Material Change Order.

F. Work Directive Change: Engineer may issue directive, on EJCDC C-940 - Work Change Directive signed by Owner, instructing Contractor to proceed with change in the Work, for subsequent inclusion in a Change Order. Document will describe changes in the Work and designate method of determining any change in Contract Sum/Price or Contract Time. Promptly execute change.

G. Time and Material Change Order: Submit itemized account and supporting data after completion of change, within time limits indicated in Conditions of the Contract. Engineer will determine change allowable in Contract Sum/Price and Contract Time as provided in Contract Documents.

H. Maintain detailed records of Work done on time and material basis. Provide full information required for evaluation of proposed changes and to substantiate costs for changes in the Work.

I. Document each quotation for change in Project Cost or Time with sufficient data to allow evaluation of quotation.

J. Change Order Forms: EJCDC C-941 - Change Order or other as agreed to.

K. Execution of Change Orders: Engineer will issue Change Orders for signatures of parties as provided in Conditions of the Contract.

L. Correlation of Contractor Submittals:

1. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as separate line item and adjust Contract Sum/Price.
2. Promptly revise Progress Schedules to reflect change in Contract Time, revise subschedules to adjust times for other items of Work affected by the change, and resubmit.
3. Promptly enter changes in Record Documents.

1.7 DEFECT ASSESSMENT

A. Replace the Work, or portions of the Work, not conforming to specified requirements.

B. If, in the opinion of Engineer, it is not practical to remove and replace the Work, Engineer and Owner will direct appropriate remedy or adjust payment.

C. The defective Work may remain, but unit sum/price will be adjusted to new sum/price at discretion of Engineer and Owner.

D. Authority of Engineer and Owner to assess defects and identify payment adjustments is final.

E. Nonpayment for Rejected Products: Payment will not be made for rejected products for any of the following reasons:

1. Products wasted or disposed of in a manner that is not acceptable.
2. Products determined as unacceptable before or after placement.
3. Products not completely unloaded from transporting vehicle.
4. Products placed beyond lines and levels of the required Work.
5. Products remaining on hand after completion of the Work.
6. Loading, hauling, and disposing of rejected products.

1.8 UNIT PRICES

A. Authority: Measurement methods are delineated in Specification Section 01 00 00.

B. Measurement methods delineated in individual Specification Sections, if any, complement criteria of Section 01 00 00. In event of conflict, requirements of Specification Section 01 00 00 shall govern.

C. Take measurements and compute quantities. Engineer will verify measurements and quantities.

D. Unit Quantities: Quantities and measurements indicated on the Bid Form are for Contract purposes only. Actual quantities provided shall determine payment.

1. When actual Work requires more or fewer quantities than those quantities indicated, provide required quantities at contracted unit sum/prices.
2. When actual Work requires 15 percent or greater change in quantity than those quantities indicated, Owner or Contractor may claim a Contract Price adjustment.

E. Payment Includes: Full compensation for required labor, products, tools, equipment, plant and facilities, transportation, services and incidentals; erection, application, or installation of item of the Work; overhead and profit.

F. Final payment for Work governed by unit prices will be made on basis of actual measurements and quantities accepted by Engineer multiplied by unit sum/price for Work incorporated in or made necessary by the Work.

G. Measurement of Quantities:

1. Weigh Scales: Inspected, tested, and certified by applicable the State of Wisconsin weights and measures department within the past year.
2. Platform Scales: Of sufficient size and capacity to accommodate conveying vehicle.
3. Measurement by Volume: Measured by cubic dimension using mean length, width, and height or thickness.
4. Measurement by Area: Measured by square dimension using mean length and width or radius.
5. Linear Measurement: Measured by linear dimension, at ground surface.

1.9 ALTERNATES

A. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at Owner's option. Accepted Alternates will be identified in Owner-Contractor Agreement. The Owner-Contractor Agreement may identify certain Alternates to remain an Owner option for a stipulated period of time.

B. Coordinate related Work and modify surrounding Work. Description for each Alternate is recognized to be abbreviated but requires that each change shall be complete for scope of Work affected.

1. Coordinate related requirements among Specification Sections as required.
2. Include as part of each Alternate: Miscellaneous devices, appurtenances, and similar items incidental to or necessary for complete installation.
3. Coordinate Alternate with adjacent Work and modify or adjust as necessary to ensure integration.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION - Not Used

END OF SECTION 01 20 00

SECTION 01 25 00 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Quality assurance.

B. Product options.

C. Product substitution procedures.

1.2 QUALITY ASSURANCE

A. Contracts are based on products and standards established in Contract Documents without consideration of proposed substitutions.

B. Products specified define standard of quality, type, function, dimension, appearance, and performance required.

C. Substitution Proposals: Permitted for specified products except where specified otherwise. Do not substitute products unless substitution has been accepted and approved in writing by Owner.

1.3 PRODUCT OPTIONS

A. See Section 01 60 00 - Product Requirements.

1.4 PRODUCT SUBSTITUTION PROCEDURES

A. Engineer will consider requests for substitutions which were not part of the bid proposal only within thirty days after date of Owner-Contractor Agreement.

B. Document each request with complete data, substantiating compliance of proposed substitution with Contract Documents, including:

1. Manufacturer's name and address, product, trade name, model, or catalog number, performance and test data, and reference standards.
2. Itemized point-by-point comparison of proposed substitution with specified product, listing variations in quality, performance, and other pertinent characteristics.
3. Reference to Article and Paragraph numbers in Specification Section.

4. Cost data comparing proposed substitution with specified product and amount of net change to Contract Sum.
5. Changes required in other Work.
6. Availability of maintenance service and source of replacement parts as applicable.
7. Certified test data to show compliance with performance characteristics specified.
8. Samples when applicable or requested.
9. Other information as necessary to assist Engineer's evaluation.

C. A request constitutes a representation that Contractor:

1. Has investigated proposed product and determined that it meets or exceeds quality level of specified product.
2. Will provide same warranty for substitution as for specified product.
3. Will coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.
4. Waives claims for additional costs or time extension that may subsequently become apparent.
5. Will coordinate installation of the accepted substitute, making such changes as may be required for the Work to be complete in all respects.
6. Will reimburse Owner and Engineer for review or redesign services associated with reapproval by authorities having jurisdiction.

D. Substitutions will not be considered when they are indicated or implied on Shop Drawing or Product Data submittals without separate written request or when acceptance will require revision to Contract Documents.

E. Substitution Submittal Procedure:
1. Submit three copies of each Request for Substitution for consideration. Limit each request to one proposed substitution.
2. Submit Shop Drawings, Product Data, and certified test results attesting to proposed product equivalence. Burden of proof is on proposer.
3. Engineer will notify Contractor in writing of decision to accept or reject request.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION - Not Used

END OF SECTION 01 25 00

SECTION 01 30 00 - ADMINISTRATIVE REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Applicable Codes and Regulations.

B. Permits and Fees.

C. Certifications.

D. Patented Products.

E. Compliance with Statutory Requirements for Substance Abuse Testing Program.

F. Notifications.

G. Coordination and Project Conditions.

H. Preconstruction Meeting.

I. Progress Meetings.

1.2 APPLICABLE CODES AND REGULATIONS

A. The Contractor shall comply with all local and municipal ordinances and all applicable codes of the Wisconsin Department of Safety and Professional Services, the Wisconsin Department of Health Services, National Electrical Codes, and State of Wisconsin electrical codes. The Contractor shall also comply with the regulations of plumbing, heating and building inspection authorities of jurisdiction and with requirements of local utilities. All work, including equipment, shall be executed, inspected and/or tested in strict accordance with all local, county and/or state laws, rules, ordinances or regulations and the America Insurance Association (formerly National Board of Fire Underwriters) or the Owner's Insurance Underwriters.

B. This article is not to be construed to permit the use of materials, workmanship, or arrangement inferior to that required by those Specifications, even though approved by above listed authorities.

C. Conform to plan approval requirements specified by the Wisconsin Department of Natural Resources, Division of Environmental Standards.

1.3 PERMITS AND FEES

A. Each Contractor shall provide all necessary licenses and permits, and shall pay all fees, taxes, and royalties as necessary to complete construction. Each Contractor shall provide copies of all licenses and permits to the Engineer.

B. For projects involving dewatering, the Contractor shall obtain a permit from the Department of Natural Resources Private Water Supply Section if the installed or operated capacity of the well(s), either singly or in aggregate, exceeds 70 gallons per minute. The address of this section is:

Wisconsin Department of Natural Resources
Private Water Supply Section
P.O. Box 7921
Madison, Wisconsin 53707

C. If dewatering is to occur near an operating or abandoned landfill, leaking underground storage tank or a hazardous substance spill the contractor shall contact the Wisconsin Department of Natural Resources district solid waste coordinator for assistance prior to installing the dewatering system.

D. A Wisconsin Pollutant Discharge Elimination System Permit will also be required for the discharge from the dewatering system and for the discharge from pipeline disinfection processes. **A Wisconsin Pollutant Discharge Elimination System Permit will also be required for any "sumping" and pumped discharge of groundwater, of stormwater runoff that enters or accumulates in the work area, or of any other pumped discharge, whether to a surface water, a ditch, a drainage channel, or a storm sewer.** The Contractor shall obtain the necessary permit from the appropriate DNR office. The requirements of such discharge permits are hereby incorporated as requirements of this Specification, and the Contractor shall assume responsibility for any fines levied against the Owner due to the failure of the Contractor to obtain the required permits.

1.4 CERTIFICATIONS

A. The Contractor shall furnish appropriate certificates of inspection and approval from authorities having jurisdiction. Certificates for approval or acceptance of the work shall be obtained in duplicate form, duly signed by the proper authorities and forwarded to the Engineer upon completion of work.

1.5 PATENTED PRODUCTS

A. Each Contractor shall secure the right to use any patented article, method, equipment or apparatus if use of the patented item requires permission, thus relieving the Owner of any liability.

1.6 COMPLIANCE WITH STATUTORY REQUIREMENTS FOR SUBSTANCE ABUSE TESTING PROGRAM

A. Each Contractor shall comply with the provisions of Section 103.503 of Wisconsin Statutes regarding substance abuse prevention on public works projects. By the act of signing the Bid Proposal form the Bidder certifies that such a program is in place and meets the statutory requirements.

1.7 NOTIFICATIONS

A. Notification to the Engineer: The Contractor shall notify the Engineer not less than three (3) working days prior to the date of commencing the work or the date of adding another crew. He shall also notify the Engineer not less than three (3) working days prior to the date that he wishes to have the project grade stakes placed for any particular segment of the project.

B. Notification of and Coordination with Utilities
   1. The Contractor shall notify in writing all affected utility companies of his construction operations not less than three (3) working days prior to the date upon which he intends to commence work. The Contractor shall make arrangements with the utility companies for those companies to determine the exact locations of gas mains, water mains, buried electrical conduits, buried television cables, other buried conduits, valves, and buried appurtenances or structures owned or managed by such utilities. In addition, the Contractor shall make arrangements with the utility companies for any relocation of interfering utilities such as, but not limited to, poles, wires, valves and valve boxes, junction boxes and pads for such boxes, and for buried wires, conduits, cables and pipelines. Where it is available, the Contractor shall utilize the "One-Call" notification system. "Utilities" shall include, but not be limited to, electric companies, natural gas companies, telephone and fiber optic companies, cable television companies, water utilities and companies, and sewerage utilities.
   2. On projects in which there are multiple contracts, each Contractor shall be responsible for all such notifications necessary for the execution of his own work.
   3. No Contractor shall depend upon the engineer or representatives of the municipality to arrange for marking or adjustments of such utilities. Nor shall the Contractor(s) depend upon verbal representations of the Engineer or representatives of the municipality that such markings or adjustments have been arranged or made.

C. Notification to Fire, E.M.S., Police and Sheriff's Department, and Other Government Services
   1. The Contractor shall give written notice to the Fire and Police Departments of the municipality in which the work is being performed, and/or the Sheriff's Department seven (7) days in advance and again not less than twenty-four (24) hours before closing off, or in any manner affecting through vehicular traffic on any street. Such notification shall include the expected length of the disruption. Emergency Medical Services, school bus companies and garbage collection companies shall be notified of all route and access limitations as they occur, including the expected length of the disruption.

D. Notifications for County Trunk, State Arterial, and Federal Highways
   1. Whenever the work will obstruct, or in any way disrupt, vehicular traffic on County trunk, State arterial, or Federal highways, the Contractor shall obtain the necessary permits and shall give written notice ten (10) days in advance and again not less than

three (3) days prior to the date of disruption to the County Highway Department in case of County trunk highways, and to the State of Wisconsin Department of Transportation, Division of Highways, in the case of State arterial or Federal highways. Should such disruptions on such highways be within the limits of an incorporated municipality the Contractor shall also give such notice to the Traffic Division of that municipality, if applicable.

E. Notification to Railroads

1. The Contractor shall notify by registered mail the District or Division Engineer or persons in charge of the operations of trains for any railroad at least ten (10) days prior to doing any work on the right-of-way or track zone of that railroad.

F. More Stringent Notifications

1. If permits required by law and issued by utilities, highway or traffic departments, railroads or others incorporate more stringent notifications requirements the Contractor shall abide by those more stringent requirements.

G. Copies of Written Notifications

1. The Contractor shall provide a copy of each written notification to the Engineer.

H. Emergency Notifications

1. The person who engages in emergency excavations shall take all reasonable precautions to avoid to the extent possible interference with existing transmission or other utility facilities in and near the construction area and shall notify as promptly as possible the owners of the transmission or other utility facilities which may be affected by the emergency excavation. Every person or Contractor who engages in emergency excavation or other emergency activities shall inspect, prior to backfilling, all transmission or other utility facilities exposed during the excavation to ascertain if these facilities have been or may have been struck, damaged, dislocated, or disrupted and shall notify promptly before backfilling the owner of those facilities which have been or may have been struck, damaged, dislocated or disrupted.
2. Should a Contractor damage a utility facility during the normal construction operations, such that a situation occurs which endangers the public health and welfare, or that of his own workmen, the Contractor shall suspend construction operations and shall immediately notify the utility of the emergency condition.

I. Non-Emergency Notification of Damage to Utility Facilities

1. If any transmission line or other utility facility has been or may have been struck, damaged, dislocated or disrupted in connection with any excavation, emergency or non-emergency, the Contractor responsible for the excavation operations shall immediately notify the Owner of the facility.

1.8 COORDINATION AND PROJECT CONDITIONS

A. Contractors and subcontractors shall coordinate activities to facilitate general progress of work, inspect Contract Documents for interrelated work and afford to others reasonable opportunity to install their work. No Contractor or trade may exclude from the site any other contractor or trade or interfere with others executing work. Each Contractor shall acknowledge a duty to plan, schedule, coordinate and perform prior work needed by other Contractors.

B. Each Contractor shall perform each item or work in proper sequence and arrangement to other activities and joint to work of others in accordance with the intent of the Contract Documents and construction schedule. Each Contractor shall give due notice and proper information for special requirements necessary to place or set work which may interrelate with work of others and shall pay for alterations and repairs necessitated by neglect or failure to give proper notice. Extra costs caused by defective or ill-timed work shall be borne by the responsible party.

C. Coordination Meetings: In addition to other meetings specified in this Section, hold coordination meetings with personnel and Subcontractors to ensure coordination of Work.

D. Each Contractor shall cooperate to fit piping, duct work, sleeves, conduit, curbs, etc., into the work as job conditions may demand. Final decisions as to right-of-way and run of interfering pipe, ducts, etc., will be made by the Engineer at project meetings with responsible representatives of each Contractor.

E. As early as practicable, each Contractor shall determine size or openings he requires and guarantee them to other Contractors and trades. Each Contractor shall dispose of this material so as not to interfere with the work or storage of materials of other Contractors.

F. Supervision
   1. The General Contractor shall administer the work. As a part of this contract he shall take charge, coordinate and expedite the work of other Contractors, trades, and all phases of sitework, architectural, structural, mechanical, plumbing, heating, ventilating, and electrical work.
   2. Any voluntary effort by the Engineer to expedite notices to other Contractors shall not relieve the General Contractor of primary responsibility to coordinate and supervise the work.

G. Layout
   1. Immediately upon entering the site to begin work, the General Contractor shall locate general reference points and utilities and take necessary action to prevent their destruction. He shall lay out his own work and be responsible for all lines, elevations and measurements of the building and other work executed by him under the contract. He shall exercise precaution to verify figures on drawings before laying out work and will be held responsible for any error resulting from his failure to exercise such precautions.
   2. As work progresses, Contractor shall fully and completely lay out work and reference points required by the contract as a guide for all trades.
   3. Each Contractor shall verify grades, lines, levels, locations, and dimensions as shown and shall report any errors or inconsistencies before commencing work. Starting of work shall imply his acceptance of the data.

1.9 PRECONSTRUCTION MEETING

A. Engineer will schedule and preside over meeting after Notice of Award.

B. Attendance Required: Engineer, Owner, Resident Project Representative, if any, major Subcontractors and Contractor.

C. Minimum Agenda:
   1. Execution of Owner-Contractor Agreement.
   2. Submission of executed bonds and insurance certificates.
   3. Distribution of Contract Documents.
   4. Submission of list of subcontractors, list of products, schedule of values, and Progress Schedule.
   5. Designation of personnel representing parties in Contract and Engineer.
   6. Communication procedures.
   7. Procedures and processing of requests for interpretations, field decisions, field orders, submittals, substitutions, Applications for Payments, proposal request, Change Orders, and Contract closeout procedures.
   8. Scheduling.
   9. Critical Work sequencing.

D. Engineer will record minutes and distribute copies to participants within seven days after meeting.

1.10 PROGRESS MEETINGS

A. Schedule and administer meetings throughout progress of the Work at agreed upon intervals.

B. Make arrangements for meetings, prepare agenda with copies for participants, and preside over meetings.

C. Attendance Required: Job superintendent, major Subcontractors, Contractors and suppliers, Engineer, and Owner, as appropriate to agenda topics for each meeting.

D. Minimum Agenda:
   1. Review minutes of previous meetings.
   2. Review of Work progress.
   3. Field observations, problems, and decisions.
   4. Identification of problems impeding planned progress.
   5. Review of submittal schedule and status of submittals.
   6. Review of off-site fabrication and delivery schedules.
   7. Maintenance of Progress Schedule.
   8. Corrective measures to regain projected schedules.
   9. Planned progress during succeeding work period.
   10. Coordination of projected progress.
   11. Maintenance of quality and work standards.
   12. Effect of proposed changes on Progress Schedule and coordination.
   13. Other business relating to Work.

E. Contractor shall record minutes and distribute copies to participants within two days after meeting.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION – Not Used

END OF SECTION 01 30 00

SECTION 01 33 00 - SUBMITTALS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section sets forth the requirements and procedures for submittal, review and approval of shop drawings, operation and maintenance data, equipment maintenance data cards, warranties, and final operation and maintenance manuals.

B. Submittals must be made for all equipment and materials to be incorporated into the Work as specified herein.

C. Section includes:
1. Definitions.
2. Submittal procedures.
3. Shop drawings
4. Operation and maintenance data
5. Equipment and maintenance data cards
6. Warranties
7. Final operation and maintenance manuals

1.2 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require Engineer's responsive action.

B. Informational Submittals: Written and graphic information and physical Samples that do not require Engineer's responsive action. Submittals may be rejected for not complying with requirements.

1.3 SUBMITTAL PROCEDURES

A. A preliminary submittal schedule must be made.

B. Electronic copies of documents described in this Section shall be submitted to the designated web-based drop box established by the Engineer, or through a submittals exchange service set up by the Contractor that has received Engineer approval. In addition, hard copies and electronic copies saved to a flash drive for each document shall be submitted for the Engineer's use and distribution as specified in the following paragraphs. Hard copy documents discussed in this Section shall be submitted to:

Town and Country Engineering, Inc.
Attn: Individual to be designated at the pre-construction meeting
6264 Nesbitt Road
Madison, WI 53719

C. The typical procedure for complying with this Section shall include an Initial Submittal, resubmittal if required, and provision of Final Operation and Maintenance Manuals, if applicable.

D. Initial Submittals shall include shop drawings for all material and equipment to be used on the project, and also, for equipment only operation and maintenance data cards, and warranties.

E. Every effort will be made by the Engineer to return reviewed submittals, or resubmittals, within a period of four (4) weeks. The four (4) week review period shall begin when the submittals are officially recorded into the Engineer's log sheet. Submittals will not be logged in until a complete submittal is made.

F. Reviewed submittals shall be classified in one of four categories, which are:
   1. Reviewed, No Comments
   2. Comments as Noted
   3. Revise and Resubmit
   4. Rejected

G. The first two (2) categories will not require resubmittal. If the Manufacturer or Supplier chooses to make a resubmittal to verify that comments made by the Engineer are incorporated correctly, the resubmitted documents shall be reviewed for those items commented on in the original submittal only. These copies will then be marked as follows:
   1. Amendment to Original Submittal, or
   2. Revise and Resubmit

H. If submittals, or resubmittals, have been stamped "Revise and Resubmit" or "Rejected", changes or modifications shall be incorporated into new documents, and revised copies shall be submitted with the same procedure as required for the original submittal.

1.4 SHOP DRAWINGS

A. Shop Drawings are required for all manufactured materials and equipment to be incorporated into the work.

B. An electronic copy of the Shop Drawings shall be forwarded as part of the Initial Submittal as noted above. Shop drawings for equipment shall be submitted and approved before equipment fabrication and delivery.

C. Shop Drawings will not be officially logged into the Engineer's records until a complete Initial Submittal is made. Refer to paragraph 1.3 above for the Initial Submittal requirements. Partial submittals will not be logged in unless approved in writing from the Engineer.

D. Shop drawings shall be identified by the project name, numbered per the corresponding specification number, and bear the stamp of approval of the Contractor. As a minimum, Shop Drawings shall include:
   1. Product information sheets addressing all the requirements and conditions of the corresponding specification section, and formatted similarly to the project specifications.
   2. Installation procedures.
   3. Specific references to materials and equipment to be provided by others, but which are critical to the proper installation of the supplied material or equipment.

4. Verification of existing dimensions and elevations, as they affect the proposed use of the specified equipment or material.
5. Complete dimensional drawings, as appropriate, depicting the material or equipment in the proposed location.
6. Color charts and product samples as appropriate.
7. Material safety data sheets as appropriate.
8. Components which differ from the specification language, but which meet the specification intent, shall be included on a separate listing page, and provided with adequate support documentation to prove its acceptability.
9. All requested exceptions or deviations from the specification shall be clearly noted within the submittal, as well as noting the reason for said deviation/exception.

E. Shop Drawings will be reviewed only for general conformance with the specifications. The review shall not absolve the Contractor of sole responsibility for the proper incorporation of materials and equipment into the Work. Corrections or changes indicated on Shop Drawings shall not be cause for extra payment, nor considered a change order for additional work.

F. If Shop Drawings are designated as "Reviewed, No Comments" or "Comments as Noted", an electronic copy with the Engineer's stamp and comments will be returned to the Contractor, which will not require resubmittal, unless noted otherwise. However, if subsequent revisions have been made to the shop drawings per the Engineer's comments a revised electronic copy with these changes shall be delivered to the Engineer.

G. Shop Drawings shall not be used on the job unless they bear the stamp and signature of both the Contractor and the Engineer.

1.5 OPERATION AND MAINTENANCE DATA

A. An electronic copy of the Operation and Maintenance Data, if applicable, shall be included as part of the Initial Submittal. This information shall be submitted for each equipment item specified.

B. Approved Operation and Maintenance Data submittals shall be incorporated into the Final Operation and Maintenance Manuals to be submitted at a later date, therefore, this submittal should adhere to the same format as specified in paragraph 1.6B below.

C. As a minimum, the following information shall be provided as part of this submittal:
1. For each item of equipment list name, address and telephone number for the Contractor, Manufacturer, and Equipment Representative.
2. List name and telephone number of the Manufacturer designated local service company, and source for supply of parts.
3. Mark-up each product data sheet to identify specific product or part installed. Delete references to inappropriate data.
4. Provide start-up and shutdown procedures in a logical and consistent format. Include all points of regulation and control.
5. Describe normal and emergency operating procedures in detail.
6. Provide capacities, performance curves, and other applicable engineering data specific to the equipment proposed for the project.

7. Provide supplementary information including test results and equipment drawings, as necessary, to illustrate the relationship of component parts to equipment and processes, controls, and accessories.
8. Provide a complete parts list, and parts stocking recommendation.
9. Provide a complete instrumentation loop diagram, as appropriate, with tabulated listing of all loop components.

1.6 EQUIPMENT AND MAINTENANCE DATA CARDS

A. An electronic copy of Equipment Maintenance Data Cards shall be submitted for each equipment item for which operation and maintenance data has been submitted, as described in the previous paragraph. This submittal shall be made as part of the Initial Submittal to be made for all equipment.

B. The Engineer will specify the format required for this submittal.

1.7 WARRANTIES

A. Unless indicated otherwise, standard Warranties or extended warranties required by the specifications, shall be forwarded as part of the Initial Submittal for each equipment item. As a minimum, warranties shall be in effect for a period of one (1) year from the time the equipment is placed in operation identified in the substantial completion certificate.

B. Repair and replacement of any defective parts shall be covered by the warranty and shall result in no additional cost to the Owner.

C. If submitted Warranties do not meet the specified requirements, the Initial Submittal shall be considered incomplete.

1.8 FINAL OPERATION AND MAINTENANCE MANUALS, IF APPLICABLE

A. Three (3) printed hard copies of the final O&M manuals for each equipment item are to be submitted to the Engineer. This shall be done no later than ninety (90) days prior to substantial completion.

B. The Final Operation and Maintenance Manuals shall be submitted in the following format:
1. Pages shall be punched for standard 8½” x 11” size and shall be placed in a three ring binder.
2. Data sheets 11" x 17" and smaller shall be provided with reinforced binder holes.
3. Larger data sheets shall be folded and placed in an 8½” x 11” envelope, furnished with reinforced binder holes, and labeled with appropriate identification.
4. Separate equipment sections of the information binder shall be tabbed and labeled with a sequential number related to the corresponding specification number.

C. The Final Operation and Maintenance Manuals shall include operation and maintenance data, Equipment Maintenance Data Cards and Warranties for each equipment item to be used on the project.

D. The Equipment Maintenance Data Cards shall be updated to include all information which was not available at the time of the Initial Submittal for any equipment item, which may include serial numbers for equipment and motors.

E. Any other miscellaneous documentation requested by the Engineer during the submittal process shall also be included.

END OF SECTION 01 33 00

SECTION 01 40 00 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Quality control.

B. Quality assurance.

C. Tolerances.

D. References.

E. Labeling.

F. Testing and inspection services.

G. Manufacturers' field services.

1.2 QUALITY ASSURANCE

A. Materials used which will be in contact with potable water shall be of a composition that will not adversely alter the water contacted below the drinking water standards as set forth by the State governing authority.

B. In addition to individual specification requirements, fabrication and assembly of equipment shall meet applicable standards as listed in Standard Specification References. Materials for which no detailed specifications are given shall:
   1. Meet the particular industry standard for the materials used.
   2. Meet the specifications of ASTM, ANSI or SAE for metals and plastics for the use
   3. intended.
   4. Not be used unless it has previously been used for a like purpose for a sufficient length of time in the field or under field simulated laboratory conditions to demonstrate its successful use.

1.3 QUALITY CONTROL

A. Monitor quality control over suppliers, manufacturers, products, services, Site conditions, and workmanship, to produce Work of specified quality.

B. Comply with specified standards as the minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

C. Perform Work using persons qualified to produce required and specified quality.

D. Products, materials, and equipment may be subject to inspection by Engineer and Owner at place of manufacture or fabrication. Such inspections shall not relieve Contractor of complying with requirements of Contract Documents.

E. Supervise performance of Work in such manner and by such means to ensure that Work, whether completed or in progress, will not be subjected to harmful, dangerous, damaging, or otherwise deleterious exposure during construction period.

1.4 TOLERANCES

A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.

B. Comply with manufacturers' recommended tolerances and tolerance requirements in reference standards. When such tolerances conflict with Contract Documents, request clarification from Engineer before proceeding.

C. Adjust products to appropriate dimensions; position before securing products in place.

1.5 REFERENCES

A. For products or workmanship specified by association, trade, or other consensus standards, comply with requirements of standard except when more rigid requirements are specified or are required by applicable codes.

B. Conform to reference standard by date of issue current as of date for receiving Bids except where specific date is established by code.

C. Obtain copies of standards and maintain on Site when required by product Specification Sections.

D. When requirements of indicated reference standards conflict with Contract Documents, request clarification from Engineer before proceeding.

E. Neither contractual relationships, duties, or responsibilities of parties in Contract nor those of Engineer shall be altered from Contract Documents by mention or inference in reference documents.

1.6 LABELING

A. Attach label from agency approved by authorities having jurisdiction for products, assemblies, and systems required to be labeled by applicable code.

B. Label Information: Include manufacturer's or fabricator's identification, approved agency identification, and the following information, as applicable, on each label:
   1. Model number.
   2. Serial number.
   3. Performance characteristics.

C. Manufacturer's Nameplates, Trademarks, Logos, and Other Identifying Marks on Products: Not allowed on surfaces exposed to view in public areas, interior or exterior.

1.7 TESTING AND INSPECTION SERVICES

A. Employ and pay for services of an independent testing agency or laboratory acceptable to Owner to perform specified testing.
   1. Before starting Work, submit testing laboratory name, address, and telephone number, and names of full-time specialist and responsible officer.
   2. Submit copy of report of laboratory facilities' inspection made by Materials Reference Laboratory of National Bureau of Standards during most recent inspection, with memorandum of remedies of deficiencies reported by inspection.

B. Independent firm will perform tests, inspections, and other services specified in individual Specification Sections and as required by Engineer, Owner or authorities having jurisdiction.

   1. Laboratory: Authorized to operate in the State of Wisconsin.
   2. Laboratory Staff: Maintain full-time specialist on staff to review services.
   3. Testing Equipment: Calibrated at reasonable intervals with devices of an accuracy traceable to National Bureau of Standards or accepted values of natural physical constants.

C. Testing, inspections, and source quality control may occur on or off Project Site. Perform off-Site testing as required by Engineer or Owner.

D. Reports shall be submitted by independent firm to Engineer, Contractor, and authorities having jurisdiction, indicating observations and results of tests and compliance or noncompliance with Contract Documents.

E. Cooperate with independent firm; furnish samples of materials, design mix, equipment, tools, storage, safe access, and assistance by incidental labor as requested.

F. Employment of testing agency or laboratory shall not relieve Contractor of obligation to perform Work according to requirements of Contract Documents.

G. Retesting or re-inspection required because of nonconformance with specified or indicated requirements shall be performed by same independent firm on instructions from Engineer. Payment for retesting or re-inspection will be charged to Contractor by deducting testing charges from Contract Sum/Price.

1.8 MANUFACTURER'S FIELD SERVICES

A. When specified in individual Specification Sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe Site conditions, conditions of surfaces and installation, quality of workmanship, startup of equipment, testing, and adjusting and balancing of equipment as applicable, and to initiate instructions when necessary.

B. Submit qualifications of observer to Engineer 30 days in advance of required observations. Observer is subject to approval of Engineer.

C. Report observations and Site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturer's written instructions.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION - Not Used

END OF SECTION 01 40 00

SECTION 01 60 00 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SCOPE

A. All the materials and equipment necessary for the construction of this project shall be obtained, transported, stored, and handled in accordance with the requirements of the Contract Documents, this section, and individual sections of the specifications dealing with specific parts of the project.

1.2 SECTION INCLUDES

A. Products.

B. Product delivery requirements.

C. Product storage and handling requirements.

D. Product options.

E. Equipment electrical characteristics and components.

1.3 PRODUCTS

A. At minimum, comply with specified requirements and reference standards. All products shall be new products purchased specifically for this project.

B. Specified products define standard of quality, type, function, dimension, appearance, and performance required.

C. Furnish products of qualified manufacturers that are suitable for intended use. Furnish products of each type by single manufacturer unless specified otherwise. Confirm that manufacturer's production capacity can provide sufficient product, on time, to meet Project requirements.

D. All equipment shall comply with the National Electric Code.

E. In order that repair, replacement, or expansion of this project in the future may be facilitated, the source of all materials and equipment should be nearby, of domestic origin, and maintain a ready stock.

F. Domestic Products: Where domestic products are specified, this shall be interpreted to mean products mined, manufactured, fabricated, or produced in United States or its territories.

G. Do not use materials and equipment removed from existing premises except as specifically permitted by Contract Documents.

H. Furnish interchangeable components from same manufacturer for components being replaced.

1.4 PRODUCT DELIVERY REQUIREMENTS

A. The Contractor shall arrange for all material and equipment to be transported to the project site.

B. Transport and handle products according to manufacturer's instructions. Means of transportation shall be used which will assure a safe and timely arrival of the materials and equipment.

C. Promptly inspect shipments to ensure products comply with requirements, quantities are correct, and products are undamaged: free from defects, clean and dry upon arrival at the project site.

D. Provide equipment and personnel to handle products; use methods to prevent soiling, disfigurement, or damage.

E. Shipping costs shall be included in the contract prices.

1.5 PRODUCT STORAGE AND HANDLING REQUIREMENTS

A. Store and protect products according to manufacturer's instructions.

B. Store products with seals and labels intact and legible.

C. Storage methods used shall protect the materials and equipment from the effects of rain, snow, and sunlight. Storage methods shall maintain the integrity of the equipment and materials and shall prevent chipping, cracking, breakage, damage of coatings, or damage of any other type.

1.
2. Store sensitive products in weathertight, climate-controlled enclosures in an environment suitable to product.
3. For exterior storage of fabricated products, place products on sloped supports aboveground.
4. Provide suitable off-site storage and protection when Site does not permit on-Site storage or protection.
5. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
6. Store loose granular materials on solid flat surfaces in well-drained area. Prevent mixing with foreign matter.
7. Provide equipment and personnel to store products; use methods to prevent soiling, chipping, cracking, breaking, disfigurement, or damage.
8. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

D. The Contractor shall select methods of material and equipment handling as may be appropriate to assure that no damage to the material and equipment occurs. The handling methods chosen shall assure that the equipment and materials are not scraped or dropped.

1.6 ACCEPTABLE MANUFACTUERES: SUBSTITUTIONS

A. Materials or equipment identified on the Plans or in these Specifications by reference to manufacturers' names, number designations, or trademarks are identified for the purpose of establishing a standard of quality or performance. Any material or equipment offered by another manufacturer which will meet the intent of these specifications and will perform the functions of the materials or equipment specified in a manner equal to that material or equipment specified may be used. However, before using such a substitute, the Contractor shall obtain the approval of the Engineer by submitting a written request for substitution and providing manufacturer's literature and test results necessary to demonstrate the equality of such a substitution. Such a request shall be made at least twenty-one (21) days before the Contractor wishes to place his order for the equipment, or for the materials. This substitute method does not apply to the equipment that is listed in the base bid or specified elsewhere. If equipment is listed in the base bid, an alternate bid space can be provided as called out in the specifications and bid proposals.

1.7 PAYMENT FOR MATERIALS NOT INCORPORATED INTO THE WORK

A. Partial payments will be made by the Owner for materials not incorporated into the work only where such materials are stored in a secured, insured, lockable area owned or under the formal control of the Owner. However, the Owner is not obligated hereunder to provide such secured, lockable area for the Contractor. The Contractor is totally responsible for proper maintenance and care of that equipment until it is incorporated into the project and accepted by the Owner.

PART 2 - PRODUCTS

2.1 EQUIPMENT ELECTRICAL CHARACTERISTICS AND COMPONENTS

A. All equipment shall comply with the National Electrical Code.

PART 3 - EXECUTION - Not Used

END OF SECTION 01 60 00

SECTION 01 60 10 – STANDARD SPECIFICATION REQUIREMENTS

PART 1 - GENERAL

1.1 SCOPE

A. This Section describes the standard specification references included as part of the contract. The reference standard list identified herein shall include, but not be limited to, standard specifications applicable to the respective materials and work performed. All Divisions of the specification will apply to the reference standards as related to work completed. Unless noted specifically otherwise, all reference standards used for completion of project work shall be of the latest issue year and/or date available.

B. Materials, equipment, construction, labor and overall work procedures required to complete project work shall be provided by the Contractor in accordance with specified requirements and standard specification reference conditions. The Contractor shall furnish and install all material and labor, to the greatest extent, complete in accordance with standard specification references as apply.

C. Materials and equipment of comparable type and quality produced by others will be acceptable, if offered with satisfactory data under similar operating conditions, on the basis as set forth in the General Conditions, bid proposals and as approved by the Owner's representative.

1.2 SPECIFICATION REFERENCES

A. American Association of State Highway and Transportation Officials (AASHTO) standard references shall include, but not be limited to, the following:
   1. AASHTO H-20 Standard Specification for Highway Bridges
   2. AASHTO M20 Penetration Graded Asphalt Cement
   3. AASHTO M140 Emulsified Asphalt
   4. AASHTO M156 Requirements for Mixing Plants for Hot Mixed, Hot Laid Bituminous Paving Mixtures
   5. AASHTO M198 Joints for Circular Concrete Sewer and Culvert Pipe Using Flexible Watertight Gaskets
   6. AASHTO M230 Extruded Insulation Board (Polystyrene)
   7. AASHTO T2 Sampling Stone, Slag, Gravel, Sand, and Stone Block for Use as Highway Materials
   8. AASHTO T11 Amount of Material Finer than 0.075 Sieve in Aggregate
   9. AASHTO T27 Sieve Analysis of Fine and Coarse Aggregates
   10. AASHTO T30 Mechanical Analysis of Extracted Aggregate
   11. AASHTO T37 Sieve Analysis of Mineral Filler
   12. AASHTO T89 Determining the Liquid Limit of Soil
   13. AASHTO T90 Determining the Plastic Limit and Plasticity Index of Soils
   14. AASHTO T96 Resistance to Abrasion of Small Size Coarse Aggregate by Use of the Los Angeles Machine
   15. AASHTO T104 Soundness of Aggregate by Use of Sodium Sulfate or Magnesium Sulfate

16. AASHTO T168 Sampling Bituminous Paving Mixtures
17. AASHTO T245 Resistance to Plastic Flow of Bituminous Mixtures Using Marshall Apparatus

B. Specification American Concrete Institute (ACI) standard references shall include, but not be limited to, the following:
1. ACI 211.1 Recommended Practice for Selecting Proportions for Normal and Heavy Weight Concrete
2. ACI 301 Specification for Structural Concrete
3. ACI 302.1 Guide for Concrete Floor and Slab Construction
4. ACI 304 Measuring, Mixing, Transporting, and Placing Concrete
5. ACI 305 Recommended Practice for Hot Weather Concreting
6. ACI 306 Recommended Practice for Cold Weather Concreting
7. ACI 315 Manual of Standard Practices for Detailing Reinforced Concrete Structures
8. ACI 318 Building Code Requirements for Reinforced Concrete
9. ACI 347 Recommended Practice for Concrete Formwork
10. ACI 531 Standard Building Code Requirements for Concrete Masonry Structures

C. American Gear Manufacturers Association (AGMA) standard references shall include, but not be limited to, the following:
1. AGMA 218 Rating the Pitting Resistance and Bending Strength of Spur and Helical and Involute Gear Teeth
2. AGMA 440 Single and Double-Reduction Cylindrical-Worm and Helical-Worm Speed Reducers
3. AGMA 2001-B99 Fundamental Rating Factors and Calculation Methods for Involute and Helical Gear Teeth
4. AGMA 6034-B92 Practice for Enclosed Cylindrical Worm Gear Speed Reducers and Gearmotors

D. American Iron and Steel Institute (AISI) standard references shall include, but not be limited to, the following:
1. AISI 4130 Heat Treated Alloy Steel
2. AISI 4140 Heat Treated Hexagon Steel

E. American National Standards Institute (ANSI) standard references shall include, but not be limited to, the following:
1. ANSI A58.1 Building Code Requirements or Minimum Design Loads in Buildings and Other Structures
2. ANSI A117.1 Specifications for Making Buildings and Facilities Accessible to and Usable by Physically Handicapped People
3. ANSI A216.1 Section Overhead Type Door (NAGDM 102)
4. ANSI B16 Cast Iron Pipe Flanges and Flanged Fittings, 25, 125, 250, and 300 lbs
5. ANSI B31 Power Piping
6. ANSI/NEMA ST 20 Dry Type Transformers for General Applications
7. ANSI/NWMA I.S1 Industry Standard for Wood flush Doors (includes Standards I.S.1.1 through I.I.S.1.7).
8. ANSI/IEEE 112 Test Procedure for Polyphase Induction Motors and Generators
9. ANSI/NEMA MG 1 Motors and Generators
10. ANSI/NFPA 70 National Electrical Code

11. ANSI G17 Specifications for Forged or Rolled Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High-Temperature Service
12. ANSI Z223.1 Fuel Gas Code

F. American Plywood Association (APA) standard references shall include, but not be limited to, the following:
1. APA Group 2

G. American Society for Testing and Materials (ASTM) standard references shall include, but not be limited to, the following:
1. ASTM A36 Specification for Structural Steel
2. ASTM A48 Specification for Gray Iron Castings
3. ASTM A53 Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless
4. ASTM A82 Specification for cold-Drawn Steel Wire for Concrete Reinforcement
5. ASTM A90 Test Method for Weight of Coating on Zinc-Coated (Galvanized) Iron or Steel Articles
6. ASTM A106 Specification for Seamless Carbon Steel Pipe for High Temperature Service
7. ASTM A108-C41 Specification for Steel, Carbon, Cold-Rolled Standard Quality
8. ASTM A116 Specification for Zinc-Coated (Galvanized) Steel Woven Wire Fence Fabric
9. ASTM A120 Specification for Pipe, Steel, Black and Hot-Dipped Zinc Coated (Galvanized) Welded and Seamless for Ordinary Uses
10. ASTM A121 Specification for Zinc-Coated (Galvanized) Steel Barbed Wire
11. ASTM A123 Specification for Zinc (Hot Galvanized) Coatings on Products Fabricated from Rolled, Pressed, and Forged Steel Shapes, Plates, Bars and Strip
12. ASTM A126 Specification for Gray Iron Castings for Valves, Flanges and Pipe Fittings
13. ASTM A153 Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
14. ASTM A167 Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip
15. ASTM A185 Specification for Welded Steel Wire Fabric for Concrete Reinforcement
16. ASTM A193 Specification for Alloy-Steel and Stainless Steel Bolting Materials for High Temperature Service
17. ASTM A269 Seamless and Welded Austenitic Stainless Steel Tubing for General Service
18. ASTM A276 Specification for Stainless Steel Bar
19. ASTM A296 Specification for Stainless Steel, Type 304 or 316
20. ASTM A307 Specification for Carbon Steel Externally Thread Standard Fasteners
21. ASTM A312 Specification for Stainless Steel Tube
22. ASTM A325 Specification for High-Strength Bolts for Structural Steel Joints
23. ASTM A366 Steel, Carbon, Cold-Rolled Sheet, Commercial Quality
24. ASTM A370 Methods and Definitions for Mechanical Testing of Steel Products
25. ASTM A392 Specification for Zinc-Coated Steel Chain-Link Fence Fabric
26. ASTM A416 Uncoated Seven-Wire Stress-Relieved Strand for Prestressed Concrete
27. ASTM A446 Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot Dip Process, Structural (Physical) Quality
28. ASTM A491 Specification for Aluminum-Coated Steel Chain-Link Fence Fabric
29. ASTM A500 Specification for cold-Formed Welded and Seamless Carbon Steel Structure Tubing in Rounds and Shapes
30. ASTM A525 Specification for General Requirements for Steel Sheet, Zinc-Coated (Galvanized) by the Hop-Dip Process
31. ASTM A526 Steel Sheet, Zinc-Coated (Galvanized) by the Hot dip Process, Commercial Quality

32. ASTM A527 Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot Dip Process, Lock-Forming Quality
33. ASTM A615 Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
34. ASTM A743 Specification for Corrosion-Resistant Iron-Chromium, Chromium-Nickel, and Nickel-Base Alloy Castings for General Application
35. ASTM B209 Specification for Aluminum and Aluminum Alloy Sheet and Plate
36. ASTM B210 Specification for Aluminum-Alloy Drawn Seamless Tubes
37. ASTM B221 Specification for Aluminum-Alloy Extruder Bars, Rods, Wire, Shapes, and Tubes
38. ASTM B456 Electrodeposited Coatings of Copper Plus Nickel Plus Chromium and Nickel Plus Chromium
39. ASTM C31 Making and Curing Concrete Test Specimens in the Field
40. ASTM C33 Specification for concrete Aggregates
41. ASTM C36 Specification for Gypsum Wallboard
42. ASTM C39 Test for Compressive Strength of Cylindrical Concrete Specimens
43. ASTM C42 Standard Method of Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
44. ASTM C55 Specification for Concrete Building Brick
45. ASTM C88 Test for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
46. ASTM C90 Specification for Hollow Load-Bearing Concrete Masonry Units
47. ASTM C91 Specification for Masonry Cement
48. ASTM C94 Specification for Ready-Mixed Concrete
49. ASTM C117 Test for Material Finer than No. 200 Sieve in Mineral Aggregates by Washing
50. ASTM C129 Specification for Non-Load-Bearing Concrete Masonry Units
51. ASTM C131 Test for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
52. ASTM C136 Sieve Analysis of Fine and Coarse Aggregates
53. ASTM C139 Specification for Concrete Masonry Units for Construction of Catch Basins and Manholes
54. ASTM C143 Test for Slump of Portland Cement Concrete
55. ASTM C144 Specification for Aggregate for Masonry Mortar
56. ASTM C150 Specification for Portland Cement
57. ASTM C171 Specification for Sheet Materials for Curing Concrete
58. ASTM C207 Specification for Hydrated Lime for Masonry Purposes
59. ASTM C231 Test for Air Content of Freshly Mixed Concrete by the Pressure Method
60. ASTM C260 Specification for Ai Entraining Admixtures for Concrete
61. ASTM C270 Specification for Mortar for Unit Masonry
62. ASTM C309 Specification for Liquid Membrane-Forming Compounds for Curing Concrete
63. ASTM C404 Specification for Aggregate for Masonry Grout
64. ASTM C443 Specification for Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber Gaskets
65. ASTM C476 Specification for Grout for Reinforced and Nonreinforced Masonry
66. ASTM C478 Specification for Precast Reinforced Concrete Manhole Sections
67. ASTM C494 Specification for Chemical Admixtures for Concrete
68. ASTM C514 Specification for Nails of the Application of Gypsum Wallboard

69. ASTM C534 Specification for Preformed Flexible Elastomeric Cellular Thermal Insulation in Sheet and Tubular Form
70. ASTM C535 Test for Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and Impact in to Los Angeles Machine
71. ASTM C547 Specification for Mineral Fiber Preformed Pipe Insulation
72. ASTM C553 Specification for Mineral Fiber Blanket and Felt Insulation (Industrial Type)
73. ASTM C557 Specification for Adhesive for Fastening Gypsum Wallboard to Wood Framing
74. ASTM C602 Specification for Agricultural Liming Materials
75. ASTM C612 Specification for Mineral Fiber Block and Board Thermal Insulation
76. ASTM C618 Specification for Fly Ash and Raw and Calcined Natural Pozzolons for Using Portland Cement Concrete
77. ASTM C630 Specification for Water-Resistant Gypsum Backing Board
78. ASTM C645 Specification for Non-Load (Axial) Bearing Steel Studs, Runners (Track) and Rigid Furring Channels for Screw Application of Gypsum Board
79. ASTM C646 Specification for Steel Drill Screws for the Application of Gypsum Board to Light-Gage Steel Studs
80. ASTM C754 Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Wallboard, Backing Board or Water-Resistant Backing Board
81. ASTM C780 Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry
82. ASTM C834 Specification for Latex Sealing Compounds
83. ASTM C840 Specification for Application and Finishing of Gypsum Board
84. ASTM C894 Specification for Type W Screws for the application of Gypsum Board to Wood Framing
85. ASTM C920 Specification for Elastomeric Joint Sealants
86. ASTM C923 Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures and Pipelines
87. ASTM D75 Sampling Aggregates
88. ASTM D226 Specification for Asphalt - Saturated Organic Roofing Felt for Use in Membrane Waterproofing and Built-up Roofing
89. ASTM D412 Test Methods of Rubber Properties in Tension
90. ASTM D422 Particle Size Analysis of Soils
91. ASTM D448 Specification for Standard Sizes of Coarse Aggregate for Highway Construction
92. ASTM D570 Test Method for Water Absorption of Plastics
93. ASTM D638 Test Method for Tensile Properties of Plastics
94. ASTM D792 Specification for Specific Gravity and Density of Plastics by Displacement
95. ASTM D977 Specification for Emulsified Asphalt
96. ASTM D1140 Test for Amount of Material in Soils Finer than the No. 200 Sieve
97. ASTM D1238 Test for Flow Rates of Thermoplastics by Extrusion Plastometer
98. ASTM D1241 Specification for Materials for Soil-Aggregate Subbase, Base, and Surface Courses
99. ASTM D1248 Specification for Polyethylene Plastics Molding and Extrusion Materials
100. ASTM D1505 Test for Density of Plastics by the Density-Gradient Technique
101. ASTM D1508 Testing Carbon Black, Pelleted - Fines Content
102. ASTM D1556 Test for Density of Soil in Place by the Sand-Cone Method
103. ASTM D1557 Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10-Lb (4.54 kg) Rammer and 18 in. (457 mm) drop

104. ASTM D1693 Test for Environmental Stress - Cracking of Ethylene Plastics
105. ASTM D1752 Specification for Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction
106. ASTM D1784 Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds
107. ASTM D1785 Specification for Poly (Vinyl Chloride (PVC) Plastic Pipe Schedules 40, 80, and 120
108. ASTM D2146 Specification for Propylene Plastic Molding and Extrusion Materials
109. ASTM D2172 Test for Quantitative Extraction of Bitumen from Bituminous Paving Mixtures
110. ASTM D2216 Laboratory Determination of Water (Moisture) Content of Soil, Rock, and Soil-Aggregate Mixtures
111. ASTM D2240 Test for Rubber Property-Durometer Hardness
112. ASTM D2241 Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe (SDR-PR)
113. ASTM D2287 Specification for Nonrigid Vinyl chloride Polymer and Copolymer Molding and Extrusion Compounds
114. ASTM D2412 Test for External Loading Properties of Plastic Pipe by Parallel-Plate Loading
115. ASTM D2466 Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40.
116. STM D2467 Specification for Socket-Type Poly (Vinyl Chloride) (PVC) Plastic Pipe fittings, Schedule 30
117. ASTM D2487 Classification of Soils for Engineering Purposes
118. ASTM D2563 Standard Recommended Practice for Classifying Visual Defects in Glass Reinforced Laminates
119. ASTM D2657 Practice for Heat-Joining Polyolefin Pipe and Fittings
120. ASTM D2726 Test for Bulk Specific Gravity of Compacted Bituminous Mixtures Using Saturated Surface Dry Specimens
121. ASTM D2822 Specification for Asphalt Roof Cement
122. ASTM D2837 Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials
123. ASTM D2855 Standard Practice for Making Solvent-Cemented Joints with Poly (Vinyl Chloride) (PVC) Pipe and Fittings
124. ASTM D2922 Test for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
125. ASTM D2950 Test for Density of Bituminous Concrete in Place by Nuclear Method
126. ASTM D3017 Test for Moisture Content of Soil and Soil-Aggregate by Nuclear Method (Shallow Depth)
127. ASTM D3018 Specification for Class A Asphalt Shingles Surfaced with Mineral Granules.
128. ASTM D3034 Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings
129. ASTM D3139 Specification for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals
130. ASTM D3212 Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastometric Seals
131. ASTM D3350 Specification for Polyethlene Plastics Pipe and Fittings Materials
132. ASTM D3462 Specification for Asphalt Shingles Made from Glass Mat and Surfaced with Mineral Granules
133. ASTM D4318 Test Method for Liquid Limit, Plastic Limit, Plasticity Index of Soils.
134. ASTM E84 Test for Surface Burning Characteristics of Building Materials

135. ASTM E90 Measurement of Airborne sound Transmission Loss of Building Partitions
136. ASTM E136 Test for Behavior of Materials in a Vertical Tube Furnace at 7500C
137. ASTM E152 Methods of Fire Tests of Door Assemblies
138. ASTM E283 Rate of Air Leakage through Exterior Windows, Curtain Walls, and Doors
139. ASTM E330 Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference
140. ASTM E814 Method of Fire Tests of Tough-Penetration Fire Stops
141. ASTM F441 Specification for chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Schedules 40 and 80
142. ASTM F477 Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe
143. ASTM F679 Specification for Poly (Vinyl Chloride) (PVC) Large Diameter Plastic Gravity Sewer Pipe and Fittings

H. American Water Works Association (AWWA) standard references shall include, but not be limited to, the following:
1. AWWA C104 Cement-Mortar Linings for Cast Iron and Ductile Iron Pipe and Fittings
2. AWWA C110 Ductile Iron and Gray Iron Fittings, 3-inch through 48-inch, for Water and Other Liquids
3. AWWA C111 Rubber Gasket Joints for Ductile Iron and Gray Iron Pressure Pipe and Fittings
4. AWWA C115 Fanged Cast Iron and Ductile Iron Pipe with Threaded Flanges
5. AWWA C150 Thickness Design of Ductile Iron Pipe
6. AWWA C151 Ductile Iron Pipe, Centrifugally Cast in Metal Molds or Sand Lined Molds for Water or Other Liquids
7. AWWA C153 Ductile Iron Compact Fittings, 3-inch through 16-inch, for Water and Other Liquids
8. AWWA C200 Standard for Steel Water Pipe, 6 inches and larger
9. AWWA C203 Standard for Coal-Tar Enamel Protective Coatings for Steel Water Pipe
10. AWWA C205 Standard for Cement - Mortar Protective Lining and Coating for Steel Water Pipe – 4 inches and larger - Shop Applied
11. AWWA C207 Standard for Steel Pipe Flanges
12. AWWA C208 Standard for Dimensions for Steel Water Pipe Fittings
13. AWWA C500 Gate Valves, 3 through 48 inches NPS, for Water and Sewage Systems
14. AWWA C501 Sluice Gates
15. AWWA C504 Rubber-Seated Butterfly Valves
16. AWWA C507 Ball Valves, 6 thru 18-inch, for Water and Sewage Systems
17. AWWA C600 Installation of Ductile Iron Water Mains and their Appurtenances
18. AWWA C900 Standard for Polyvinyl Chloride (PVC) Pressure Pipe, 4-inch through 12-inch for water
19. AWWA C905 Standard for Polyvinyl Chloride (PVC) Water Transmission Pipe, Nominal Diameters 14-inch through 36-inch

I. American Welding Society (AWS) standard references shall include, but not be limited to, the following:
1. AWS D1.1 Structural Welding Code - Steel
2. AWS/ANSI D1 Structural Welding Code - Aluminum

J. American Wood Preservers Bureau (AWPB) standard references shall include, but not be limited to, the following:
1. AWPA Standard LP Series

K. Anti-Friction Bearing Manufacturers Association (AFBMA) standard references shall include, but not be limited to, the following:
   1. AFBMA 9 Load ratings and Fatigue Life for Ball Bearings
   2. AFBMA 11 Load ratings and Fatigue Life for Ball Bearings

L. Architectural Woodwork Institute (AWI) standard references shall include, but not be limited to, the following:
   1. AWI Quality Standards of Architectural Woodwork Institute

M. Corps of Engineers Specifications (CDR) standard references shall include, but not be limited to, the following:
   1. CRD C572 Corps of Engineers Specifications for Polyvinyl Chloride Waterstops

N. Federal Specifications (FS) standard references shall include, but not be limited to, the following:
   1. FS-DDD-M-148 Cotton Mats (For Concrete Curing)
   2. FS-FF-B-561 Bolts (Screw), Lag
   3. FS-FF-N-105 Nails, Brads, Staples and Spikes: Wire, Cut and Wrought
   4. FS-L-S-125 Screening, Insect, Nonmetallic
   5. FS-RR-W-365 Wire Fabric (Insect Screening)
   6. FS-SS-C-153C Cement, Bituminous, Plastic
   7. FS-SS-S-1188 Sound Controlling (Acoustical) Tiles and Panels
   8. FS-TT-P-31 Paint, Oil: Iron-oxide, Ready Mixed, Red and Brown
   9. FS-TT-P-641 Primer Coating; Zinc Dust-Zinc Oxide (For Galvanized Surfaces)
   10. FS-TT-P-645A Primer, Paint, Zinc Chromate, Alkyd Type

O. National Fire Protection Association (NFPA) standard references shall include, but not be limited to, the following:
   1. NFPA National Design Specification for Wood Construction
   2. NFPA 80 Fire Doors and Windows
   3. NFPA 90A Installation of Air Conditioning and Ventilating Systems
   4. NFPA 211 Standard for Chimneys, Fireplaces, Vents and Solid Fuel Burning Appliances
   5. NFPA 252 Standard Method of Fire Tests for Door Assemblies
   6. NFPA 255 Building Materials, Test of Surface Burning Characteristics (ASTM E84)

P. National Bureau of Standards Product Standard (PS) standard references shall include, but not be limited to, the following:
   1. PS-15-69 Custom Contact - Molded Reinforced - Polyester Chemical Resistant Process Equipment

Q. Prestressed Concrete Institute (PCI) standard references shall include, but not be limited to, the following:
   1. PCI MNL-116 Manual for Quality Control for Plants and production of Precast Prestressed Concrete Products

R. Sheet Metal and Air Conditioning Contractors National Association (SMACNA) standard references shall include, but not be limited to, the following:
   1. SMACNA Architectural Sheet Metal Manual
   2. SMACNA Low pressure Duct Construction Standards
   3. SMACNA High pressure Duct Construction Standards

S. Steel Structures Painting Council (SSPC) standard references shall include, but not be limited to, the following:
   1. SSPC-SP1 Solvent Cleaning
   2. SSPC-SP6 Commercial Blast Cleaning
   3. SSPC-Paint 12 Cold-Applied Asphalt Mastic (Extra Thick Film)

T. Underwriters Laboratory (UL) standard references shall include, but not be limited to, the following:
   1. UL 10B Fire Tests of door Assemblies
   2. UL 33 Heat Responsive Links for Fire Protection Service
   3. UL 181 Factory-Made Air Ducts and Connectors
   4. UL 441 Standard for Gas Vents.
   5. UL 555 Fire Dampers and Ceiling Dampers
   6. UL 555S Leakage Rated Dampers for use in Smoke Control Systems
   7. UL 723 Surface Burning Characteristics of Building Materials

U. International certification services (ISO) standard reference for recognized quality assurance as ISO 9001 certification.

PART 2 - PRODUCTS – Not Used

PART 3 - EXECUTION – Not Used

END OF SECTION 01 60 10

SECTION 01 70 00 - EXECUTION REQUIREMENTS AND PROJECT CLOSEOUT

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Field engineering.

B. Protection of existing facilities, work and workmen.

C. Fire protection.

D. Site cleanliness.

E. Dump sites and materials, and equipment storage sites.

F. Requirement for safety barricades, warning lights and signs.

G. Traffic control.

H. Substantial completion; Final completion.

I. Starting of systems.

J. Instructions for operation.

K. Project record documents.

L. Spare parts and maintenance products.

M. Examination.

N. Execution.

O. Protecting installed construction.

P. Final cleaning.

1.2 FIELD ENGINEERING

A. Engineer will locate and Contractor shall protect survey control and reference points. Promptly notify Engineer of discrepancies discovered.

B. Control datum for survey is indicated on Drawings or will be provided by Engineer.

C. Verify setbacks and easements; confirm Drawing dimensions and elevations.

D. Establish elevations, lines, and levels using recognized engineering survey practices.

E. Protect survey control points prior to starting Site Work; preserve permanent reference points during construction.

F. Promptly report to Engineer loss or destruction of reference point or relocation required because of changes in grades or other reasons.

1.3 PROTECTION OF EXISTING FACILITIES, WORK AND WORKMEN

A. Each Contractor shall comply with OSHA and the General Orders on Safety in Construction as issued by the Wisconsin Department of Commerce and shall observe the safety provisions of applicable laws and building codes. Each shall exercise precautions in accordance with safety provisions of the Associated General Contractors of America Manual of Accident Prevention in Construction.

B. Each Contractor shall:
   1. Erect and maintain all required barricades, guard rails, fences, safety lanterns and temporary walkways of sufficient size, strength and type necessary for protection of material storage, adjoining property and the new construction, as well as to prevent accidents to workmen, and others, at the job site.
   2. Notify the Owner if existing property interferes with the work sufficiently in advance that the situation can be evaluated by Owner and Engineer.
   3. Provide and maintain temporary shoring and bracing, as necessary, for existing underground utilities and other improvements and shall protect them from collapse or other damage until such times as they are to be removed, incorporated into work of the new construction, or can be properly backfilled upon completion of new work. All damages to active utilities and other existing improvements shall be repaired.
   4. Protect the work against damage from rain, groundwater, backup from sewers and all other sources of water, snow, wind, ice, storms, or heat. Maintain all work, materials, apparatus, and fixtures incorporated in the work or stored on the site free from injury or damage. At the end of the day, protect all new work and active utilities from damage.
   5. Provide dust control.
   6. Locate material storage and earth stockpiles on the Owner's property to avoid interference with the installation of the work and to prevent damage to existing utilities and structures. Any damages to existing utilities or structures resulting from traffic loads or lack of proper protection shall be repaired by the responsible Contractor.
   7. Burn no materials or debris on the premises without specific permission from the Owner, and then only in approved locations after securing the necessary permits.
   8. Maintain the site in a safe and clean condition.

1.4 FIRE PROTECTION

A. Each Contractor shall provide and maintain, at the site of the work during the entire construction period, a minimum of two (2) fire extinguishers, and other such fire protection equipment and devices as necessary and suitable for any possible class or type of fire. Extinguishers shall be non-freeze type, such as A-rated dry chemical extinguishers of not less than ten (10) pounds capacity each.

1.5 SITE CLEANLINESS

A. Periodically, as necessary, each Contractor shall clean the premises of accumulations of surplus materials and rubbish caused by his activities and the activities of his subcontractors, and dispose of such materials in a legal manner. The Contractor(s) shall remove combustible debris and flammable liquids promptly.

B. If the Contractor does not remove rubbish or maintain the work area as specified above, the Owner reserves the right to have work done by others and the cost will be deducted from monies due the Contractor.

1.6 DUMP SITES AND MATERIALS, AND EQUIPMENT STORAGE SITES

A. The Contractor(s) shall be solely responsible for arranging his own dumpsites for waste materials and sites for storage of equipment and construction materials incidental to the bid items provided. The municipality assumes no responsibility for the arrangement of, the payment for, or the cleanup of such sites. The Contractor(s) shall not, in any way, depend upon verbal representations by representatives of the municipality in this regard.

1.7 REQUIREMENT FOR SAFETY BARRICADES, WARNING LIGHTS AND SIGNS

A. The Contractor shall be solely responsible for the erection and maintenance of all barricades, lights and signs necessary to assure the safety of the public and to minimize inconvenience to the public. All hazards within the limits of the work and upon detours around the work shall be well marked with barricades, lights, and signs in sufficient numbers and at appropriate locations to safeguard against injuries to workers, on-lookers, pedestrians, and drivers and passengers of vehicles, both in daylight and during nighttime. These safeguards shall be moved, changed, increased in number or removed as required during the progress of the work to meet changing conditions. All warning devices shall be kept clean and in good repair so as to be readily discernible at all times.

B. The Contractor shall investigate and satisfy the safety requirements of all local, state, and Federal agencies. Signing shall be in accordance with the provisions of the Manual on Uniform Traffic Control Devices.

C. The Contractor covenants that he will indemnify the Owner and the Engineer from any loss, damage, costs, charges, or expenses, whether to persons or property, to which the Owner, the Engineer, or both may have been party by reason of act, action, neglect, omission, or default on the part of the Contractor.

1.8 TRAFFIC CONTROL

A. Whenever possible all public traffic shall be permitted to pass through the work with as little inconvenience and delay as possible. Existing traffic signal and highway lighting systems shall be kept in operation for the travelling public during progress of the work. The Contractor shall remove existing traffic and street name signs that will interfere with construction, store them in a safe place, and replace them with suitable temporary signs.

B. Flagmen, barricades, signs, and traffic control furnished by the Contractor for construction purposes shall conform to the standards of the State Department of Transportation, Division of Highways, and the latest edition of the "Manual on Uniform Traffic Control Devices," published by the U.S. Department of Transportation.

C. When the Contractor's operations obstruct or endanger a traffic lane, and no marked detour has been provided, the Contractor shall furnish a flagman, or flagmen, as necessary to direct traffic through or around the construction area. When a street is closed to through traffic, barricades shall be placed at the adjacent intersections, as well as at the location of the obstruction. Detour signs shall be attached to the barricades at the adjacent intersections and shall be adequately illuminated and/or reflectorized to be clearly visible at all times.

1.9 SUBSTANTIAL COMPLETION; FINAL COMPLETION

A. Prerequisites to Substantial Completion: Complete following items before requesting Certification of Substantial Completion, either for entire Work or for portions of Work:
   1. Submit maintenance manuals, Project record documents and other similar final record data in compliance with this Section.
   2. Complete facility startup, testing, adjusting, balancing of systems and equipment, demonstrations, and instructions to Owner's operating and maintenance personnel as specified in compliance with this Section.
   3. Conduct inspection to establish basis for request that Work is substantially complete. Create comprehensive list (initial punch list) indicating items to be completed or corrected, value of incomplete or nonconforming Work, reason for being incomplete, and date of anticipated completion for each item. Include copy of list with request for Certificate of Substantial Completion.
   4. Obtain and submit releases enabling Owner's full, unrestricted use of Project and access to services and utilities. Include certificate of occupancy, operating certificates, and similar releases from authorities having jurisdiction and utility companies.
   5. Deliver tools, spare parts, extra stocks of material, and similar physical items to Owner.
   6. Discontinue or change over and remove temporary facilities and services from Project Site, along with construction tools, mockups, and similar elements.
   7. Perform final cleaning according to this Section.

B. Substantial Completion Inspection:
   1. When Contractor considers Work to be substantially complete, submit to Engineer :
      a. Written certificate that Work, or designated portion, is substantially complete.
      b. List of items to be completed or corrected (initial punch list).
   2. Within seven days after receipt of request for Substantial Completion, Engineer will make inspection to determine whether Work or designated portion is substantially complete.
   3. Should Engineer determine that Work is not substantially complete:
      a. Engineer will promptly notify Contractor in writing, stating reasons for its opinion.
      b. Contractor shall remedy deficiencies in Work and send second written request for Substantial Completion to Engineer.
      c. Engineer will re-inspect Work.
      d. Redo and Inspection of Deficient Work: Repeated until Work passes Engineer's inspection.

4. When Engineer finds that Work is substantially complete, Engineer will:
    a. Prepare Certificate of Substantial Completion on EJCDC C-625 - Certificate of Substantial Completion, accompanied by Contractor's list of items to be completed or corrected as verified and amended by Engineer and Owner (final punch list).
    b. Submit Certificate to Owner and Contractor for their written acceptance of responsibilities assigned to them in Certificate.
5. After Work is substantially complete, Contractor shall:
    a. Allow Owner occupancy of Project under provisions stated in Certificate of Substantial Completion.
    b. Complete Work listed for completion or correction within time period stipulated.

C. Prerequisites for Final Completion: Complete following items before requesting final acceptance and final payment.
1. When Contractor considers Work to be complete, submit written certification that:
    a. Contract Documents have been reviewed.
    b. Work has been examined for compliance with Contract Documents.
    c. Work has been completed according to Contract Documents.
    d. Work is completed and ready for final inspection.
2. Submittals: Submit following:
    a. Final punch list indicating all items have been completed or corrected.
    b. Final payment request with final releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
    c. Specified warranties, workmanship/maintenance bonds, maintenance agreements, and other similar documents.
    d. Contractor affidavit of release of liens.
3. Perform final cleaning for Contractor-soiled areas according to this Section.

D. Final Completion Inspection:
1. Within seven days after receipt of request for final inspection, Engineer will make inspection to determine whether Work or designated portion is complete.
2. Should Engineer consider Work to be incomplete or defective:
    a. Engineer will promptly notify Contractor in writing, listing incomplete or defective Work.
    b. Contractor shall remedy stated deficiencies and send second written request to Engineer that Work is complete.
    c. Engineer will re-inspect Work.
    d. Redo and Inspection of Deficient Work: Repeated until Work passes Engineer's inspection.

1.10 STARTING OF SYSTEMS

A. Coordinate schedule for startup of various equipment and systems.

B. Notify Engineer seven days prior to startup of each item.

C. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions which may cause damage.

D. Verify that tests, meter readings, and electrical characteristics agree with those required by equipment or system manufacturer.

E. Verify that wiring and support components for equipment are complete and tested.

F. Execute startup under supervision of manufacturer's representative or Contractors' personnel according to manufacturer's instructions.

G. When specified in individual Specification Sections, require manufacturer to provide authorized representative who will be present at Site to inspect, check, and approve equipment or system installation prior to startup and will supervise placing equipment or system in operation.

1.11 INSTRUCTIONS FOR OPERATION

A. Demonstrate operation and maintenance of products to Owner's personnel.

B. Use operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain all aspects of operation and maintenance.

C. Demonstrate startup, operation, control, adjustment, troubleshooting, servicing, maintenance, and shutdown of each item of equipment.

D. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.

1.12 PROJECT RECORD DOCUMENTS

A. Maintain on Site one set of the following record documents; record actual revisions to the Work:
   1. Drawings.
   2. Specifications.
   3. Addenda.
   4. Change Orders and other modifications to the Contract.
   5. Reviewed Shop Drawings, product data, and Samples.
   6. Manufacturer's instruction for assembly, installation, and adjusting.

B. Ensure entries are complete and accurate, enabling future reference by Owner.

C. Store record documents separate from documents used for construction.

D. Record information concurrent with construction progress, not less than weekly.

E. Specifications: Legibly mark and record, at each product Section, description of actual products installed, including the following:
   1. Manufacturer's name and product model and number.
   2. Product substitutions or alternates used.
   3. Changes made by Addenda and modifications.

F. Record Drawings: Legibly mark each item to record actual construction as follows:

1. Include Contract modifications such as Addenda, supplementary instructions, change directives, field orders, minor changes in the Work, and change orders.
2. Include locations of concealed elements of the Work.
3. Identify depth of buried utility lines and provide dimensions showing distances from permanent facility components that are parallel to utilities.
4. Dimension ends, corners, and junctions of buried utilities to permanent facility components using triangulation.
5. Identify and locate existing buried or concealed items encountered during Project.
6. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
7. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
8. Field changes of dimension and detail.
9. Details not on original Drawings.

G. Submit marked-up paper copy documents to Engineer with claim for final Application for Payment.

1.13 SPARE PARTS AND MAINTENANCE PRODUCTS

A. Furnish spare parts, maintenance and extra products in quantities specified in individual specification sections.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION

3.1 EXAMINATION

A. Each Contractor shall verify grades, lines, levels, locations, and dimensions as shown on the Plans and in the specification details, and shall report errors or inconsistencies to the Engineer before commencing work. By the act of starting work, each Contractor implies his acceptance of the data presented on the Plans and in the details, and agrees that he can construct the project as shown on the Plans as specified.

B. Each Contractor shall obtain complete data at the site and inspect surfaces that are to receive this work before proceeding with ordering of materials or actual construction work. The Contractor(s) shall be solely responsible for the accuracy of measurements and layout of the work. The Contractor(s) shall make good any errors or defects due to faulty measurements taken, information obtained, improper layout, or failure to report discrepancies.

C. The Contractor(s) shall notify the Engineer in writing in case of unsuitable conditions, defective substrates, or discrepancies between existing conditions and the Contract Documents. Starting of work shall imply acceptance of the conditions. Removal and replacement of work applied to defective surfaces shall be done at the expense of the Contractor.

D. Examine and verify specific conditions described in individual Specification Sections.

E. Verify that utility services are available with correct characteristics and in correct locations.

3.2 EXECUTION

A. Comply with manufacturer's installation instructions, performing each step in sequence. Maintain one set of manufacturer's installation instructions at Project Site during installation and until completion of construction.

B. When manufacturer's installation instructions conflict with Contract Documents, request clarification from Engineer before proceeding.

C. Verify that field measurements are as indicated on approved Shop Drawings or as instructed by manufacturer.

D. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.
   1. Secure Work true to line and level and within specified tolerances, or if not specified, industry-recognized tolerances.
   2. Physically separate products in place, provide electrical insulation, or provide protective coatings to prevent galvanic action or corrosion between dissimilar metals.
   3. Exposed Joints: Provide uniform joint width and arrange to obtain best visual effect. Refer questionable visual-effect choices to Engineer for final decision.

E. Allow for expansion of materials and building movement.

F. Climatic Conditions and Project Status: Install each unit of Work under conditions to ensure best possible results in coordination with entire Project.
   1. Isolate each unit of Work from incompatible Work as necessary to prevent deterioration.
   2. Coordinate enclosure of Work with required inspections and tests to minimize necessity of uncovering Work for those purposes.

G. Mounting Heights: Where not indicated, mount individual units of Work at industry recognized standard mounting heights for particular application indicated.
   1. Refer questionable mounting heights choices to Engineer for final decision.
   2. Elements Identified as Accessible to Handicapped: Comply with applicable codes and regulations.

H. Adjust operating products and equipment to ensure smooth and unhindered operation.

I. Clean and perform maintenance on installed Work as frequently as necessary through remainder of construction period. Lubricate operable components as recommended by manufacturer.

3.3 PROTECTING INSTALLED CONSTRUCTION

A. Protect installed Work and provide special protection where specified in individual Specification Sections.

B. Provide temporary and removable protection for installed products. Control activity in immediate Work area to prevent damage.

C. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects.

D. Prohibit traffic from landscaped areas.

E. Each Contractor shall assume the responsibility for the protection of his finished construction until acceptance by the Owner. Any damage occurring to completed work before acceptance by the Owner shall be repaired and restored by the Contractor who completed that work at the Contractor's expense.

F. When the work is completed, each Contractor shall promptly cleanup the project site of stones, dirt, and rubble created by their construction operations. This cleanup shall be done in a timely manner so that any Contractor whose operations follow this can begin work as soon as possible. The stones, dirt, and rubble shall be disposed of in a lawful manner off the project site. If a Contractor does not remove rubbish or clean the project site as specified, the Owner reserves the right to have the cleanup work done by others and the cost will be deducted from monies due the Contractor.

END OF SECTION 01 70 00

DIVISION 03
CONCRETE

SECTION 03 30 01 - CAST-IN-PLACE CONCRETE - MUNICIPAL

PART 1 - GENERAL

1.1 SUMMARY

A. Description of Work Covered by This Section
   1. This section establishes the specifications by which the Contractor shall abide in supplying and placing concrete. Such concrete shall be Portland cement concrete composed of a mixture of an air entraining type Portland cement, fine, and course aggregates, and water. Admixtures may be added to achieve a desired result provided they are first approved by the Engineer and provided such admixture does not adversely affect the strength and durability of the concrete.
   2. The materials for each class of concrete shall be apportioned according to Part 2 and Section 3.2, Table 1. The Contractor shall use Class BB concrete if the exact use is not indicated in the Table or if the class is not specified elsewhere on the Plans or in these specifications.

B. Cost of Testing
   1. The cost of the tests, including materials, transportation, and reports, shall be paid for by the Contractor, except for initial base compaction tests.

1.2 REFERENCE STANDARDS

A. American Concrete Institute

B. ASTM International

C. American Association of State Highway and Transportation Officials

PART 2 - PRODUCTS

2.1 MATERIALS AND EQUIPMENT

A. Cement
   1. The cement used shall be air entraining Portland cement, ASTM C150, Type IA. When high early strength is specified, Type IIIA shall be used.

B. Aggregates
   1. All aggregates used shall comply with ASTM C33. Aggregate shall consist of clean, hard, durable sand and crushed stone, fine gravel or crushed gravel. Fine aggregate shall conform to the following grading requirements:

Sieve Size	Percent Passing, by weight
⅜-inch	100
No. 4	90-100
No. 16	45-80
No. 50	10-30
No. 100	2-10

2. Course aggregate shall meet the following grading requirements:

	Percent Passing, by weight	
Sieve Size	No. 1	No. 2
2-inch	-	100
1½-inch	-	90-100
1-inch	100	20-55
¾-inch	90-100	0-15
⅜-inch	20-55	0-5
No. 4	0-10	-
No. 8	0-5	-

3. Of the total coarse aggregate, all shall be No. 1, or there shall be a mixture of No. 1 and No. 2, such that 35 to 65 percent is No. 1, and the remainder No. 2.
4. The ratio of coarse aggregates to fine aggregates shall not be less than 1:1, or more that 2:1, by weight.

C. Water
1. Mixing water shall be free of oil, acid, excessive alkalinity, organic matter, and salts.

D. Admixtures
1. Admixtures shall be used only when specified or with the written permission of the Engineer, and they shall be used in strict accordance with the manufacturer's instructions. Care shall be exercised to assure that the admixture does not increase or decrease the air content outside of allowable limits.

E. Reinforcing Steel
1. Reinforcing steel shall be ASTM A615, Grade 60, new billet steel bars. The Contractor shall provide metal spacers to support the reinforcing steel and to insure that displacement of the steel during the placement of concrete will not occur.

F. Concrete Mixture
1. The concrete mixture shall be proportioned in accordance with the requirements of Section 3.2, Table 1.

PART 3 - EXECUTION

3.1 CONSTRUCTION

A. Preparation
1. Surfaces that will be in contact with the new concrete shall be prepared as follows:
   - Forms shall be wetted with light oil and the subgrade shall be sprinkled with water.
   - Old concrete and adjacent structures shall be separated from new pours with ½-inch asphalt impregnated felt, as specified under Subsection B.
   - All reinforcing steel shall be positioned to provide a minimum of 1½-inch concrete cover.
2. Concrete shall not be placed around castings, frames, joints, and other embedded fixtures until they have been accurately adjusted and set to the required alignment and grades. Before placing of concrete, castings, frames, and embedded metal, fixtures shall be painted on their contact surfaces with a heavy coat of asphaltic mastic or separated from the concrete with expansion joint material.

B. Joints
1. Expansion joints shall consist of ¾-inch asphalt impregnated felt or other approved expansion joint fillers placed the full depth of the concrete.
2. Contraction joints shall consist of a slot or groove, at least 1-inch in depth and ¼-inch wide, constructed in a manner approved by the Engineer.

C. Mixing Concrete
1. If "ready mix" concrete is used, it shall be produced, delivered, and handled in accordance with the requirements of the most recent edition of the State of Wisconsin Department of Transportation Standard Specifications for Highway and Structure Construction. The concrete shall be deposited at the job site within one (1) hour after introduction of water into the mix. Care shall be taken in transferring concrete from the truck or mixer to avoid segregation of aggregates in the mixture. The concrete shall not be diluted with water to make it more fluid after slump tests have been taken.

D. Inspection
1. Before placing concrete, the Contractor shall notify the Engineer for inspection and approval of reinforcing steel, if any.

E. Placing Concrete
1. The concrete shall be deposited on the subgrade in a manner requiring as little re-handling as possible. Necessary hand spreading shall be done with shovels, not with rakes. Workers shall not walk in the concrete with boots coated with earth.
2. Sufficient spading, rodding, and mechanical vibrating shall be provided to ensure concrete flow into the smallest corners, under pipes, and all places where concrete will not readily flow. The finished concrete shall be watertight and shall be devoid of honeycomb.
3. Placing of concrete shall be continuous between transverse joints without the use of intermediate bulkheads. In case a temporary shutdown is required, the concrete at the unfinished end of slabs shall be covered with wet burlap. When delays are necessary and they are of such length that the concrete deposited will attain its initial set, or if any

interruption in the concrete placing operations of more than thirty (30) minutes occurs, a joint shall be installed in accordance with the provisions of subsection B.

4. Batches shall be dumped so that the concrete will not displace or disarrange the joint installations. The concrete shall be shoveled into place against the expansion joints or other joint installations that might otherwise be displaced or disarranged by concrete flowing against them. The concrete shall be placed simultaneously against both sides of intermediate joint installations.
5. Any rock pockets or voids found after the forms are removed shall be filled immediately with a well-mixed grout composed of one (1) part Portland cement and three (3) parts of fine aggregate and the grout shall then be finished to the true surface of the concrete.
6. Except when authorized in writing by the Engineer, concrete shall not be poured or cast when the air temperature in the shade away from artificial heat falls below 40º Fahrenheit. During the season of the year when freezing temperatures can be expected or when the atmospheric temperature are forecast to drop below 40º Fahrenheit within the 24 hours following the pour, curing of concrete may be omitted and the newly laid concrete shall be protected by covering with a layer of impermeable paper or plastic. When the temperature is forecast to drop below 22º Fahrenheit, the plastic shall be covered with not less than 12 inches of loose dry hay or straw. The covering shall be retained in place for a period of 10 days.
7. Neither salt nor chemical admixtures shall be added to the concrete to prevent freezing.

F. Testing Requirements

1. The Contractor shall conduct tests, at the Contractor's cost, on the proposed concrete mixture to determine the slump, entrained air content, compressive strength, or other appropriate criterion, to determine compliance with these specifications.
2. Tests for slump and air entrainment shall be made before placement of the concrete. Testing shall be done under the supervision of the Engineer or other Owner's representative. Failure to meet the slump or air entrainment requirements of Subsection 3.2, Table 1 may result in rejection of the load.
3. The concrete shall be subjected to compressive strength tests. The Contractor shall supply the standard cylinders and the Engineer or other Owner's representative may fill the cylinders or may require the Contractor to do so. Three (3) cylinders, one for a compressive strength test at seven (7) days and two (2) for compressive strength tests at twenty-eight (28) days shall be cast for each test. One test is required for each twenty five (25) cubic yards poured in each day, and one for each multiple of twenty five (25) cubic yards.
4. Test procedures shall be according to ASTM C31, C39, C143, and C172. The choice of the testing laboratory shall be subject to the Engineer's approval.
5. Initial Proctor or field density tests to determine the adequacy of compaction of the subgrade or base materials, if deemed necessary by the Owner, shall be conducted at the Owner's expense. If the tests show that satisfactory compaction has not been obtained the Contractor shall, at its own expense, re-compact the areas designated by the Engineer and obtain compaction tests from an independent laboratory at his own cost demonstrating that satisfactory compaction has been obtained.

G. Finishing

1. The surface of the concrete shall be thoroughly floated after the concrete has been struck off. After the concrete has begun to set up, the Contractor shall lightly broom the surface of walks, pavements, curb and gutter and driveways to create a grain perpendicular to the direction of vehicle or pedestrian travel. Edges shall be neatly trimmed with a ¼-inch radius-edging tool. Any honeycombed areas shall be pointed with mortar.

H. Curing

1. All exposed concrete slabs and formed structures above grade shall have provisions to prevent loss of moisture for at least 24 hours after placement. Methods to prevent loss of moisture may include covering with plastic sheets, constant wetting of the surface with water, covering with curing paper, or application of an approved commercial curing compound conforming to AASHO Designation M148, Type 2. The rate of application of such a compound shall be not more than two hundred (200) square feet per gallon of compound. The compound shall be applied in accordance with manufacturer's recommendations.

Concrete Classifications

Maximum Water Gallons Cubic Yd.	Air Content Percent By Volume	Slump Inches	Minimum Compressive Strength P.S.I.	Uses
32	5-8	1-3	2,000 (3 Days)	High Early Strength, Special Construction, Pavement
33	5-8	1-3	3,500 (28 Days)	Curbs, Walks, Open Channels, Walls
30	2-4	1-4	3,000 (28 Days)	Manhole, Bases, Envelopes, Cradles
24	2-4	1-4	2,000 (28 Days)	Pavement Base

Maximum water contents include aggregate moisture.

I. Concrete Waste Management

1. General

a. This work consists of containment, collection, storage and proper disposal of concrete wastes generated by saw cutting or grinding of existing concrete pavements or waste run-off generated during construction of new concrete pavements, particularly exposed aggregate surfaces. Concrete wastes typically are strongly alkaline and may contain other contaminants that can harm plants and are particularly harmful if allowed to enter streams, lakes wetlands or other water bodies through the storm sewer system.

b. Contractor is alerted that there are local, state and federal regulations governing the handling and disposal of hazardous materials and this Special Provision in no way relieves the Contractor of any responsibility to comply with such regulations. The intent is to provide more specific guidelines for management of concrete wastes on this project and provide a basis of payment for work associated with specific management measures properly implemented.

2. Materials

a. Contractor may choose appropriate materials to suit his methods of management of wastes with the following minimum requirements. Pre-fabricated washout containers shall be in sound condition and watertight. Site fabricated containment structures shall be constructed below grade if feasible. If constructed above grade they shall be of sturdy materials and designed to provide a minimum of 6 inches of freeboard based on the volume of liquid wastes to be generated between clean-outs. Structure shall be lined with a waterproof plastic sheeting of minimum 10-mil

thickness that has no holes or tears. Above grade structures shall have a double layer lining.

b. Inlet liners used to convert an existing storm inlet into a containment structure shall be shop fabricated and shall consist of a heavy-duty waterproof lining fitted to the inside of a commercially manufactured geotextile sediment trap. The completed inlet containment structure shall be sound and watertight to prevent any leaching into the storm sewer system, and shall be approved by the Engineer prior to accepting any concrete waste water. NOTE: a geotextile sediment trap by itself is not acceptable as the leaachate continues to be highly alkaline and contain dissolved contaminants.

J. Construction Methods

1. If conditions are such that debris and slurry from sawcutting and grinding operations will remain on pavements and not run off into gutters, they may be allowed to dry in place and be cleaned from pavement by sweeping or vacuum equipment. Such wastes shall not be allowed to remain on pavements beyond the end of a day's work.
2. Slurries from cutting or grinding or wash water from exposed aggregate construction may be directed to exposed (unpaved) areas of the grade provided:
   a. Such areas are below the surface drainage grade and will not run off into watercourses, gutters, inlets or storm sewers
   b. Such areas are planned for pavement or other uses, such that residue following evaporation / percolation will not adversely impact vegetation
   c. Disposal area is approved by the Engineer prior to use.
3. If it is not practical to direct slurry to an appropriate unpaved disposal area it may be directed to a street gutter provided sand bags or other devices are used to contain the slurry on the pavement and minimize the distance the slurry travels. Contractor shall remove such slurry or residue from the pavement prior to the end of each work day by vacuum systems or other methods. Slurry may be pumped to an approved containment structure for on-site storage.
4. On-site containment structures shall be emptied on a periodic basis, such that they do not exceed their design capacity, including required freeboard. Contractor shall remove contaminated liquids from the site, using trucks fitted with water-tight gaskets to prevent leakage, or other similar methods. Wastes shall be properly disposed of off-site, in accordance with applicable laws and regulations.
5. If it is not practical to construct or direct slurry to an above-grade containment structure, the contractor may utilize a storm inlet for containment under the following conditions:
   a. There is no significant chance of precipitation, flows from upstream pipe connections or other reasons requiring the inlet to function for storm water drainage during the period it is to be used for containment.
   b. The Construction Engineer provides prior written approval for each inlet proposed Contractor fabricates and properly installs a waterproof liner for each inlet used, in accordance with the requirements herein.
   c. Contractor maintains inlet liners in good condition and periodically empties such structures and disposes of wastes as provided for on-site containment structures.
   d. Contractor completely removes liner and all wastes and restores inlet to its prior functioning condition after its use.

END OF SECTION 03 30 01

DIVISION 31
EARTHWORK

SECTION 31 22 13 – ROADWAY EXCAVATION & GRADING

PART 1 - GENERAL

1.1 SUMMARY

A. Contractor Responsibilities
   1. The Contractor shall complete excavation, backfill, embankment, compaction and grading as necessary to prepare the roadway or street for application of base course and pavement as shown on the cross-sections and details of the Plans. The Contractor shall legally dispose of all excess or unsuitable materials. The Contractor shall blend private lawns, driveways, alleys and intersecting streets.

B. Section Includes:
   1. Excavating topsoil.
   2. Excavating subsoil.
   3. Excavating for roads, street and parking areas.
   4. Excavating for landscaping.
   5. Fill under slabs-on-grade.
   6. Fill under paving.
   7. Compaction of Fill
   8. Grading and compacting site for slabs-on-grade, paving and landscaping.

1.2 REFERENCES

A. American Association of State Highway and Transportation Officials

B. ASTM International

C. Local utility standards when working in the vicinity of utility lines.

1.3 SUBMITTALS

A. Section 01 33 00 - Submittals: Requirements for submittals.

B. Product data: Submit data for any geotextile fabric used.

C. Materials source: Submit name of imported materials suppliers.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Topsoil: As specified in Section 32 05 00.

B. Embankment materials: Materials used for embankment shall not contain logs, stumps, brush, perishable materials, frozen lumps of soil, or rocks or pieces of pavement of such size or conformation that they would interfere with proper compaction. Materials to be incorporated in the top 18 inches of earth embankments shall be free of stones, or pieces of pavement, which are greater than six (6) inches in any dimension.

C. Crushed aggregate: As specified in Section 32 05 00.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify survey bench mark and intended elevations for the Work are as indicated on Drawings.

3.2 PREPARATION

A. Call Local Utility Line Information service not less than three working days before performing Work.
   1. Request underground utilities to be located and marked within and surrounding construction areas.

B. Identify required lines, levels, contours, and datum.

C. Notify utility companies to remove or relocate conflicting utilities.

D. Protect utilities to remain from damage.

E. Protect plant life, lawns, and other features remaining as portion of final landscaping.

F. Protect bench marks, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.

3.3 CLEARING & GRUBBING

A. Contractor shall remove and legally dispose of existing trees, shrubs, fences pavements and other obstacles within the construction area where removal of such obstacles is necessary to complete the work and as shown on the plans. Remove only those trees and shrubs marked for removal on the plans.

B. The Contractor shall protect remaining trees and shrubs from scarring or from injury of any type. The excavation operations shall not disturb the original ground surface within one foot of trees or shrubs or within twice the diameter of trees, whichever is greater. Roots which may be exposed as a result of excavation shall be cut cleanly and covered with soil with high humus content. When necessary, or when required by the Plans or the Special Conditions, tree wells shall be constructed to protect trees and shrubs from embankments. In such cases, tree well design shall be as shown on the Plans or as approved by the Engineer.

3.4 TOPSOIL EXCAVATION

A. Excavate topsoil from areas to be further excavated, re-landscaped or regraded, without mixing with foreign materials for use in finish grading.

B. Do not excavate wet topsoil.

C. Stockpile on site to depth not exceeding 8 feet and protect from erosion.

D. Excess topsoil not needed for reuse shall be stockpiled as directed by the Owner.

3.5 SUBSOIL EXCAVATION

A. Definitions

1. Common excavation shall be defined as the excavation of all materials that can be excavated, transported, and unloaded by the use of heavy ripping equipment and wheel tractor scrapers with pusher tractors or that can be excavated and dumped into place or loaded onto hauling equipment by means of excavators having a rated capacity of one (1) cubic yard equipped with attachments (such as shovel, bucket, backhoe, dragline, or clam shell) appropriate to the character of the materials and the site conditions. For the purposes of this classification heavy ripping equipment shall be defined as a rear-mounted, heavy duty, single tooth, ripping attachment mounted on a tractor having a power rating of 200-300 net horsepower, at the flywheel, such equipment being in well-maintained condition. Pusher tractor shall be defined as a track-type tractor having a power rating of 200-300 net horsepower, at the flywheel, equipped with appropriate attachments and being in well-maintained operating condition.
2. Rock excavation shall be defined as the excavation of all hard, compacted or cemented materials, the excavation of which requires blasting or use of excavators larger than defined for common excavation. Such rock excavation shall include all hard, solid rock ledges, bedded deposits or any other material as firmly-cemented as to present all the characteristics of solid rock. The excavation and removal of isolated boulders or rock fragments larger than one (1) cubic yard in volume encountered in materials otherwise conforming to the definition of common excavation shall be classified as rock excavation. Rock excavation will merit extra payment unless a separate bid item has been provided or unless elsewhere in the specifications such rock excavation is declared incidental to the work. Existing asphaltic or concrete pavements, curb & gutter, sidewalk and utility structures shall be classified as common excavation. The presence of isolated boulders or rock fragments larger than one (1) cubic yard in size will not, in itself, be sufficient cause to change the classification of surrounding material.

B. The Contractor shall excavate as shown on the Plans and legally dispose of all excess materials to allow construction of the roadway. Earthwork shall include, but not be limited to, excavation within the roadway; embankments with the roadway; excavation and embankments to create intersections, ditches, channels, waterways and dikes; grading of the roadway subgrade, entrances and approaches; and other such activities outside the right-of-way as may be specifically designated on the Plans. Earthwork shall include the removal and reuse or satisfactory disposal of existing pavements and base courses, masonry or concrete structures, and other structures that may be within the right-of-way.

C. Monuments from land surveys which are shown on the plans or which are clearly visible in the field and which are in the path of the work shall be carefully protected from movement. If the Contractor feels that removal is necessary he shall notify the Engineer at least 48 hours in advance of such removal. If the Engineer concurs that removal is necessary, the municipality will assume the cost of resetting those monuments, unless a bid price is provided in the Bid Proposal or unless elsewhere in the specifications it is stated that removal and replacement of monuments is incidental to the bid price(s). Monuments that the Contractor moves due to failure to exercise reasonable precautions or proper construction techniques, or for which he has failed to notify the Engineer sufficiently in advance, shall be replaced at the Contractor's cost.

D. The Contractor shall notify utility companies of any interfering structures or cables and shall arrange for those structures or cables to be moved, if necessary. The project plans show the approximate location and size of sewers, drains, culverts, gas mains, water mains, electric, and telephone conduits and other underground structures or utilities, as such locations and sizes are available to the municipality, or as surface markings indicate their existence. The Contractor shall arrange with the utility companies for exact location of utilities and for necessary relocations or modifications of interfering utilities. The cost of arranging such relocations or modifications, and the cost of any “downtime” resulting from delays or changes to the Contractor’s work schedule as a result of waiting for a private utility (gas, electric, telephone, cable TV) to make the relocation or modifications shall be incidental to the Contractor's bid. The Contractor shall use caution in excavating and trenching so that the exact location of underground structures, both known and unknown, may be determined; the Contractor shall be held responsible for the repair of such structures when broken or otherwise damaged during construction. When the Owner permits the Contractor to make a change in the project to avoid utility relocation, the Engineer shall determine whether the change constitutes extra work as defined in the General Conditions. Such relocations shall not be cause for extension of contract time of completion.

E. The Contractor shall also, at least one week in advance of his operations, notify private property owners who have structures or who have planted trees, shrubbery, or flowers in the right-of-way so that the private property owners may remove and reinstall such features if they so wish. The Contractor shall be responsible for removal, temporary relocation, and replacement of all mail and newspaper delivery boxes. The Contractor shall contact the local postmaster to determine acceptable locations and heights of such boxes. Replacement of such boxes shall be in locations acceptable to the property owner.

F. Deposits of frost heave material, unstable soils such as clay or muck, soil containing considerable amounts of organic matter, or other undesirable foundation material shall be excavated as directed by the Engineer. The Contractor shall notify the Engineer of such questionable materials and obtain the Engineer's approval prior to excavating them. Failure to notify the Engineer of such questionable materials shall be cause for the forfeiture of right to extra payment.

G. The Contractor shall scarify the subgrade to such depth as necessary to accomplish grading and shaping operations as specified in Subsection 3.5 of this section.

H. The Contractor shall conduct earthwork operations in such a manner as to avoid removing or disturbing any material or structure outside of the designated construction limits, as shown on the Plans or as defined in the Special Conditions. Should any such material or structure be removed or disturbed the Contractor shall assume the expense of restoring it to its original condition.

3.6 FILLING

A. Compact subgrade to density requirements for subsequent backfill materials.

B. Cut out soft areas of subgrade not capable of compaction in place.

C. Fill areas to contours and elevations with unfrozen materials.

D. The Contractor shall, if possible and feasible, utilize all suitable excavated material for backfill and embankment within the roadway in conformity with the lines, grades, cross-sections and dimensions shown on the Plans or in these Specifications or at other places shown on the Plans. When excavated materials are insufficient or unsuitable the Contractor shall furnish materials from borrow pits approved by the Engineer. Before use of borrow materials, the Contractor shall notify the Engineer so that the materials may be inspected.

E. Backfill or embankments shall be made in successive uniform layers not exceeding 12 inches in depth. Each layer shall cover the entire area and shall be compacted before additional layers are placed. Prior to compaction each layer shall be worked to break up clods over six (6) inches in any dimension and to obtain uniform moisture content. In the case of filling on steep slopes construct the fill in such layers as can be achieved by the equipment until the fill can be constructed in 12 inch layers. Each layer shall be compacted to 95 percent of maximum density as measured by AASHTO Designation: T99, Method C, with replacement of the fraction of material retained on the ¾-inch sieve with No. 4 to ¾-inch material.

F. Maintain optimum moisture content of fill materials to attain required compaction density.

3.7 GRADING AND SHAPING

A. The Contractor shall shape the subgrade for the full width of the roadbed in advance of base or surface laying operations. The grade of the completed course shall at all points be within + or - 0.04 foot of the grade shown on the Plans, as measured at the curb line or the edge of the pavement, but without more than 5 percent net over-excavation or under-excavation of the subgrade materials for the project. Subgrade need not be crowned between measurement points at opposite edges of the roadway. He shall maintain the subgrade in a firm smooth condition, removing any ruts or surface irregularities produced by hauling equipment or other traffic until final acceptance or until laying of the subbase or base course. The subgrade shall have a compaction of 95 percent of maximum density as measured by AASHTO Designation: T99, Method C, with replacement of the fraction of material retained on the ¾ inch sieve with No. 4 to ¾ inch material. Any soft or yielding places, holes or other defects which may develop in the subgrade by reason of traffic, hauling, poor drainage, unstable materials, or from any other cause shall be corrected before acceptance or before the base or surface course is placed thereon.

B. Unless otherwise approved by the Engineer, the subbase shall be compacted before any crushed aggregate is added in other to minimize crushed aggregate being forced down into the subbase.

C. All intersecting road, approaches, entrances and driveways shall be graded as shown on the Plans or as designated in the field by the Owner's Authorized Representative.

D. Make grade changes gradual. Blend slope into level areas.

E. During construction, the Contractor shall assure that all ditches and channels are drained at all times by keeping the excavation areas and embankments sloped to the approximate section of the final earth grade. If existing surface drainage must be interrupted alternate drainage shall be provided.

F. Construction in and adjacent to flowing streams shall be performed to avoid washing, sloughing or deposition of materials into the channel which may obstruct or impair stream flow or which may result in contamination and/or silting of the waterway. The Contractor shall comply with any requirements or permits from the Owner or obtained by the Owner from the Department of Natural Resources and shall use erosion control measures in the locations shown on the Plans or as specified elsewhere in the specifications.

G. The Contractor shall take precautions to preserve, protect, and continue service of all existing tile drains, sewers and other subsurface utilities and shall repair any damage to drains, sewers, other utilities or surface features.

3.8 TOLERANCES

A. Top Surface of Subgrade: Plus or minus 1 inch from required elevation.

3.9 FIELD QUALITY CONTROL

A. Perform laboratory material tests in accordance with AASHTO T 99.

B. Perform in place compaction tests in accordance with the following:
   1. Density Tests: ASTM D2922.
   2. Moisture Tests: ASTM D3017.

C. A test-roll of the graded and compacted subbase will be required. This test-roll shall be performed with a fully loaded tri-axle dump truck (60,000 pound minimum total weight) with the tag-wheels lifted, provided by the Contractor. The test-roll shall be performed on the entire length and width of the subbase in the presence of an Engineer. Any deflection of the sub-base, wheel rutting, or cracking of the subbase will signify a failure of the subbase. The Engineer shall make the determination of subbase course acceptance or failure. In the case of subbase failure, the Engineer shall determine the area and depth of undercut or other corrective action.

D. When tests indicate Work does not meet specified requirements, remove Work, replace and retest.

END OF SECTION 31 22 13

SECTION 31 25 00 - EROSION AND SEDIMENT CONTROL

PART 1 - GENERAL

1.1 SUMMARY

A. Description of work covered by this Section

B. This section describes the requirements for control of erosion on construction sites. The Contractor shall provide the necessary materials, equipment, and labor to control erosion by the methods specified herein. If no specific quantities are shown on the Plans, the Contractor shall use whatever quantities are necessary to prevent sediment transport into adjacent storm water conveyances or streams. Other similar products may be used only with the prior approval of the Engineer. All work under this section shall be done in conformance with the requirements of NR 151 of the Wisconsin Administrative Code and Wisconsin Department of Natural Resources best management practices (BMPs).

C. Section Includes:
1. Temporary Grass Seed
2. Straw Mulch
3. Filter Fabric
4. Sediment Control (Silt) Fence
5. Double Sediment Control Barrier
6. Construction Entrance Material
7. Straw or Straw/Coconut Fiber Erosion Control Mat
8. Coconut Fiber Erosion Control Mat
9. Erosion Control Polymer (Soil Stabilizer)
10. Temporary Ditch Checks (Wattles)
11. Diversion Channels
12. Rock Energy Dissipator
13. Sediment Traps
14. Dust Control

1.2 REFERENCES

A. American Association of State Highway and Transportation Officials

B. ASTM International

C. Wisconsin Department of Natural Resources –(WDNR) Wisconsin Administrative Code NR-151

D. Wisconsin Department of Transportation (WisDOT Standards) Standard Specifications for Highway and Structure Construction available on the WisDOT website.

1.3 SUBMITTALS

A. Refer to Section 01 33 00 – Submittals

B. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

1.4 CLOSEOUT SUBMITTALS

A. Section 01 70 00 – Execution Requirements and Project Closeout: Requirements for submittals.

1.5 QUALITY ASSURANCE

A. Perform Work according to these Specifications and all applicable Local, State and Federal regulations

1.6 ENVIRONMENTAL REQUIREMENTS

A. Perform work in accordance the requirements of WDNR NR 151.

PART 2 - PRODUCTS

2.1 MATERIALS, EQUIPMENT AND PRACTICES

A. Erosion Control Materials

1. Temporary Grass Seed: Temporary grass seed shall be annual ryegrass, annual oats or winter wheat, depending upon the time of year as set forth in Part 3. Grass seed shall be delivered to the site in bags, tagged, or labeled to show the percentage of purity and germination. The seed shall have been tested by a recognized seed-testing laboratory within one (1) year before the date of seeding and shall conform to the latest laws of the U.S. and the State of Wisconsin. Upon request, the Contractor shall furnish to the Engineer copies of the test results.
2. Straw Mulch: Unless otherwise specified, mulch shall be straw, reasonably free of grain, weed, seed, and mold. Mulch materials shall not contain excessive moisture that might prevent feeding through a mulch blower machine. Other fibers may be used only upon approval by the Engineer.
3. Filter Fabric: Filter fabric for inlet bags shall meet the requirements of the Wisconsin Department of Transportation Product Acceptability List for Inlet Protection, Type D, or equal, and shall be ultraviolet stabilized.
4. Sediment Control (Silt) Fence: Sediment control fabric shall be woven or non-woven polyester, polypropylene, stabilized nylon, polyethylene, or polyvinylidene chloride. For non-woven fabric the contractor may use needle punched, heat bonded, resin bonded, or combinations of all 3. Sediment control fence shall be made of Mirafi 100 sediment control fabric, backed by industrial polypropylene netting, manufactured by Dominion Textile Company, or equal. For other fabrics contractor shall submit a certificate of compliance certifying that the geotextile conforms to the latest version available on the website of the Wisconsin Department of Transportation Standard Specification for Highway and Structure Construction, Section 628. Posts used to support the fabric shall be at least two (2) inch by two (2) inch in cross-section.
5. Double Sediment Control Barrier: Double sediment control barrier shall consist of a combination of sediment control fence and straw or hay bale erosion control barrier, with

the fence being installed on the upstream side of the bales. The bales used in the double sediment control barrier shall be either hay or straw, have rectangular surfaces, and be tightly bound with twine, not wire. The material in the bales shall be reasonably free of grain, weed, seed, and mold, and shall be dry and suitable for the purpose intended.

6. Construction Entrance Material: Material used in construction entrances shall be three (3) inch to six (6) clear crushed stone. All material shall be retained on a 3-inch sieve.
7. Straw or Straw/Coconut Fiber Erosion Control Mat: The straw or straw/coconut fiber erosion control mat shall be a biodegradable machine-produced mat from the latest edition of the Wisconsin Department of Transportation Product Acceptability List for Erosion Mat, Class I, Type B
8. Coconut Fiber Erosion Control Mat: The coconut fiber erosion control mat shall be a machine-produced 100% biodegradable mat with a 100% coconut fiber matrix listed under the latest edition of the Wisconsin Department of Transportation Product Acceptability List for Erosion Mat, Class II, Type B. The erosion mat shall be of consistent thickness with the coconut fiber evenly distributed over the entire area of the mat. The mat shall be covered on the top and bottom with photodegradable woven netting. The netting shall consist of photodegradable polypropylene square mesh openings of ⅝ inch to 3/4 inch dimension on each side. The blanket shall be sewn together with photodegradable polypropylene thread.
9. Erosion Control Polymer (Soil Stabilizer): Erosion control polymer shall be from the latest edition of the Wisconsin Department of Transportation Product Acceptability List for Soil Stabilizers, Type B. The polymer shall have no odor. The polymer shall be protected from ignition sources and contact with strong oxidizing agents and hear shall be avoided.
10. Temporary Ditch Checks (Wattles): Temporary ditch checks, also called wattles, shall be from the latest edition of the Wisconsin Department of Transportation Product Acceptability List for temporary ditch checks.

2.2 ROCK AND GEOTEXTILE MATERIALS

A. Materials provided under this section shall be in conformance with the requirements of NR 151 of the Wisconsin Administrative Code and Wisconsin Department of Natural Resources best management practices (BMPs).

B. Rock : Sound, hard and angular shape; well graded; without shale seams, structural defects and foreign substances; with width and thickness greater than one third its length; minimum specific gravity of 2.5, as determined in accordance with AASHTO T-180 and ASTM C-127

2.3 CONCRETE MATERIALS

A. Furnish according to WisDOT Standards.

B. Furnish according to WDNR NR-151 and WisDOT Standards: As specified in Paragraph 3.2 – Seeding

C. Mulch: As specified in Paragraph 3.3 – Application of Straw Mulch

PART 3 - EXECUTION

3.1 CONSTRUCTION

A. Install Work according to WDNR NR-151 Standards for Site Stabilization
   1. Incorporate erosion control devices indicated on the Drawings into the Project at the earliest practicable time.
   2. Construct, stabilize and activate erosion controls before site disturbance within tributary areas of those controls.
   3. Stabilize any disturbed area of affected erosion control devices on which activity has ceased and which will remain exposed for more than 14 days.
   4. Stabilize diversion channels, sediment traps, and stockpiles immediately.

B. Construct, stabilize and activate erosion controls before site disturbance within tributary areas of those controls.

C. All activities on the site shall be conducted in a logical sequence to minimize the area of bare soil exposed at any one time.

D. All disturbed ground left inactive for seven (7) or more days shall be stabilized by temporary seeding and mulching or by covering, or by other equivalent control measure.

E. Water pumped from the site shall be treated by appropriate controls designed and used to remove particles of 100 microns or greater for the highest dewatering pumping rate. If the water is demonstrated to have no particles greater than 100 microns during dewatering operations, then no control is needed before discharge. Water may not be discharged in a manner that causes erosion of the site or receiving channels.

F. The Contractor shall construct clear stone entrance pads to the construction site and shall take all other possible precautions to prevent sediment from being tracked onto public or private roadways. Any sediment reaching a public or private road shall be removed by street cleaning (not flushing) before the end of each workday and before any rainfall occurs.

G. All storm drain or culvert inlets shall be protected with sediment control fences or equivalent barriers approved by the Engineer.

H. Channelized runoff from adjacent areas passing through the site shall be diverted around disturbed areas when necessary. Sheet flow runoff from adjacent areas greater than 10,000 square feet in area shall also be diverted around disturbed areas. Diverted runoff shall be conveyed in a manner that will not erode the conveyance and receiving channels. (Note: Soil and Conservation Service guidelines for allowable velocities in different types of channels should be followed.)

I. Sediment control fences or equivalent control measures shall be placed along all sideslope and downslope sides of the site where runoff can reach a surface water course, wetland, or as shown on the Plans or specified in the Special Conditions. If a channel or area of concentrated runoff passes through the site and is not diverted, sediment control fences shall be placed along the channel edges to reduce sediment reaching the channel.

J. Any soil or dirt storage piles containing more than ten cubic yards of material should not be located with a downslope drainage length of less than 25 feet to a roadway or drainage channel.

If remaining for more than seven (7) days, they shall be stabilized by mulching, vegetative cover, tarps, or other means. Erosion from piles, which will be in existence for less than seven (7) days, shall be controlled by placing hay bales or sediment control fence barriers around the pile. In-street utility repair or construction soil, or dirt storage piles located closer than 25 feet to a roadway or drainage channel must be covered with tarps or a suitable alternative control must be used if exposed for more than seven (7) days, and storm drain or culvert inlets must be protected with straw bales or other appropriate filtering barriers.

3.2 SEEDING

A. Seeding, where used for erosion control, shall be temporary grass seed as follows:

Before June 15	Annual Oats
June 15 to September 15	Annual Ryegrass
After September 15	Winter Wheat

B. The Contractor shall apply the seed using a hydroseeder, a power-drawn drill, or spreader, or approved blower equipment with an adjustable disseminating device capable of maintaining a constant measurement rate of material discharge that will insure an even distribution of seed and fertilizer. Seed mixture shall be applied at the rates of 3 lbs/1,000 ft^2.

C. Seedbeds shall be maintained in a moist growing condition. When necessary, the Contractor shall soak the seedbed by sprinkling with water.

3.3 APPLICATION OF STRAW MULCH

A. The Contractor shall furnish, haul and evenly apply straw mulch at a rate not less than 1½ tons per acre to a loose depth of one (1) or two (2) inches. Mulch shall be placed loose and open enough to allow some sunlight to penetrate and air to circulate but still cover a minimum of 70% of the soil surface. The mulch spreading equipment shall utilize forced air to blow mulch material onto the seeded area, unless otherwise approved by the Engineer. Where mulch is used, alone, as a temporary cover, the rate of application shall be not less than three (3) tons per acre and shall cover a minimum of 80% of the soil surface.

B. Unless otherwise designated the Contractor shall anchor the straw mulch by crimping so that the mulch is partially embedded in the soil.

3.4 PLACING STRAW OR HAY BALE BARRIERS AS PART OF DOUBLE SEDIMENT CONTROL BARRIER

A. Sufficient bales shall be on the site to create the necessary barriers before the start of groundbreaking operations. The bales shall be stacked and covered with plastic sheeting until required for use.

B. The bales shall be placed with the cut side of the bale downward, in a shallow trench excavated for that purpose. The bales shall be fixed in place using reinforcing rod or steel fence posts extending completely through the bale and driven at least 18 inches into the ground. Two (2) rods or posts shall be placed in each bale, one at each ⅓ point.

C. If a bale in a barrier is wholly or partially destroyed during the course of the project the Contractor shall, at its own expense, replace the bale with a fresh, unused bale.

3.5 CONSTRUCTION OF SEDIMENT CONTROL FENCE

A. Sediment control fence shall be constructed according to the manufacturer's recommendations, the provisions of the Wisconsin Department of Natural Resources Conservation Practice Standard 1056, and generally as follows:

B. Excavate a six inch by six inch (6”x 6”) trench along the upslope perimeter of the fence location

C. Unroll the fencing fabric a section at a time and position the posts against the downslope side of the trench, with the fabric on the upslope side of the posts. Drive the posts into the ground until the support netting is approximately two (2) inches from the trench bottom (the fabric should extend several inches below the netting.)

D. Lay the toe-in flap of fabric onto the undisturbed trench bottom, backfill the trench and tamp the soil down firmly.

3.6 INSTALLING STRAW/COCONUT AND COCONUT FIBER EROSION CONTROL MAT

A. Erosion control mat shall be installed according to the manufacturer’s recommendations and generally as follows:

B. Prepare soil before installing blankets, including any application of fertilizer and seed.

C. Begin at the top of the channel by anchoring the blanket in a six (6) inch deep by six (6) inch wide trench with approximately 12 inches of blanket extended beyond the up-slope portion of the trench. Anchor the blanket with a row of staples/stakes approximately 12 inches apart in the bottom of the trench. Backfill and compact the trench after stapling. Apply seed to compacted soil and fold remaining 12-inch portion of blanket back over seed and compacted soil. Secure blanket over compacted soil with a row of staples/stakes spaced approximately 12 inches apart across the width of the blanket.

D. Roll center blanket in direction of water flow in bottom of channel. Blankets will unroll with appropriate side against the soil surface. All blankets must be securely fastened to the soil surface by placing staples/stakes in appropriate locations as recommended by the manufacturer.

E. Place consecutive blankets end over end (shingle style) with a four (4) to six (6) inch overlap. Use a double row of staples staggered four (4) inches apart and four (4) inches on center to secure blankets.

F. Full-length edge of blankets at top of side slope must be anchored with a row of staples/stakes approximately 12 inches apart in a six (6) inch deep by six (6) inch wide trench. Backfill and compact the trench after stapling.

G. Adjacent blankets must be overlapped four (4) inches (depending on blanket type) and stapled.

H. A staple check slot is required at 30 to 40 foot intervals. Use a double row of staples staggered four (4) inches apart and four (4) inches on center over entire width of the channel.

I. The terminal end of the blankets must be anchored with a row of staples/stakes approximately 12 inches apart in a six (6) inch deep by six (6) inch wide trench. Backfill and compact the trench after stapling. In loose soil conditions, the use of staples or stake lengths greater than six (6) inches may be necessary to property anchor the blankets.

J. Rock Energy Dissipator: Rock shall be fully fractured to the sizes as noted on the details.

K. Sediment Traps: Sediment traps shall be constructed by the Contractor as necessary to control sediment runoff from the worksite. Locations for all sedimentation basins shall be approved by the Owner or Engineer prior to construction.

L. Sediment Traps: The Contractor shall construct sediment traps similar to the sediment pond requirements.

M. Dust Control: The Contractor shall employ measures to reduce or prevent the surface and air transport of dust during construction. Dust control measures for construction activities include minimization of soil disturbance, applying mulch and establishing vegetation, water spraying, surface roughening, applying polymers, spray-on tackifiers, chlorides and barriers.

3.7 APPLICATION OF POLYMER (SOIL STABILIZER)

A. Polymer shall be evenly applied. Minimum application rates shall be as recommended by the manufacturer. Maximum application rates shall be less than the maximum rates allowed by the Department of Natural Resources, if applicable

3.8 DIVERSION CHANNELS

A. Windrow excavated material on low side of channel.

B. Compact to 95% maximum density.

C. Install Work according to WDNR NR-151 Standards

3.9 ROCK ENERGY DISSIPATOR

A. Excavate to indicated depth of rock lining or nominal placement thickness. Remove loose, unsuitable material below bottom of rock lining, then replace with suitable material. Thoroughly compact and finish entire foundation area to firm, even surface.

B. Lay and overlay geotextile fabric over substrate. Lay fabric parallel to flow from upstream to downstream. Overlap edges upstream over downstream and upslope over downslope. Provide a minimum overlap of 18 inches. Carefully place rock on geotextile fabric to produce an even distribution of pieces, with minimum of voids and without tearing geotextile.

C. Unless indicated otherwise, place full course thickness in one operation to prevent segregation and to avoid displacement of underlying material. Arrange individual rocks for uniform distribution.

3.10 FIELD QUALITY CONTROL

A. INSPECTIONS:

B. Contractor shall be responsible for all inspections of erosion control provisions from the beginning of the project to stabilization of all disturbed surfaces. Inspections of implemented erosion control best management practices must be performed weekly and within 24 hours after a precipitation event of 0.5 inches or greater which results in runoff. Department of Natural Resources form 3400-187 (Construction Site Inspection Report) shall be used. Inspect erosion control devices on a weekly basis and after each runoff event. Make necessary repairs to ensure erosion and sediment controls are in good working order.

3.11 CLEANING

A. When sediment accumulation in sedimentation structures has reached a point one-third depth of sediment structure or device, remove and dispose of sediment.

B. Do not damage structure or device during cleaning operations.

C. Do not permit sediment to erode into construction or site areas or natural waterways.

3.12 MAINTENANCE AND REMOVAL

A. Contractor shall be responsible for maintaining all erosion control items in a functioning manner, replacement (as necessary), and removal of all items once the site has been fully stabilized.

END OF SECTION 31 25 00

DIVISION 32
EXTERIOR IMPROVEMENTS

SECTION 32 05 00 – SOILS AND AGGREGATES AND EXTERIOR IMPROVEMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Description of Work Covered by This Section

B. The Contractor shall provide the necessary soils, aggregates, geotextiles and other materials to construct earthwork, utilities, roadways and structures in the locations and depths shown on the Plans and Specifications.

C. Section Includes:
1. Coarse aggregate materials
2. Fine aggregate materials
3. Nonwoven geotextile material

1.2 GENERAL REQUIREMENTS

A. The Contractor shall provide the necessary materials, equipment and labor to construct, on the prepared road subgrade, a crushed aggregate base course, and shall construct such a base course in the locations and depths shown on the Plans and in these Specifications. Fine grading of the base course to the required tolerances is included in the scope of work under this section.

B. On contracts under which the prepared roadbed or subbase has been substantially completed under a previous contract, any requirements of the specifications shall not be considered presumptive as to the character of the materials which may be encountered on the work to be performed under this section.

C. When a bid proposal form refers to "crushed aggregate" or "crushed aggregate base course" it shall be taken to mean dense graded crushed aggregate base course.

1.3 REFERENCES

A. American Association of State Highway and Transportation Officials

B. ASTM International

C. Wisconsin Department of Transportation (WisDOT) Standard Specifications for Highway and Structure Construction available at the time of bidding on the WisDOT website.

1.4 SUBMITTALS

A. Refer to Section 01 33 00 - Submittals

1.5 QUALITY ASSURANCE

A. Perform work in accordance with these Specifications and all applicable local, State and Federal regulations.

B. Perform Work in accordance with WisDOT Standards.

PART 2 - PRODUCTS

2.1 TOPSOIL MATERIALS

A. Excavated and Reused Topsoil
   1. Graded.
   2. Free of roots, rocks larger than ½-inch, subsoil, debris, large weeds and foreign matter.

B. Imported Topsoil
   1. Friable loam.
   2. Completely free of roots, rocks larger than ½-inch, subsoil, debris, large weeds, foreign matter, atrazine and any other similar chemicals harmful to plant growth.
   3. Reasonably free of weed seeds.
   4. Single screened.
   5. Acidity range (pH) of 5.5 to 7.5.
   6. Containing minimum of 4% and maximum of 25% inorganic matter.

2.2 CRUSHED AGGREGATE CHARACTERISTICS

A. The material used for constructing crushed aggregate base coarse shall be hard, durable particles of virgin crushed stone or virgin crushed gravel and a filler of natural sand, stone sand, or other finely divided mineral matter. Unless specifically allowed in the Bid Proposal recycled materials shall not be used. Oversize material encountered in deposits from which the material is taken shall be removed by screening or shall be crushed to the required sizes. The composite material shall be free from organic matter, shale and lumps or balls of clay and shall meet the gradation requirements specified in Paragraph 2.2 of this section.

B. The right is reserved to prohibit the use of crushed stone from limestone deposits having thinly bedded strata or strata of shale or to reject material from any source where the character of the material will not meet the applicable requirements.

C. The aggregate, including any blended filler, shall have a liquid limit of not more than 25 and a plasticity index of no more than 6, except in the case of aggregates for base course placed between old and new pavements, where the plasticity index shall not exceed 3.

D. At least 45% of the particles of aggregate retained on the No. 4 sieve shall have at least one (1) surface or face produced by the fracture of a larger particle.

E. Aggregate shall have a percentage of wear of not more than 50, as determined by AASHTO Designation: T 96, unless otherwise noted.

F. When the fraction of aggregate retained on the No. 4 sieve is subjected to five cycles of the sodium sulfate soundness test (AASHTO designation T104), the weighed loss shall not exceed 18% by weight.

2.3 DENSE GRADED CRUSHED AGGREGATE MATERIALS

A. Gradation Requirements - ¾-Inch Crushed Aggregate

1. The aggregates shall be well graded between the limits specified and unless otherwise specified, shall conform to the gradation requirements for ¾-inch dense graded base of the State of Wisconsin Department of Transportation Standard Specifications for Highway and Structure Construction, most current edition Specification No. 305.2.2.1, as follows:
2.

Sieve Size	Percent Passing, by weight
1-inch (25 mm)	100
¾-inch (19 mm)	95 - 100
⅜-inch (9.5 mm)	50 - 90
No. 4 (4.75 mm)	35 - 70
No. 10 (2.00 mm)	15 - 55
No. 40 (425 µm)	10 - 35
No. 200(75 µm)	5 - 15

3.
4. If filler is necessary in addition to that naturally present in the base coarse material for meeting the gradation requirement, or for satisfactory binding of the material, it shall be uniformly blended with the base course at the screening plant or on the road. The material obtained for such purpose shall be obtained from sources approved by the Engineer, shall be free from agglomerations or lumps, and shall contain not more than 15% of material retained on a No. 4 sieve.

B. Gradation Requirements - 1¼-Inch Crushed Aggregate

1. Where 1¼-inch base course is specified the aggregate shall be well graded between the limits specified shall conform to the gradation requirements for 1¼-inch dense graded base of the State of Wisconsin Department of Transportation Standard Specifications for Highway and Structure Construction, most current edition, as follows:

	Percent Passing, by weight
1¼-inch (37.5 mm)	95 - 100
1-inch (25.0 mm)	-
¾-inch (19.0 mm)	70 - 93
⅜-inch (9.5 mm)	42 - 80
No. 4 (4.75 mm)	25 - 63
No. 10 (2.00 mm)	16 - 48
No. 40 (425 µm)	8 - 28
No. 200(75 µm)	2 - 12

C. Gradation Requirements – Breaker Run with Fines

1. The aggregate shall be Breaker Run, with fines, well graded between the limits specified, as follows:

Sieve Size		Percent Passing, by weight
3-inch		90 - 100
1½-inch	(37.5 mm)	60 - 85
1-inch	(25.0 mm)	-
¾-inch	(19.0 mm)	40 - 65
⅜-inch	(9.5 mm)	-
No. 4	(4.75 mm)	15 - 40
No. 10	(2.0 mm)	10 - 30
No. 40	(425 µm)	5 - 20
No. 200	(75 µm)	2 - 12

D. Reclaimed, reprocessed or blended asphalt or concrete materials shall not be used as dense graded crushed aggregate materials.

E. By-product materials, such as glass, slag, ash or pottery cull shall not be mixed into the crushed aggregate.

2.4 Open Graded Crushed Aggregate Materials Under Porous Asphalt

A. Gravel Filter Layers - Furnish crushed stone or crushed gravel conforming to Specification Section 02232, except the gradation shall conform to ASTM No. 57, as follows:

Sieve Size	Percent Passing, by weight
1½-inch	95 - 100
½-inch	25 - 60
No. 4	0 - 10
No. 8	0 - 5

B. Aggregate Storage Reservoir - Furnish crushed stone or crushed gravel conforming to Specification Section 02232, except the gradation shall conform to ASTM No. 3, as follows:

Sieve Size	Percent Passing, by weight
2½-inch	100
2-inch	90 - 100
1½-inch	35 - 70
1-inch	0 - 15
½-inch	0 - 5

2.5 Open Graded Crushed Aggregate Materials Under Permeable Concrete

A. Bedding or Choker Course - Furnish crushed stone or crushed gravel conforming to Specification Section 02232, except the gradation shall conform to ASTM No. 8, as follows:

Sieve Size	Percent Passing, by weight
½-inch	100
⅜-inch	5 - 100
No. 4	10 - 30
No. 8	0 - 10
No. 16	0 - 5

B. Aggregate Storage Layer - Furnish crushed stone or crushed gravel conforming to Specification Section 02232, except the gradation shall conform to ASTM No. 57, as follows:

Sieve Size	Percent Passing, by weight
1½-inch	95 – 100
½-inch	25 - 60
No. 4	0 – 10
No. 8	0 - 5

2.6 GEOTEXTILE MATERIALS

A. Geotextile for areas below dense graded crushed aggregate base courses except Breaker Run shall be Mirafi 500X, or equal.

B. Geotextile below Breaker Run shall be Mirafi 180N, or equal.

C. Geotextile below open graded base courses where required shall be Mirafi 160N, or equal.

2.7 SOURCE QUALITY CONTROL

A. Source quality control shall comply with WisDOT Standard Specifications for Highway and Structure Construction, available at the time of bidding, on the WisDOT website.

PART 3 - EXECUTION

3.1 AGGREGATE BASE COURSE PLACEMENT

A. The Contractor shall place the crushed aggregate base material to the depth, line, and grade shown on the Plans. Contractor shall do his own "blue-top" staking to establish crown elevation. Engineer will not perform such staking.

B. Base course placement shall be in conformance with the State of Wisconsin Department of Transportation Standard Specifications for Highway and Structure Construction, most current edition available on the Department of Transportation website, except as modified below. The grade of the completed course shall at all points be within + or - 0.04 feet of the grade shown on the Plans, providing that the thickness of the course is at least that specified and there will not be more than a 5% total increase or decrease in the planned overlay asphalt or concrete thickness over the points measured. This includes fine grading in preparation for pavement construction. The Contractor shall maintain the prepared roadbed or subbase course ahead of the crushed

aggregate base course laying operations in a smooth condition and at not less than the densities specified in paragraph 3.2, below. Any ruts or surface irregularities produced on the prepared road bed or subbase course by reason of traffic, hauling, poor drainage, unstable materials, or from any other cause, shall be corrected before crushed aggregate base course is placed. Snow or ice, if any, shall be removed from the prepared roadbed before the base course is placed. The base course Contractor shall coordinate with the paving Contractor and give written notice to the Engineer and paving Contractor at least seven (7) calendar days prior to acceptance of the base course. Once the base course is accepted by the Owner/Engineer, any damage to the base by traffic, poor drainage, or any other cause shall not be the responsibility of this Contractor. The repair of that damage shall be the responsibility of the paving Contractor.

C. For open graded crushed aggregate materials compacted into layers not exceeding 8 inches. If using a pneumatic roller, do not exceed a compacted thickness of 6 inches per layer.

D. If the required compacted depth of the dense graded crushed aggregate base course exceeds 12 inches, the base shall be constructed in two or more layers of approximately equal thickness. The ¾-inch and 1¼-inch material shall be compacted in lifts not greater than 6 inches. The 3-inch material shall be compacted in lifts not greater than 9 inches. The base course material shall be deposited in such a manner as to minimize segregation and to facilitate spreading in a uniform layer of the required thickness. Excessive manipulation or mixing that causes segregation between the course and fine materials shall be avoided.

E. The work shall generally proceed so that the hauling equipment will travel over previously placed material, and the hauling equipment shall be routed as uniformly as possible over all portions of the previously constructed courses or layers of the base course.

F. The Contractor shall refer to Specification Section 33 05 13 – Manholes and Structures and the Plan Detail sheet for manhole adjustment requirements. Manhole rims shall be tipped, if necessary, to match the slope of the finished pavement surface. Water valve boxes and curb boxes shall be adjusted by the Contractor after coordinating with the Owner.

3.2 COMPACTION

A. Base Course: The Contractor shall compact the base course to 95% of maximum density as determined by AASHTO Designation: T 99, Method C, with replacement of the fraction of material retained on the ¾-inch sieve with No. 4 to ¾-inch material.

3.3 ACCEPTANCE TESTING

A. The Engineer, if he questions the compliance with the material specification for the crushed aggregate base, may order the Contractor to demonstrate compliance by obtaining, at the Contractor's own expense, tests by an independent laboratory. Such tests shall be performed in accordance with the following AASHTO standard testing methods:

Sampling Aggregate	T 02
Material Finer Than No. 200	T 11
Sieve Analysis of Aggregates	T 27
Sieve Analysis of Mineral Filler	T 37
Liquid Limit of Soils	T 89

Plastic Limit of Soils, Plasticity Index of Soils	T 90
Los Angeles Abrasion of Coarse Aggregate	T 96
Specific Gravity and Absorption of Fine Aggregate	T 84
Specific Gravity and Absorption of Coarse Aggregate	T 85*
Soundness of Aggregates	T 104

B. *As revised by the Department of Transportation Method T 85-1

C. A test-roll of the fine graded and compacted base course will be required. This test-roll shall be performed with a fully loaded tri-axle dump truck (60,000 pound minimum gross weight) with the tag-wheels lifted, provided by the Contractor. The test-roll shall be performed on the entire length and width of the base course in the presence of the Engineer. Any deflection of the base course, wheel rutting, or cracking of the base will signify a failure of the base. The Engineer shall make the determination of base course acceptance or failure. In the case of failure, the Engineer shall determine the area and depth of undercut or other corrective action.

D. If the Owner so desires, compaction tests may be taken. The Owner shall pay for the first set of such tests at locations to be designated by the Engineer. If these tests show that compaction in accordance with these specifications has not been achieved, the Contractor shall re-compact the areas designated by the Engineer at its own expense. The Contractor shall then pay for tests to be performed by an independent testing laboratory to verify compliance with the specifications.

3.4 FIELD QUALITY CONTROL

A. Refer to Section 01 40 00 – Quality Requirements

B. Refer to Section 01 70 00 – Execution Requirements and Project Close-Out

3.5 PROTECTION

A. Refer to Section 01 70 00 – Execution Requirements and Project Close-Out

END OF SECTION 32 05 00

SECTION 32 16 23 - SIDEWALKS

PART 1 - GENERAL

1.1 SUMMARY

A. Description of Work Covered by This Section

B. This section describes the methods by which and the materials from which the Contractor shall construct concrete sidewalks. Included in this work is the construction of sidewalk ramps with surface corrugations and thickened sidewalk sections at alleys and driveways.

C. The Contractor shall construct sidewalk ramps in accordance with Section 66.616 of Wisconsin Statutes and any applicable standards of the municipality.

D. This section covers framework for cast-in-place concrete, including shoring for concrete work and installation into the formwork of items furnished under other Sections of these specifications such as anchor bolts, setting plates, bearing plates, anchorages, inserts, frames, and other accessory items embedded in the concrete.

E. This section describes concrete accessories, such as curing compounds, to be used and the methods to be followed in such use.

F. Section Includes:

G. Formwork for concrete sidewalks.

H. Concrete paving for sidewalks.

I. Curing and finishing concrete sidewalks.

1.2 FORMWORK - CODES AND STANDARDS

A. Unless otherwise indicated in the Special Conditions the Contractor shall comply with the American Concrete Institute (ACI) Standard 347, "Recommended Practice for Concrete Formwork".

1.3 FORMWORK - DESIGN

A. Design of formwork, shoring and accessories shall be the responsibility of the Contractor. He shall design, erect, support and maintain formwork to safely support all vertical and lateral loads until such loads can be supported by the concrete structure, as determined in accordance with ACI 347.

1.4 REFERENCE STANDARDS

A. American Association of State Highway and Transportation Officials

B. American Concrete Institute

C. ASTM International

D. Wisconsin Department of Transportation (WisDOT Standards) Standard Specifications for Highway and Structure Construction available on the WisDOT website

1.5 PREINSTALLATION MEETINGS

A. A.Refer to Article 2.04 in Section 00 70 00 – General Conditions.

1.6 SUBMITTALS

A. Refer to Section 01 33 00 – Submittals

1.7 QUALITY ASSURANCE

A. Perform Work according to Section 03 30 01 – Cast-in-place Concrete – Municipal

B. Perform work in accordance with these Specifications and all applicable local, State and Federal regulations.

PART 2 - PRODUCTS

2.1 MATERIALS AND EQUIPMENT

A. Forms - The forms used in constructing sidewalk shall be made of steel, plastic or wood and shall be of sufficient size and strength to resist movement during placement of concrete and to retain alignment and grade. Straight section wood forms shall be at least two (2) inches in nominal thickness. Curved sections of sidewalk shall be constructed using flexible spring steel forms or laminated boards.

B. Gravel Base - Gravel used for base under sidewalks shall be ¾ inch dense graded base as specified in Section 301 of the WisDOT Standards, as set forth on the Department of Transportation website.

C. Concrete - Concrete shall be Class BB, as specified in Section 03 30 01 of these specifications.

D. Expansion Joint Filler - Expansion joints shall be created using pre-molded joint filler, bituminous fiber type or asphalt impregnated type, ASTM D1751. The filler material shall be three-quarters (¾) of an inch in thickness and of sufficient size to provide a continuous joint

from the top surface to the bottom surface of the sidewalk and from one side of the walk to the other.

E. Curing Compound
   1. The compound shall be such that the coating formed by its application on concrete surfaces will provide an effective seal for at least 10 days. It shall adhere firmly to concrete, either partially set or hardened, and shall be ready-mixed for immediate use without alteration other than stirring.
   2. Liquid membrane-forming compounds used for curing concrete under normal conditions shall conform to ASTM C309 or AASHTO M148, and shall be one of the following, or approved equal:
      a. Horn Clear Seal - W. R. Grace Construction Products
      b. Sealtite Cure and Seal CS309 - W. R. Meadows, Inc.
      c. Eucocure - Euclid Chemical Company
      d. Kure-N-Seal - Sonneborn Building Products
      e. L & M Cure - L & M Construction Chemicals, Inc.

F. Forms for Exposed Finish Concrete - Unless otherwise designated, the Contractor shall construct formwork for exposed concrete surfaces with plywood, metal, metal-framed plywood, or other panel type acceptable to the Engineer. The forms shall provide continuous, straight, smooth surfaces. The Contractor shall furnish panels in the largest practicable sizes to minimize the number of joints. He shall provide form material of sufficient stiffness to withstand pressure of newly placed concrete without bow or deflection. When using board formwork for architectural pattern finish, the Contractor shall replace all boards with tie holes before each reuse.

G. Plywood Forms - Form plywood shall be Douglas Fir, 5 ply "Plyform", mill treated, edge sealed, water resistant plywood made for this purpose, free of loose knots, splits, checks, or excessive raised grain.

H. Form Coating Compounds - Form coating compounds shall be commercial formulations that will not bond with, stain, nor adversely affect in other ways the concrete surfaces. Form coating compounds shall not impede the wetting of surfaces to be cured with water or curing compounds. Forms for concrete surfaces requiring subsequent treatment shall receive a type of coating that will not impair bond or adhesion. Form oil used on steel forms shall be non-staining, rust preventative type.

I. Moisture-Retaining Cover - When curing and sealing compounds are not used the Contractor shall provide one of the following moisture-retaining covers which comply with ASTM C171:
   1. Waterproof paper
   2. Polyethylene film
   3. Polyethylene-coated burlap

J. Truncated Dome Warning Plates – Truncated Dome Warning Plates shall be unpainted 24” x 36” gray cast iron detectable warning plates for embedment in sidewalk ramps in accordance with Section 4.29 of the ADA Accessibility Guidelines. The cast iron shall conform to ASTM A-48, Class 30A minimum. The plates shall have 0.2-inch high truncated domes with a base diameter of 0.9 inches to 1.4 inches, and a top diameter of 50% to 65% of the base diameter. These domes shall be located at a center-to-center spacing of 1.6 inches to 2.4 inches, and a

minimum base-to-base spacing of 0.65 inches in a square grid pattern. The plates shall be as provided by Neenah Foundry Company.

2.2 SOURCE QUALITY CONTROL

A. Section 01 40 00 - Quality Requirements: Requirements for testing, inspection, and analysis.

B. Testing: Comply with ASTM C94.

PART 3 - EXECUTION

3.1 CONSTRUCTION

A. Removal of Obstructions – Clearing and Grubbing

1. The Contractor shall remove all old sidewalk, curb and gutter, driveways, pavements, drains, trees, shrubs and any other items necessary to allow construction of the new sidewalks.
2. Tree roots shall be removed to a depth of 12 inches below the bottom of the sidewalk sand or gravel base materials and shall be cut at a point at least 12 inches horizontally from the finished edge of the sidewalk. Holes left from the removal of trees or obstructions shall be backfilled with sand and shall be thoroughly compacted and moistened before concrete is placed. All removed trees and obstructions shall be disposed of at a location outside the project area, such location and manner of disposal being acceptable to the Owner and in conformance with applicable solid waste disposal regulations.

B. Excavation, Backfilling, and Grading

1. The Contractor shall excavate or backfill as necessary to meet the line and grades established in the field by the Owner, shown on the Plans, defined in the Special Conditions, or defined in these specifications. All existing sod, pavements, and other surface materials obviously unsuitable for subgrade materials shall properly be removed and disposed. The Contractor shall notify the Engineer at least three working days in advance of his need for lines and grades. Where lines and grades are staked in the field stakes will be provided at an offset convenient for the Contractor at 50-foot intervals. Where curb & gutter exists, the top of curb shall be used for grade.
2. The costs of excavation and backfill shall be incidental to the unit bid price for concrete sidewalk being constructed in that location, unless the materials being excavated are being removed after the surface sod, pavements, etc., have been removed, are below the subgrade, are unsuitable for subgrade materials and are ordered removed by the Engineer. In such cases, an extra payment shall be negotiated as provided in the General Conditions.
3. Obstructions shown on the Plans or visible from the ground surface prior to clearing and grubbing and which can reasonably be expected to be removed in order for construction of new sidewalk will not be basis for extra payment. Nor will extra payment be allowed for excavations below grade or for backfill materials required to fill such excavations when such excavation is caused by negligence of the Contractor.

4. Backfilling shall be accomplished by placing approved backfill materials in lifts not to exceed 12 inches. Each lift shall be mechanically compacted to a density greater than or equal to 95% of maximum density as determined by the Modified Proctor test or by AASHTO Designation: T99, Method C, with replacement of the fraction of material on the ¾-inch sieve with No. 4 to ¾-inch material. The Owner shall pay for the first series of compaction tests, if such tests are ordered by the Engineer. If the compaction tests fail the Contractor shall recompact those areas and shall pay for the compaction tests on the recompacted areas.
5. After completion of necessary excavation and/or backfilling the Contractor shall grade the subgrade to within one inch of established grade and the area between the sidewalk and the adjacent property line shall be shaped to line, grade and section shown on the Plans, in the details at the end of this section, or defined in the Special Conditions. He shall remove all loose material from the subgrade, proof roll the subbase to check for unstable areas needing additional compaction and shall furnish the compacted subgrade to a true, uniform and smooth surface. Unless a payment item is provided for restoration all work in the boulevard area or in the area between the sidewalk and the adjacent property line shall be incidental to the payment for sidewalk.

C. Base Preparation
1. The Contractorshall provide a crushed aggregate base to a minimum six (6) inch thickness for all sidewalks, unless otherwise shown on the Plans or specified in the Special Conditions. These materials shall be compacted as required for backfill in the previous subsection and shall be fine graded to the established grade. Any valve or curb stop boxes, catch basins, manholes or other utility appurtenances which exist within the limits of the sidewalk construction shall be adjusted to the finished grade at no extra cost so that the new construction will not interfere with the proper operation of the facility.
2. The base shall be thoroughly dampened before the time the concrete is placed. It is the sole responsibility of the Contractor to arrange for the water necessary for such dampening. No extra payment will be made for water or for the dampening process.

D. Form Construction
1. The Contractor shall set the forms to the required grades and lines, rigidly brace the forms, and secure them. Where the Owner selects to provide no line and grade, such as in cases where individual sections of existing walks are being replaced, it is the Contractor's sole responsibility to establish his own line and grade to construct the sidewalk in such a manner as to blend, both horizontally and vertically, with the existing walks or pavements.
2. Unless otherwise shown on the Plans or specified or ordered by the Engineer ,where the new sidewalk is being constructed adjacent to a street with existing curb and gutter the sidewalk shall be constructed at a grade at the front of the walk 0.3 foot higher than the grade of the top of the curb.
3. Tolerances for formwork grade and alignment, and for the resulting finished sidewalk, from the established line and grade, from 0.3 foot above the adjacent top of curb, or from the existing walks or pavements with which the new sidewalk is being blended shall be as follows:
   a. Alignment and Grade Tolerance - Less than or equal to ¼-inch
   b. Surface Variation - Less than or equal to ¼-inch in 10 feet
   c. Vertical and /or Horizontal - Less than or equal to ¼-inch

4. Joint Displacement With Reference to Existing Walks or Pavements- Variations greater than those specified above shall be grounds for rejection of the work. Rejected work shall be removed and replaced by the Contractor at no cost to the Owner.
5. Unless otherwise shown on the Plans, where new sidewalks are being constructed adjacent to a street, the forms shall be set and the sidewalk constructed with a transverse slope of ¼-inch per foot, toward the street side of the walk.
6. Formwork shall be properly braced or tied together so as to maintain position and shape and insure safety to workman and passersby.
7. The Contractor shall coat steel forms with form oil or otherwise protect against rusting. Rust-stained steel formwork will be rejected.
8. The Contractor shall coat the surfaces of forms which will contact the concrete to be poured with form coating compound before concrete is placed. He shall not allow excess form coating material to accumulate in the forms or to come into contact with existing concrete against which fresh concrete will be placed. He shall apply form coatings in compliance with the instructions of the manufacturer of the coating compound.
9. The Contractor shall clean and repair surfaces of forms to be re-used in the work. Split, frayed, delaminated or otherwise damaged form facing materials are not acceptable for re-use. The Contractor shall apply new form coating compound to concrete surfaces of forms to be re-used, just as is specified herein for new framework.
10. The Contractor shall assemble forms so their removal will not damage the concrete.

E. Joints
1. The Contractor shall construct weakened plane (contraction), expansion and construction joints with faces perpendicular to the sidewalk surface and transverse (at right angles) to the centerline of the walk, unless otherwise shown on the Plans or specified in the Special Conditions.
2. The Contractor shall provide expansion joints at not more than 96-foot centers and as shown on the plan detail sheets. Joint fillers shall extend the full width and depth of the joint, terminating not less than two (2) inches nor more than one (1) inch below the top surface of the finished sidewalk. On the sides of the walk, the joint filler shall be trimmed even with the concrete.
3. Joint fillers shall be provided in one-piece lengths, except as approved by the Engineer. Where more than one piece of joint filler is allowed the Contractor shall lace or clip together the sections of the filler.
4. Weakened plane (contraction) joints shall be formed by grooving the fresh concrete to a depth of at least ¼ of the walk thickness with a cutting tool. Transverse joints, either weakened place or expansion, shall be spaced at five foot centers.
5. Joints shall be matched to joints in adjacent driveways and curbs.

F. Concrete Thickness and Placement
1. Sidewalk thickness is shown on the Plan Detail Sheets, in the Special Conditions, Measurement and Payment Section, or in the Bid Proposal.
2. Concrete shall be placed and cured in accordance with the requirements of Section 03 30 01 Cast In Place Concrete – Municipal of these specifications. The Contractor shall also comply with the provisions of that section and with Subsection 2.1C of this section with regard to proportioning, mixing, and testing. The Contractorshall not place the concrete until the subgrade and forms have been checked for line and grade. He shall moisten the subgrade as required to provide a uniform dampened condition at the time the concrete is placed.

3. The Contractor shall spread the concrete uniformly between the forms and shall strike it off and thoroughly compact it with a steel shod strikeboard.

G. Finishing Concrete

1. After the concrete has been thoroughly compacted and leveled, it shall be floated with wood or metal floats to smooth the surface and to eliminate irregularities and honeycombed areas. The surface shall be tested for trueness with a 10 foot straightedge.
2. Joints shall be edged with a ⅛ to ¼-inch radius edger. Sidewalk edges shall be tooled with a ¼ to 2-inch radius edger.
3. The Contractor shall then create a brushed finish using a fiber-haired brush drawn transversely to the centerline of the sidewalk, except at driveway and alley crossings where the brush finish shall be longitudinal to the centerline of the walk.
4. The Contractor shall wet cure or cure finish the concrete with a white pigmented curing compound meeting the requirements or Subsection 2.1E.

H. Curb Ramps

1. The Contractor shall construct curb ramps at all intersections. Such ramps shall be Type 1, as shown on the ramp detail on the plans in all areas where the distance from the back of the curb to the back of the sidewalk is less than 12 feet. Type 2 curb ramps as shown on the plans shall be constructed in all areas where the distance from the back of the curb to the back of the sidewalk is 12 feet or greater, unless otherwise shown on the Plans or specified in the Special Conditions.
2. All ramps shall have a surface texture. Unless a truncated dome detectable panel is specified in the Bid Proposal, the Special Conditions or the Measurement & Payment Section, surface texturing shall consist of linear impressions approximately ¼-inch to ⅜-inch in depth and width, oriented to provide a uniform pattern of diamond shapes measuring approximately 1¼ inches in width by 2¼ inches in length, with the length being parallel to the direction of pedestrian movement. This surface texture may be achieved by impressing and removing a piece of expanded metal regular industrial mesh into the surface of the ramp while the concrete is in a plastic state. If state or federal codes require a surface texture at variance with this requirement, those codes shall govern.

I. Alleys and Driveways

1. Sidewalks at alleys and driveways shall be constructed to the minimum thickness shown on the plan detail sheet. Transverse slopes of sidewalks at driveways and alley entrances shall match the slope of the driveway or alley ramp, but shall not exceed 5%.
2. Where a new concrete driveway pavement joins an existing concrete driveway pavement with at least a 7-inch average thickness, the two pavements shall be joined by drilling ties made of No. 4 reinforcing rod at least six inches into the existing pavement at the midpoint of the thickness and extending those ties at least six inches into the new pavement. Ties shall be placed at 24 inches on center or closer. These ties shall be paid on a per tie basis separately from the concrete sidewalk or driveway.

J. Restoration of Boulevard Areas and Embankment and Excavation Slopes]

1. The Contractor shall finish all boulevard areas and embankment and excavation slopes to the blend lines or points shown on the plans or plan cross-sections. If only blend points are shown on plan cross-sections the Contractor shall, for bid purposes, interpolate between adjacent sections. For blend areas, where topsoil cover will be greater than two (2) inches, the existing sod shall be removed before new topsoil is placed. The

Contractor shall also repair all other areas he has disturbed. Restoration shall be in accordance with the provisions of Section 32 90 00.

K. Protection

1. The Contractor shall protect sidewalk from damage until acceptance of the work. The Contractor shall exclude traffic from sidewalk for at least 7 days after placement and shall repair or replace broken or defective sidewalk as directed. He shall make provisions for pedestrians and vehicular traffic both during construction and during the 7 day traffic exclusion period using whatever barricades, warning signs, lanterns, and lights may be necessary.

L. Guarantee Period

1. The Contractor shall guarantee the sidewalk to remain free from cracks, chips, and spalling due to weather related or settlement causes for a period of one year from acceptance. The Owner may inspect the sidewalk after it has passed through the first winter for such defects and may call the Contractor back to the project area to repair or replace broken, cracked, chipped or defective sidewalks at no cost to the Owner.

M. Section 01 70 00 – Execution Requirements and Project Closeout: Requirements for installation examination.

3.2 FIELD QUALITY CONTROL

A. Section 01 40 00 - Quality Requirements: Requirements for inspecting and testing.

PART 4 - MUNICIPAL REQUIREMENTS

4.1 TRUNCATED DOME PANELS

A. Truncated domes are not required unless listed in the bid proposal.

4.2 SYNTHETIC FIBER REINFORCEMENT

A. Synthetic fiber reinforcement is not required unless listed in the bid proposal.

END OF SECTION 32 16 23

SECTION 32 90 00 – LANDSCAPE RESTORATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Final grade topsoil for finish landscaping.
   2. Site contouring.
   3. Finish ground cover.

1.2 SUBMITTALS

A. Section 01 33 00 – Submittals: Submittal procedures

B. Materials Source: Submit name of imported materials source.

1.3 QUALITY ASSURANCE

A. Furnish each topsoil material from single source throughout the Work.

PART 2 - PRODUCTS

2.1 MATERIAL

A. Topsoil
   1. Topsoil shall conform to the requirements of section 31 05 00 – Soils, Aggregates and Geotextiles.

B. Lime
   1. Lime used for soil amendment shall be agricultural grade limestone ground sufficiently fine so that 80% passes a No. 8 sieve. Lime shall contain 80% calcium carbonate equivalent. Moisture shall not exceed 10%.

C. Fertilizer
   1. Fertilizer used in conjunction with seeding shall be dry, free-flowing granular fertilizer suitable for application by agricultural fertilizer spreaders or blower equipment, or non-volatile liquid commercial fertilizer, having an analysis of 20-10-10 (Nitrogen-Phosphoric Acid-Potash), or approved equal.

D. Grass Seed for Lawns
   1. Grass seed shall be delivered to the site in bags, tagged or labeled to show the percentage of purity and germination. The seed shall have been tested by a recognized seed testing

laboratory within one year prior to the date of seeding and shall conform to the latest laws of the U.S. and the State of Wisconsin. Upon request the Contractor shall furnish to the Engineer copies of the test results. Permanent seed mixtures shall consist of the following percentages of various varieties of grass seed, each of which shall have the designated minimum percent purity and germination:

Species	**Purity Min. %**	**Germination Min. %**	**Mixture Proportions, Percent**
Kentucky Bluegrass	85	80	35
Creeping Red Fescue	97	85	20
Improved Hard Fescue	97	85	20
Improved Fine Perennial Ryegrass	96	85	25
*Pure Live Seed. These grasses shall contain no improved varieties			

2. The "Madison Parks" mix may be used as a permanent seed mixture.
3. As a companion seeding to the above seed mixture annual ryegrass of the same purity and germination standards shall be provided.

E. Grass Seed for Large Non-Lawn Areas

1. Grass seed shall be delivered to the site in bags, tagged or labeled to show the percentage of purity and germination. The seed shall have been tested by a recognized seed testing laboratory within one (1) year prior to the date of seeding and shall conform to the latest laws of the U.S. and the State of Wisconsin. Upon request the Contractor shall furnish to the Engineer copies of the test results. Permanent seed mixtures shall be seed mixture No. 10 for average soil conditions, including clay or loam soils and soils in moist conditions and seed mixture No. 20 for light, well drained, sandy or gravelly soils and for slopes and ditches, except on ditches between the edge of the shoulder and the bottom of the ditch where seed mixture No. 30 shall be used, all as specified in the Standard Specifications for Highway and Structure Construction published by the Wisconsin Department of Transportation.
2. A companion seeding to the above seed mixture of the same purity and germination standards shall be provided and applied as set forth in Part 3. Between May 15th and July 15th oats or Sudan grass shall be used as the companion seeding. From July 15th to September 15th use annual ryegrass as the companion seeding. After September 15th use winter wheat as the companion seeding.

F. Straw Mulch

1. Unless otherwise specified in the Special Conditions to the specifications, mulch shall be straw, free of grain, weed, seed and mold. Mulch materials shall not contain excessive moisture which might prevent feeding through a mulch blower machine.

G. Sod

1. Sod shall be fresh, predominantly bluegrass sod from an approved sod farm.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Section 01 30 00 – Administrative Requirements: Verification of existing conditions before starting work.

B. Verify substrate base has been contoured and compacted.

C. Complete all seeding by September 15th.

D. After preparation and prior to seeding notify Engineer so that the prepared surface may be inspected. Seeding or sodding shall not take place until the prepared surface is inspected by Engineer.

3.2 PREPARATION

A. Protect landscaping and other features remaining as final Work.

B. Perform a soil test to determine fertilizer needs and if lime is necessary.

3.3 SUBSTRATE PREPARATION

A. Eliminate uneven areas and low spots.

B. Remove weeds, debris, roots, branches, stones, and dust clumps in excess of ½-inch in size or lawn areas and in excess of 1-inch in size on non-lawn areas. Any topsoil containing gravel shall be removed and replaced with fresh topsoil. Remove contaminated subsoil.

C. Scarify surface to depth of 3 inches where topsoil is scheduled. Scarify in areas where equipment used for hauling and spreading topsoil has compacted subsoil.

3.4 PLACING TOPSOIL

A. Place topsoil in areas where seeding and sodding is required to nominal depth of at least 4 inches. Place topsoil during dry weather.

B. Fine grade topsoil to eliminate rough or low areas. Maintain profiles and contour of subgrade.

C. Remove roots, weeds, rocks, and foreign material while spreading.

D. Manually spread topsoil close to plants and buildings to prevent damage.

E. Lightly compact the placed topsoil.

F. Remove surplus subsoil and topsoil from site.

G. Leave stockpile area and site clean and raked, ready to receive landscaping.

3.5 FERTILIZER AND LIME APPLICATION ON LAWNS

A. Fertilizer shall be applied with a hydroseeder, power-drawn drill or spreader, or blower equipment either separately from or concurrently with the grass seed. Fertilizing shall not be done with "broadcast"-type equipment during windy weather, and not at all when the ground is frozen or excessively moist. Fertilizer shall be applied at the following rates:

Nutrient	**Per Acre**	**Per 1000 Square Feet**
Nitrogen (N)	100 pounds	2.3 pounds
Phosphoric Acid (P_2O_5)	50 pounds	1.2 pounds
Potash (K_2O)	50 pounds	1.2 pounds

B. If the soil test indicates lime addition is necessary, apply at the rates indicated by the test.

3.6 FERTILIZER AND LIME APPLICATION ON NON-LAWN AREAS

A. Fertilizer and lime shall be applied with a hydroseeder, power or spreader, or blower equipment either separately from or concurrently with the grass seed. Fertilizing shall not be done with "broadcast"-type equipment during windy weather, and not at all when the ground is frozen or excessively moist. Fertilizer and lime shall be applied at the rate specified by the soil test, or at 400 to 600 pounds per acre in lieu of a soil test.

3.7 LAWN SEEDING

A. The Contractor shall apply the seed using a hydroseeder, a power-drawn drill or spreader, or approved blower equipment with an adjustable disseminating device capable of maintaining a constant measurement rate of material discharge that will insure an even distribution of seed and fertilizer.

B. Permanent seed mixture shall be applied at the rate of 2 pounds/1000 square feet. A companion seeding of annual ryegrass, oats or winter wheat, depending upon the season, shall also be made at an application rate of 1 pound/1000 square feet.

C. After the seeding is completed and prior to mulching the Contractor shall rake the surface with an inverted leaf rake to set the seed.

3.8 SEEDING LARGE NON-LAWN AREAS

A. The Contractor shall apply the seed using a hydroseeder, a power-drawn drill or spreader, or approved blower equipment with an adjustable disseminating device capable of maintaining a constant measurement rate of material discharge that will insure an even distribution of seed and fertilizer.

B. Permanent seed mixture shall be applied at the rate of 1.5 pounds/1000 square feet. A companion seeding of annual ryegrass, oats or winter wheat, depending upon the season, shall also be made at an application rate of 0.8 pounds/1000 square feet.

C. After the seeding is completed and prior to mulching the Contractor shall rake the surface with an inverted leaf rake to set the seed.

3.9 APPLICATION OF MULCH

A. The Contractor shall furnish, haul and evenly apply straw mulch at a rate not less than 1½ tons per acre to a loose depth of one (1) to two (2) inches. Seventy to ninety percent of the surface shall be covered. The mulch spreading equipment shall utilize forced air to blow mulch material onto the seeded area, unless otherwise approved by the Engineer. Mulching shall not be conducted during very windy conditions.

B. The mulch shall not be left in clumps and shall not be blown onto healthy grass, trees, shrubs, curbs, pavements, vehicles, etc. Any mulch which blows onto areas not intended to be mulched, such as those defined above, shall be immediately removed.

C. Following application of the mulch, the Contractor shall anchor the straw mulch by cutting the mulch into the soil with notched edges of a weighted disc so that the mulch is partially embedded in the soil, or by other methods acceptable to the Engineer.

D. Wood cellulose fiber, the use of which is as mulch is permissible only on large non-lawn areas, shall be applied at a rate ¾ to 1-ton per acre. Wood cellulose fiber mulch need not be anchored.

E. Hay or "marsh hay", the use of which as mulch is permissible only on large non-lawn areas, shall be applied at the same rates and to the same criteria as straw mulch.

3.10 SODDING

A. Sod shall be delivered to the site and installed on the same day. The Contractor shall place sod with edges in close contact and with joints staggered. Sod placement on slopes shall commence at the bottom of the slope, and the rows shall be laid perpendicular to the slope. The edge of the sod at the tops of slopes shall be turned slightly under, and a layer of soil shall be compacted over the edge to direct surface drainage over the edge onto the top of the sod. Sod placement in areas other than on slopes shall be made so that the top sod surface is flush with adjoining surfaces.

B. On slopes steeper than 1:4, vertical to horizontal, the Contractor shall stake the sod with split cedar shingles, or other equally effective stakes, spaced from 18 to 36 inches apart along the longitudinal axis of the sod strip. These stakes shall be placed near the top edge of the sod strip and shall be driven flush with the sod.

C. After the sod is placed, it shall be rolled or firmly tamped to press the sod onto the underlying soil. The Contractor shall thoroughly soak all sodded areas by sprinkling them with water at the end of the day in which the sod is laid.

3.11 WATERING OF SEED BEDS

A. The sod shall be maintained in a moist growing condition. The Contractor shall soak the sod by sprinkling with water on the seven successive calendar days following completion of the seeding unless at least ¼-inch of rainfall has occurred on that day.

3.12 WATERING OF SOD

A. The sod shall be maintained in a moist growing condition. The Contractor shall soak the sod by sprinkling with water on the seven successive calendar days following completion of the seeding unless at least ¼-inch of rainfall has occurred on that day.

3.13 TOLERANCES

A. Top of Topsoil: Plus or minus ½-inch.

3.14 PROTECTION AND MAINTENANCE OF INSTALLED WORK

A. Section 01 70 00 – Execution and Closeout Requirements: Requirements for protecting finished Work.

B. Prohibit construction traffic over topsoil, both before and after grass restoration.

C. Where paved drainage ways, curbs & gutters, culverts, storm sewers or other structures exist on the site the Contractor shall clean all soil, silt, mulch or debris and fully restore such drainage ways, devices and structures to their intended operating condition.

D. After the restoration operation is completed, the Contractor shall provide and distribute to each property owner a sheet of instructions on how to care for the restored surface and how to ensure acceptable grass growth.

END OF SECTION 32 90 00

VILLAGE OF
McFarland

SUMMARY SHEET

MEETING DATE: **Monday, August 22, 2022**

SECTION: **Business**

DEPARTMENT: **Public Works**

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

AGENDA ITEM: **Update regarding Exchange Street and action to schedule a Public Information Meeting.**

PREVIOUS ACTION:
The Public Works & Utilities Committee last discussed the Exchange Street project at their May 23, 2022 meeting.

ISSUE SUMMARY:
Staff would like the committee to review the 60% plan set for Exchange Street and provide their comments. An overview of the plan set is attached for your convenience.

As part of that review, staff would like to move forward with scheduling a date to host a Public Informational Meeting (PIM). This PIM will introduce the project to the public along with giving them the opportunity to offer comments and/or suggestions. We are hoping that the PIM can be held in September.

FINANCIAL/BUDGET IMPACT:
None.

VILLAGE PLAN REFERENCE:
None.

ORDINANCE REFERENCE:
None.

BOARD, COMMISSION OR COMMITTEE RECOMMENDATION:
This item is presented as an update. No action is required.

ATTACHMENTS:
1. EXCHANGE STREET 60% DRAWING SET

PROJECT ID: 5685-00-04/05

WITH:

COUNTY: DANE COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
5685-00-04/05		

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

VILLAGE OF MCFARLAND, EXCHANGE STREET

FARWELL STREET TO SLEEPY HOLLOW ROAD

LOC STR
DANE COUNTY

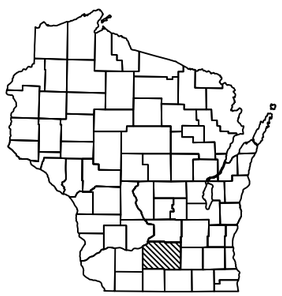
PRELIMINARY 60% DRAWINGS

STATE PROJECT NUMBER
5685-00-05

ORDER OF SHEETS

Section No.	1	Title
Section No.	2	Typical Sections and Details
Section No.	3	Estimate of Quantities
Section No.	3	Miscellaneous Quantities
Section No.	4	Right of Way Plat
Section No.	5	Plan and Profile
Section No.	6	Standard Detail Drawings
Section No.	7	Sign Plates
Section No.	8	Structure Plans
Section No.	9	Computer Earthwork Data
Section No.	9	Cross Sections

TOTAL SHEETS =



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DESIGN DESIGNATION

A.A.D.T. (2020)	=	1793
A.A.D.T. (2040)	=	2264
D.H.V.	=	TBD
D.D.	=	60/40
T.	=	10%
DESIGN SPEED	=	30 MPH
ESALS	=	TBD

CONVENTIONAL SYMBOLS

PLAN

CORPORATE LIMITS
PROPERTY LINE
LOT LINE
LIMITED HIGHWAY EASEMENT
EXISTING RIGHT OF WAY
PROPOSED OR NEW R/W LINE
SLOPE INTERCEPT
REFERENCE LINE (300'EB')
EXISTING CULVERT
PROPOSED CULVERT (Box or Pipe)
COMBUSTIBLE FLUIDS (CAUTION)
MARSH AREA
WOODED OR SHRUB AREA

PROFILE

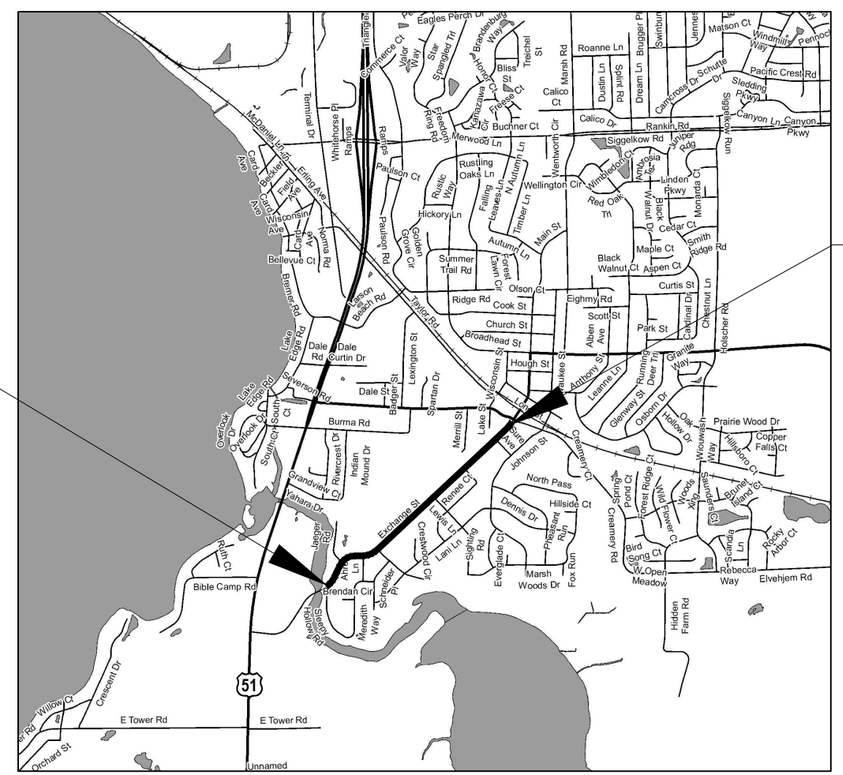
GRADE LINE
ORIGINAL GROUND
MARSH OR ROCK PROFILE (To be noted as such) (ROCK)
SPECIAL DITCH (LABEL)
GRADE ELEVATION (95.36)
CULVERT (Profile View)

UTILITIES

ELECTRIC — E —
FIBER OPTIC — FO —
GAS — G —
SANITARY SEWER — SAN —
STORM SEWER — SS —
TELEPHONE — T —
WATER — W —
UTILITY PEDESTAL
POWER POLE
TELEPHONE POLE

BEGIN PROJECT
STA. 12+51

END PROJECT
STA. 55+80



LAYOUT

SCALE 0 — 0.5 MI

TOTAL NET LENGTH OF CENTERLINE = 0.823 MI.

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), DANE COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES. ELEVATIONS ARE REFERENCED TO NAVD 88 (2012). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 12A.

ACCEPTED FOR VILLAGE OF MCFARLAND

(Date) (Signature and Title of Official)

ORIGINAL PLANS PREPARED BY

TOWN & COUNTRY ENGINEERING, INC.

(Date) (Professional Engineer Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	TOWN & COUNTRY ENGINEERING, INC.
Designer	TOWN & COUNTRY ENGINEERING, INC.
Project Manager	LORRAINE BETZEL, P.E.
Regional Examiner	
Regional Supervisor	

APPROVED FOR THE DEPARTMENT

DATE: _____ (Signature)

E

2

GENERAL NOTES

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLAN ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

THE CONTRACTOR SHALL COORDINATE HIS CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGERS HOTLINE AND/OR A DIRECT CALL TO UTILITIES THAT HAVE FACILITIES IN THE AREA. NOT ALL UTILITIES ARE MEMBERS OF DIGGERS HOTLINE.

NO TREES OR SHRUBS ARE TO BE REMOVED UNLESS SUCH TREES OR SHRUBS HAVE FIRST BEEN INDICATED FOR REMOVAL BY THE ENGINEER IN THE FIELD.

EXCAVATION BELOW SUBGRADE (EBS) IS NOT USED TO BALANCE YARDAGE, AND IS NOT SHOWN ON THE CROSS SECTIONS BUT IS MEASURED AND PAID FOR AS COMMON EXCAVATION. EXACT LOCATIONS OF EBS WILL BE DETERMINED BY THE ENGINEER.

DISTURBED AREAS SHOWN WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS ARE TO BE FERTILIZED (TYPE B), SEEDED (USE SEED MIX NO. 20), AND EROSION MATTED/MULCHED AS DIRECTED BY THE ENGINEER. DO NOT USE FERTILIZER IN WETLAND AREAS.

WHEN THE QUANTITY OF THE ITEM OF BASE AGGREGATE DENSE OR HMA PAVEMENT IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OR THICKNESS OF THE COURSE SHOWN ON THE PLANS IS APPROXIMATE, AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER IN THE FIELD.

SILT FENCE, TEMPORARY DITCH CHECK, AND CULVERT PIPE CHECK BID ITEMS SHALL BE PLACED AS SHOWN IN THE PLAN OR AS DIRECTED BY THE ENGINEER. SILT FENCE SHALL BE PLACED PRIOR TO CONSTRUCTION.

FILL EXPANSION IS VARIABLE AND IS ESTIMATED AT 25%.

THE EXACT LOCATION OF PRIVATE AND FIELD ENTRANCES TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

REMOVAL OF ASPHALTIC SURFACES WERE AN ABUTTING ASPHALTIC SURFACE IS TO REMAIN IN PLACE SHALL REQUIRE A SAWCUT MEETING THE APPROVAL OF THE ENGINEER IN THE FIELD.

ACCURACY OF INLET AND DISCHARGE ELEVATIONS FOR DRAINAGE STRUCTURES SHALL BE VERIFIED BY THE ENGINEER IN THE FIELD.

CURB AND GUTTER ELEVATIONS ARE GIVEN ON THE FLANGE LINE, UNLESS OTHERWISE NOTED.

ALL RADII DIMENSIONS ON THE PLAN FOR CURB AND GUTTER ARE TO THE FLANGE OF THE CURB AND GUTTER.

EXISTING DRIVEWAYS SHALL BE RESTORED IN KIND (UNLESS OTHERWISE NOTED) AND THEIR LOCATION VERIFIED BY THE ENGINEER IN THE FIELD.

HMA PAVMENT QUANTITIES WERE CALCULATED USING 115 LB/SY/IN. 4.5-INCHES OF HMA PAVEMENT SHALL BE CONSTRUCTED WITH A 1.5-INCH UPPER LAYER HMA PAVEMENT 5LT58-28S AND A 3-INCH LOWER LAYER HMA PAVEMENT 4LT 58-28S.

EXPANSION JOINTS SHALL BE CONSTRUCTED AT ALL RADII POINTS IN THE CURB & GUTTER.

STORM SEWER ELEVATIONS, LENGTHS AND LOCATIONS AS SHOWN ON THE PLANS AND CROSS SECTIONS MAY BE ADJUSTED TO FIT FIELD CONDITIONS.

MISCELLANEOUS REMOVAL ITEMS REQUIRING RESTORATIONS OF CONCRETE OR ASPHALT DRIVEWAYS, CONCRETE DRIVEWAYS, OR SIDE ROADS/HIGHWAYS SHALL BE REMOVED TO AN EXISTING JOINT OR SAWED AS DETERMINED BY THE ENGINEER IN THE FIELD OR AS SHOWN ON THE PLANS.

CURVE DATA IS BASED ON THE ARC DEFINITION.

THE LOCATION OF ALL PERMANENT SIGNING SHALL BE VERIFIED BY THE ENGINEER IN THE FIELD PRIOR TO PLACEMENT.

ADJUST DITCH GRADING AS NECESSARY TO FIELD CONDITIONS AND AS DIRECTED BY THE ENGINEER IN THE FIELD.

WETLANDS ARE PRESENT WITHIN THE PROJECT LIMITS. THE CONTRACTOR SHALL NOT OPERATE OR STOCKPILE EQUIPMENT BEYOND THE EXISTING TOE OF SLOPE AT STA. 95+50 - STA. 97+50, RT.

THE SOILS REPORT MAY BE OBTAINED FROM THE ENGINEER.

DIGGERS HOTLINE
Dial 811 or (800) 242-8511
www.DiggersHotline.com

CONTACTS

WISDOT

WisDOT PROJECT MANAGER
2101 WRIGHT STREET
MADISON, WI 53704
ATTN: LORRAINE BETZEL, P.E.
PH: (608) 246-3279
EMAIL: lorraine.betzel@dot.wi.gov

DESIGN CONSULTANT

TOWN & COUNTRY ENGINEERING
2612 MARKETPLACE DRIVE, SUITE 103
MADISON, WI 53719
ATTN: TIM STIEVE, P.E.
PH: (608) 273-3350
CELL: (920) 723-7789
EMAIL: tstieve@tcengineers.net

WDNR LIAISON

STATE OF WISCONSIN
DNR SOUTH CENTRAL REGION HQ
3911 FISH HATCHERY ROAD
FITCHBURG, WI 53711
ATTN: ERIC HEGGELUND
PH: (608) 228-7927
EMAIL: Eric.Heggelund@wisconsin.gov

VILLAGE OF MCFARLAND

DIRECTOR OF PUBLIC WORKS
5115 TERMINAL DRIVE
MCFARLAND, WI 53558
ATTN: JIM HESSLING
PH: (608) 838-7287
EMAIL: jim.hessling@mcfarland.wi.us

UTILITIES

ELECTRICITY

ALLIANT ENERGY
ATTN: DAN TREINEN
1521 PROGRESS LANE
STOUGHTON, WI 53589
PH: (608) 877-1650
CELL: (608) 459-5259
EMAIL: DanTreinen@alliantenergy.com

GAS/PETROLEUM

ALLIANT ENERGY
ATTN: DAN TREINEN
1521 PROGRESS LANE
STOUGHTON, WI 53589
PH: (608) 877-1650
CELL: (608) 459-5259
EMAIL: DanTreinen@alliantenergy.com

ELECTRICITY-TRANSMISSION

AMERICAN TRANSMISSION COMPANY
ATTN: MATT ERNST
2489 RINDEN ROAD
COTTAGE GROVE, WI 53527
PH: (920) 338-6573
EMAIL: mernst@atcllc.com

COMMUNICATION LINE

CHARTER COMMUNICATIONS
ATTN: KIRK UPPERMAN
2701 DANIELS STREET
MADISON, WI 53718-6792
PH: (608) 209-3206
EMAIL: Kirk.upperman@charter.com

TDS TELECOMMUNICATIONS
ATTN: MATT SCHULTE
16924 WEST VICTOR ROAD
NEW BERLIN, WI 53151
PH: (262) 754-3063
EMAIL: Matt.schulte@tdstelecom.com

FRONTIER COMMUNICATIONS
ATTN: RUSS RYAN
118 DIVISION STREET
PLYMOUTH, WI 53073
PH: (920) 583-3275
CELL: (920) 797-9662
EMAIL: russell.w.ryan@ftr.com

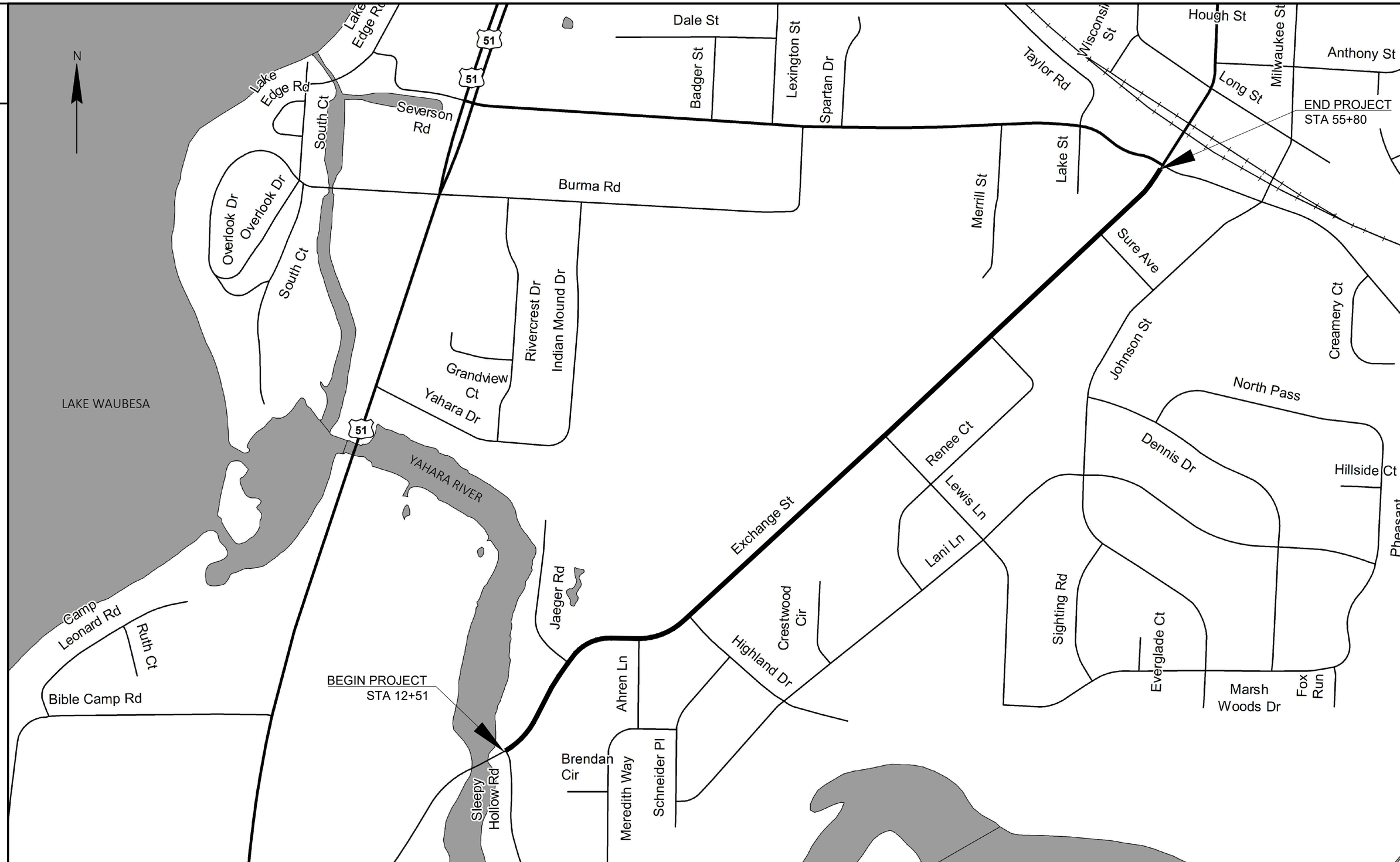
LIST OF STANDARD ABBREVIATIONS

ABUT	Abutment
AC	Acre
AGG	Aggregate
AH	Ahead
<	Angle
ASPH	Asphaltic
AVG	Average
ADT	Average Daily Traffic
BAD	Base Aggregate Dense
BK	Back
BF	Back Face
BM	Bench Mark
BR	Bridge
C or C/L	Center Line
CC	Center to Center
C.E.	Commercial Entrance
CTH	County Trunk Highway
CR	Creek
CR	Crushed
CY or CU YD	Cubic Yard
CP	Culvert Pipe
C & G	Curb and Gutter
D	Degree of Curve
DHV	Design Hour Volume
DIA	Diameter
E	East
X	East Grid Coordinate
ELEC	Electric (al)
EL or ELEV	Elevation
ESALS	Equivalent Single Axle Loads
EBS	Excavation Below Subgrade
FF	Face to Face
F.E.	Field Entrance
F	Fill
FG	Finished Grade
FL or F/L	Flow Line
FT	Foot
FTG	Footing
GN	Grid North
HT	Height
CWT	Hundredweight
HYD	Hydrant
INL	Inlet
ID	Inside Diameter
INV	Invert
IP	Iron Pipe or Pin
IRS	Iron Rod Set
JT	Joint
JCT	Junction
LHF	Left-Hand Forward
L	Length of Curve
LIN FT or LF	Linear Foot
LC	Long Chord of Curve
MH	Manhole
MB	Mailbox
ML or M/L	Match Line
N	North
Y	North Grid Coordinate
OD	Outside Diameter
PLE	Permanent Limited Easement
PT	Point
PC	Point of Curvature
PI	Point of Intersection
PRC	Point of Reverse Curvature
PT	Point of Tangency
POC	Point On Curve
POT	Point on Tangent
PVC	Polyvinyl Chloride
PCC	Portland Cement Concrete
LB	Pound
PSI	Pounds Per Square Inch
P.E.	Private Entrance
R	Radius
RR	Railroad
R	Range
RL or R/L	Reference Line
RP	Reference Point
RCCP	Reinforced Concrete Culvert Pipe
REQD	Required
RES	Residence or Residential
RW	Retaining Wall
RT	Right
RHF	Right-Hand Forward
R/W	Right-of-Way
RD	Road
R	River
RDWY	Roadway
SALV	Salvaged
SAN S	Sanitary Sewer
SEC	Section
SHLDR	Shoulder
SHR	Shrinkage
SW	Sidewalk
S	South
SQ	Square
SF or SQ FT	Square Feet
SY or SQ YD	Square Yard
STD	Standard
SDD	Standard Detail Drawings
STH	State Trunk Highways
STA	Station
SS	Storm Sewer
SG	Subgrade
SE	Superelevation
SL or S/L	Survey Line
SV	Septic Vent
T	Tangent
TEL	Telephone
TEMP	Temporary
TI	Temporary Interest
TLE	Temporary Limited Easement
t	Ton
T or TN	Town
TRANS	Transition
TL or T/L	Transit Line
T	Trucks (percent of)
TYP	Typical
UNCL	Unclassified
UG	Underground Cable
USH	United States Highway
VAR	Variable
V	Velocity or Design Speed
VERT	Vertical
VC	Vertical Curve
VOL	Volume
WM	Water Main
WV	Water Valve
W	West
WB	Westbound
YD	Yard

ORDER OF SECTION 2 SHEETS:

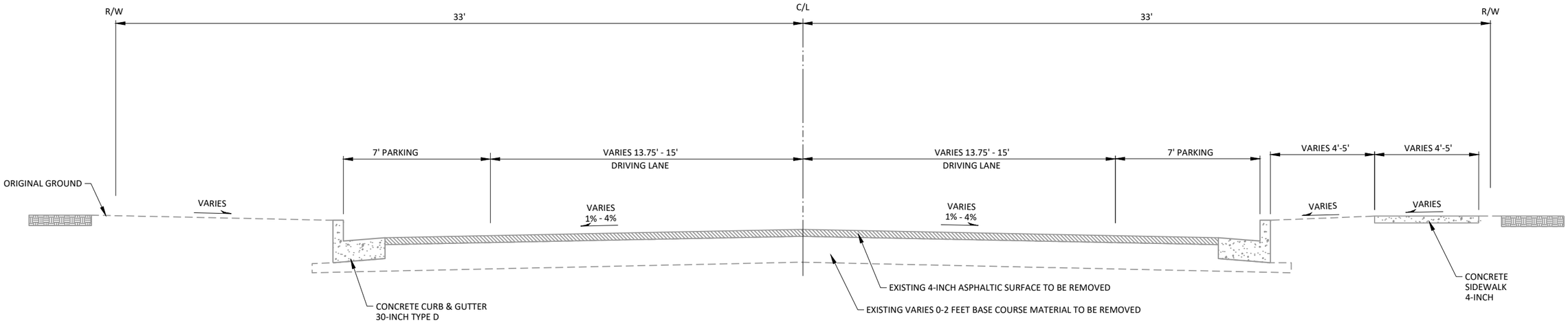
- WRITTEN MATERIAL
- PROJECT OVERVIEW
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- INTERSECTION DETAILS
- PAVING DETAILS
- EROSION CONTROL PLAN
- STORM SEWER PLAN
- PERMANENT SIGNING/PAVEMENT MARKING
- TRAFFIC CONTROL
- ALIGNMENT DETAILS

2



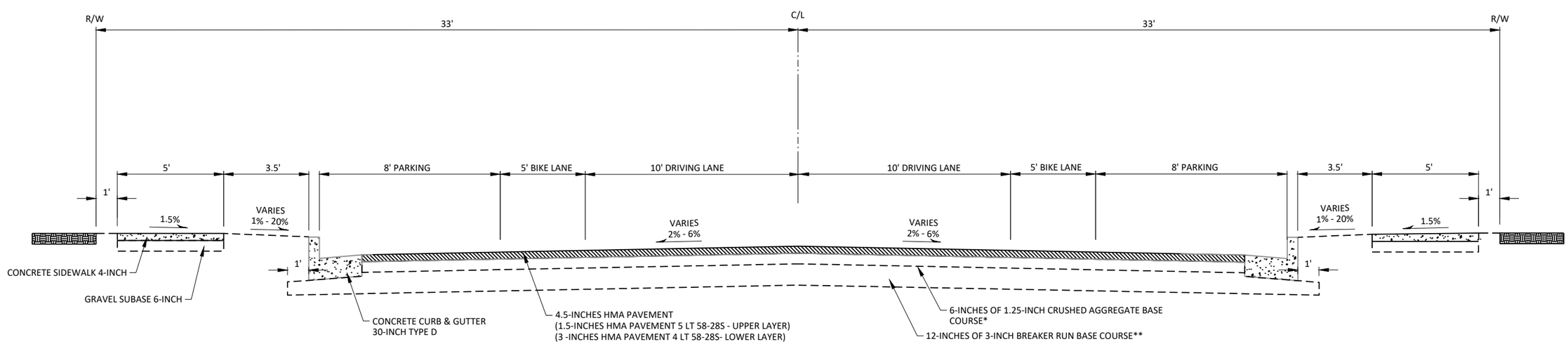
PROJECT NO: 5685-00-04/05	HWY: EXCHANGE STREET	COUNTY: DANE	PROJECT OVERVIEW	SHEET	E

FILE NAME : J:\JOB#S\MCFARLAND\MC-134-M4 EXCHANGE STREET PRELIMINARY ENGINEERING (FILE)\DRAWING\MC 134 TITLE.DWG
LAYOUT NAME - PROJECT OVERVIEW
PLOT DATE : 6/9/2022 6:51 AM PLOT BY : TIM STIEVE PLOT NAME : PLOT SCALE : Custom
WISDOT/CADDS SHEET 42



TYPICAL EXISTING SECTION

EXCHANGE STREET
STA. 12+51 - STA. 55+80



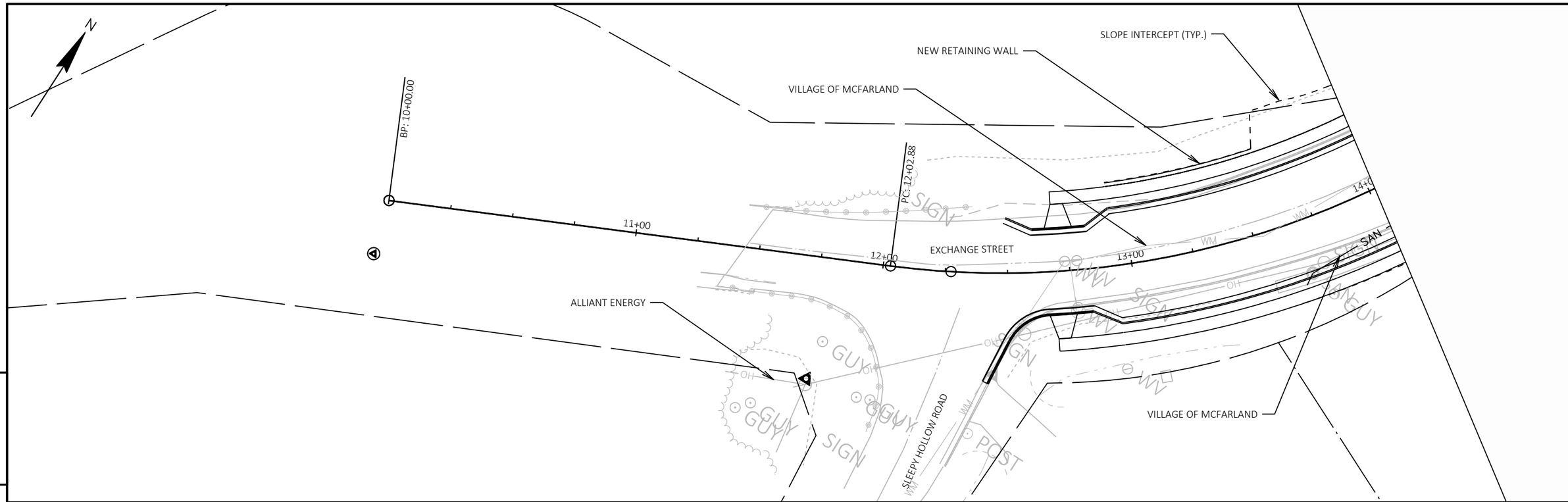
TYPICAL FINISHED SECTION

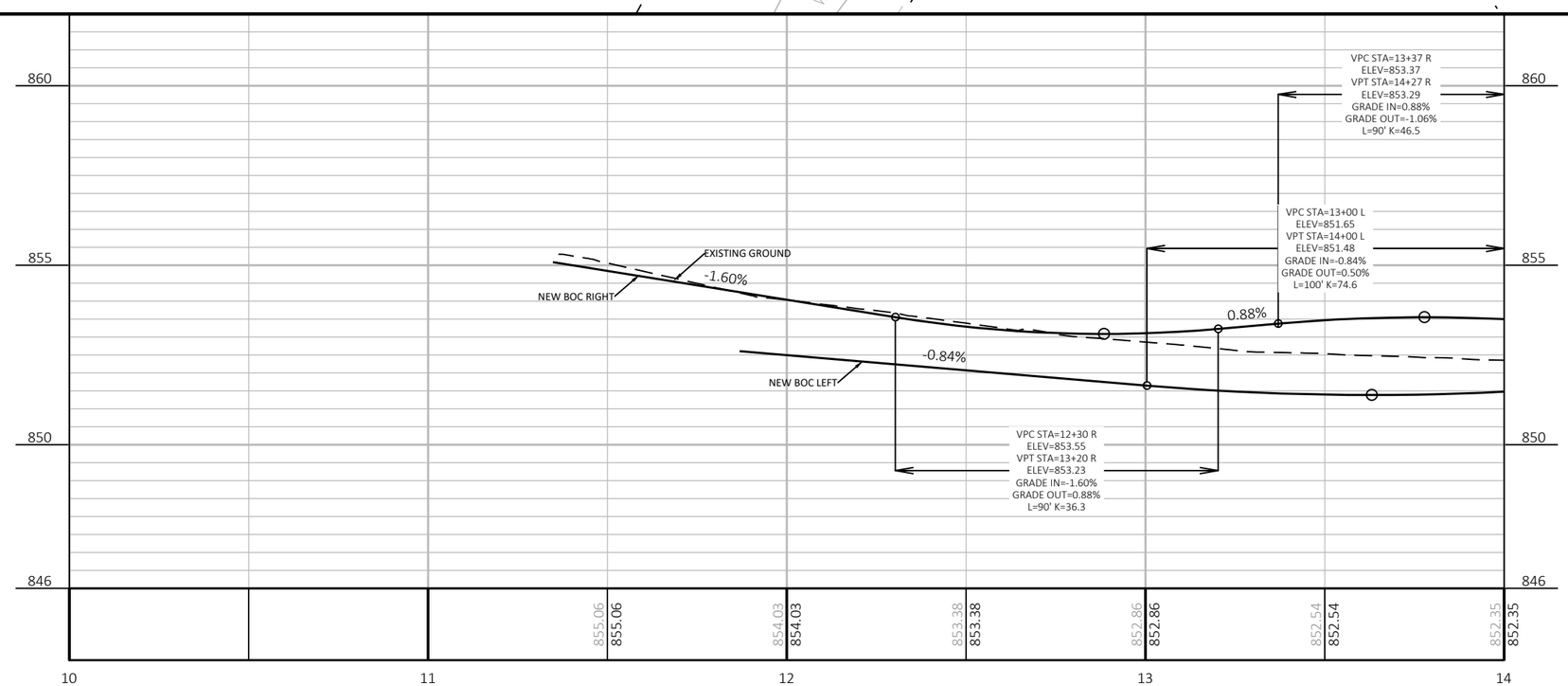
EXCHANGE STREET
STA. 12+51 - STA. 55+80

*THE CROWN OF THE ROAD SHALL BE CREATED USING THE ¾-INCH CRUSHED BASE COURSE. THE THICKNESS SHOWN IS THE MINIMUM THICKNESS REQUIRED AS MEASURED AT THE CONCRETE CURB AN GUTTER SECTION.

**THE 3-INCH BREAKER RUN BASE COURSE THICKNESS MAY NEED TO BE INCREASED DEPENDING UPON SUBGRADE CONDITIONS.

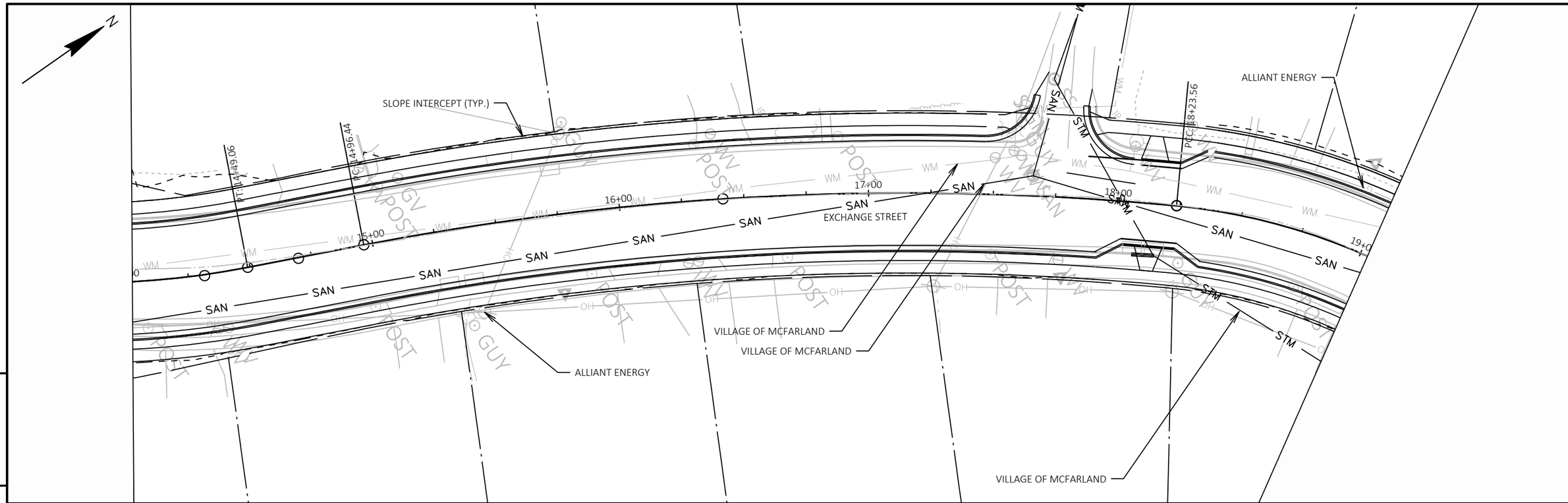
PROJECT NO: 5685-00-04/05	HWY: EXCHANGE STREET	COUNTY: DANE	TYPICAL SECTIONS	SHEET	E

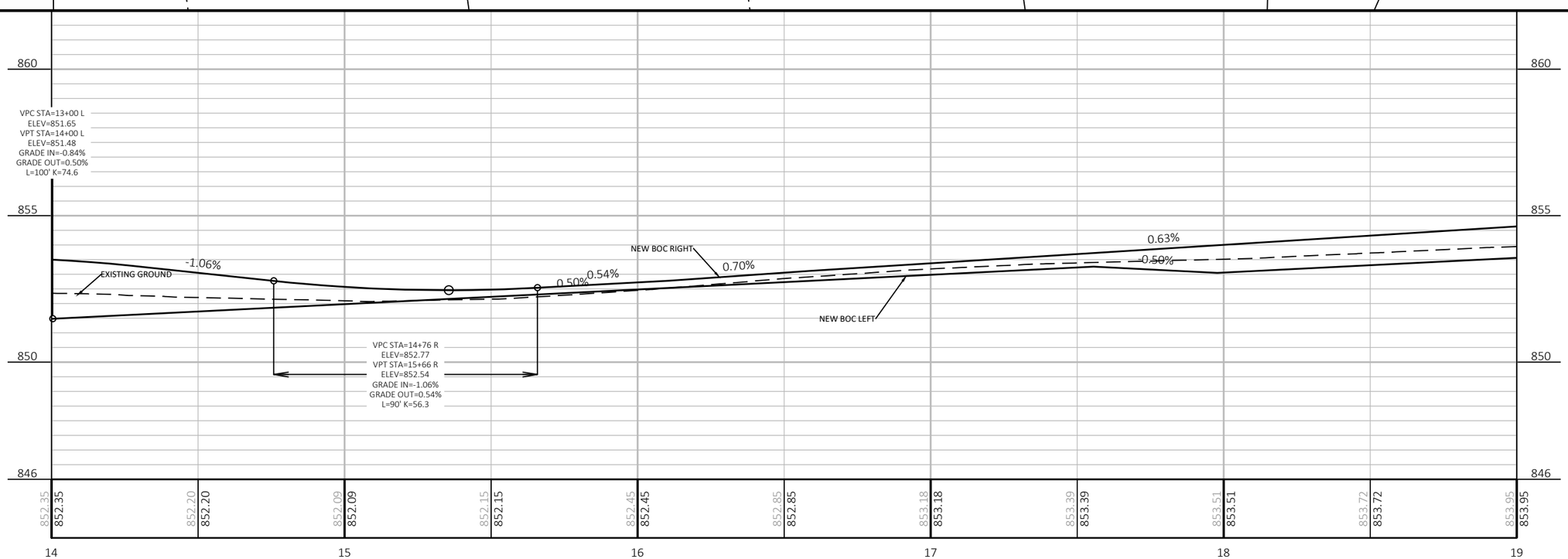




PROJECT NO: 5685-00-04/05	HWY: EXCHANGE STREET	COUNTY: DANE	PLAN AND PROFILE: EXCHANGE STREET	SHEET	E

FILE NAME : J:\JOB#S\MCFARLAND\MC-134-M4 EXCHANGE STREET PRELIMINARY ENGINEERING (FILE)\DRAWING\MC 134 PLAN PROFILE.DWG
LAYOUT NAME - 01
PLOT DATE : 6/9/2022 1:04 PM
PLOT BY : TIM STIEVE
PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 44





PROJECT NO: 5685-00-04/05	HWY: EXCHANGE STREET	COUNTY: DANE	PLAN AND PROFILE: EXCHANGE STREET	SHEET	E

FILE NAME : J:\JOB#S\MCFARLAND\MC-134-M4 EXCHANGE STREET PRELIMINARY ENGINEERING (FILE)\DRAWING\MC 134 PLAN PROFILE.DWG
LAYOUT NAME - 02
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PLOT BY : TIM STIEVE
PLOT NAME :
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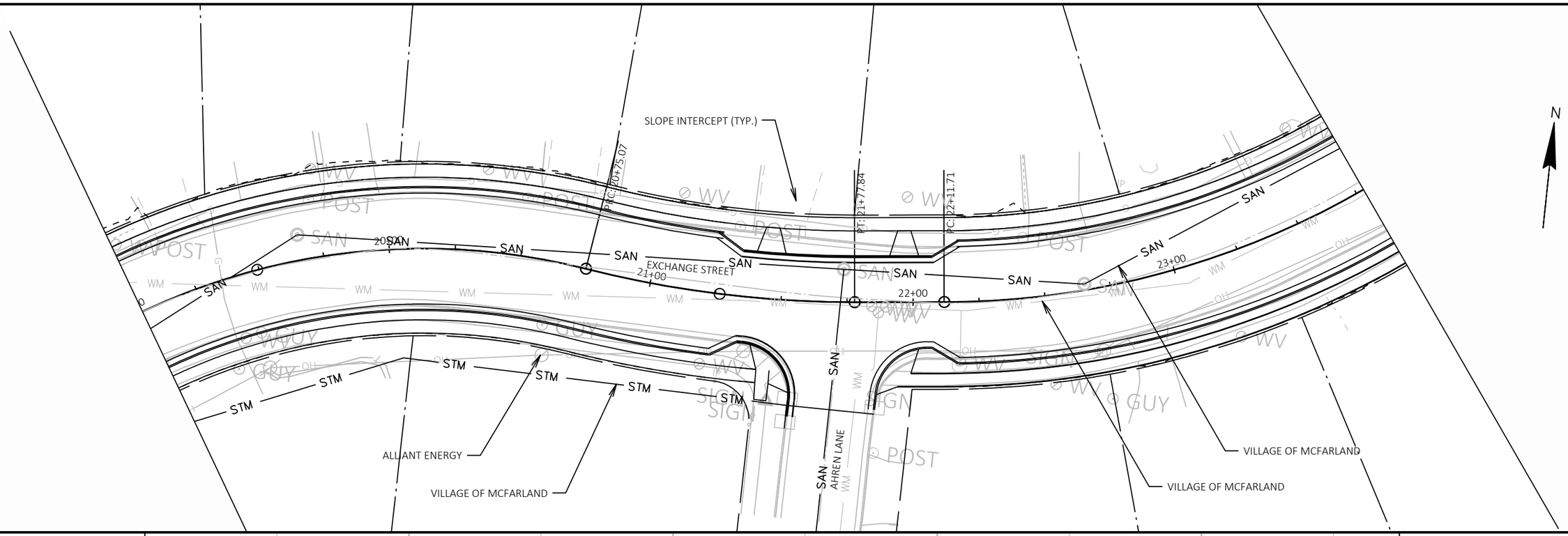
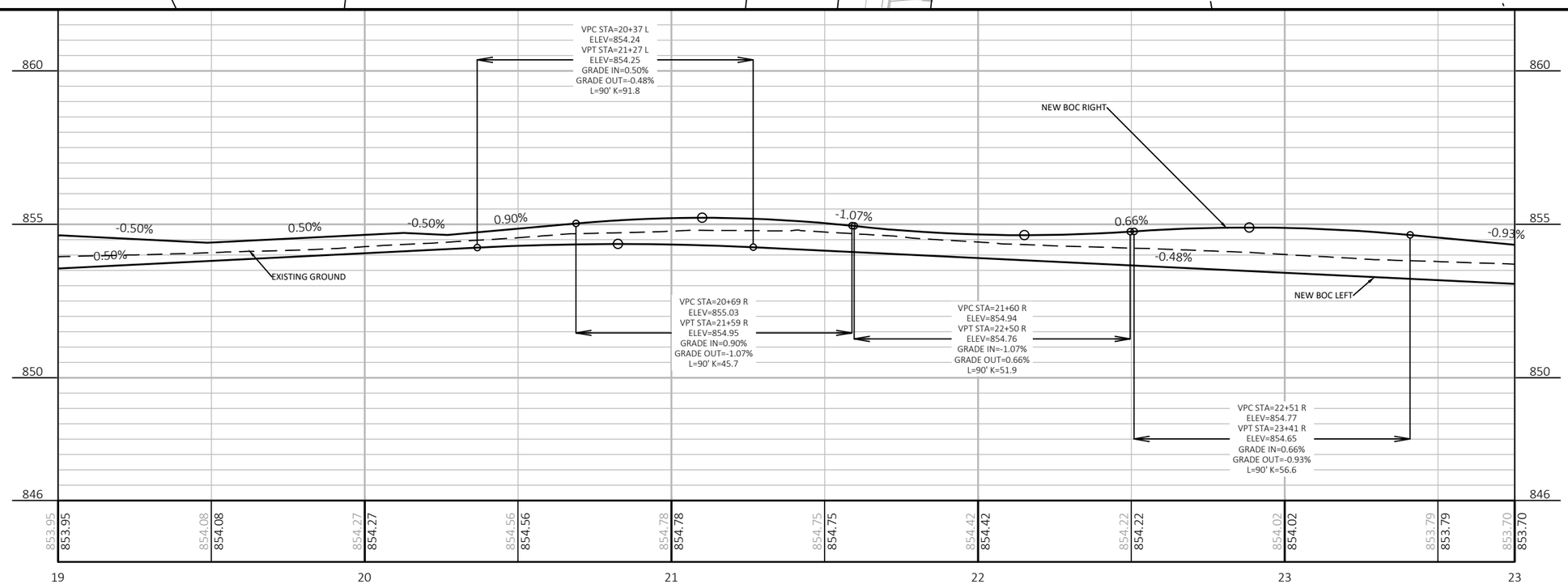
WISDOT/CADDS SHEET 44





PROJECT NO: 5685-00-04/05	HWY: EXCHANGE STREET	COUNTY: DANE	PLAN AND PROFILE: EXCHANGE STREET	SHEET	E

FILE NAME : J:\JOB#S\MCFARLAND\MC-134-M4 EXCHANGE STREET PRELIMINARY ENGINEERING (FILE)\DRAWING\MC 134 PLAN PROFILE.DWG
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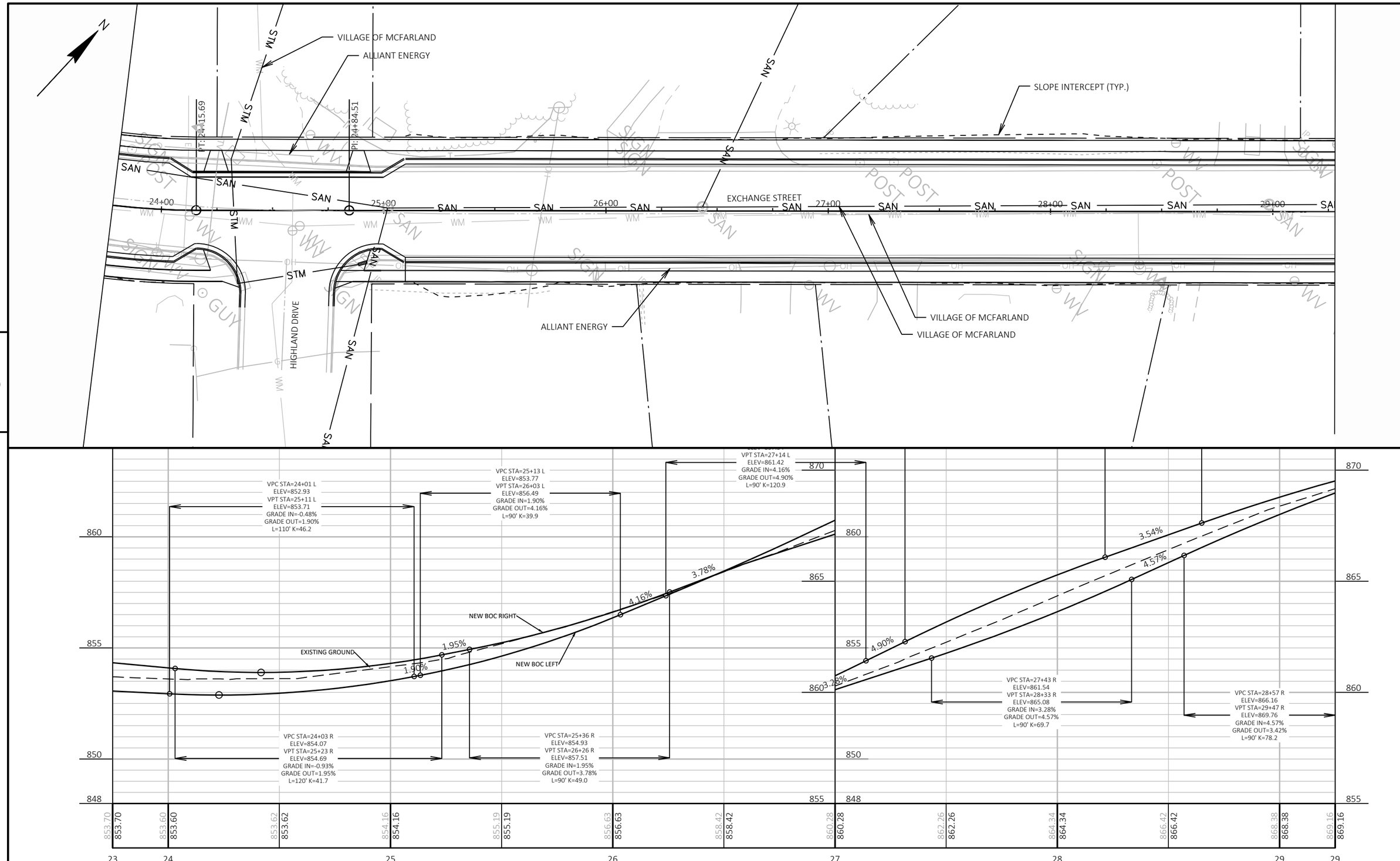
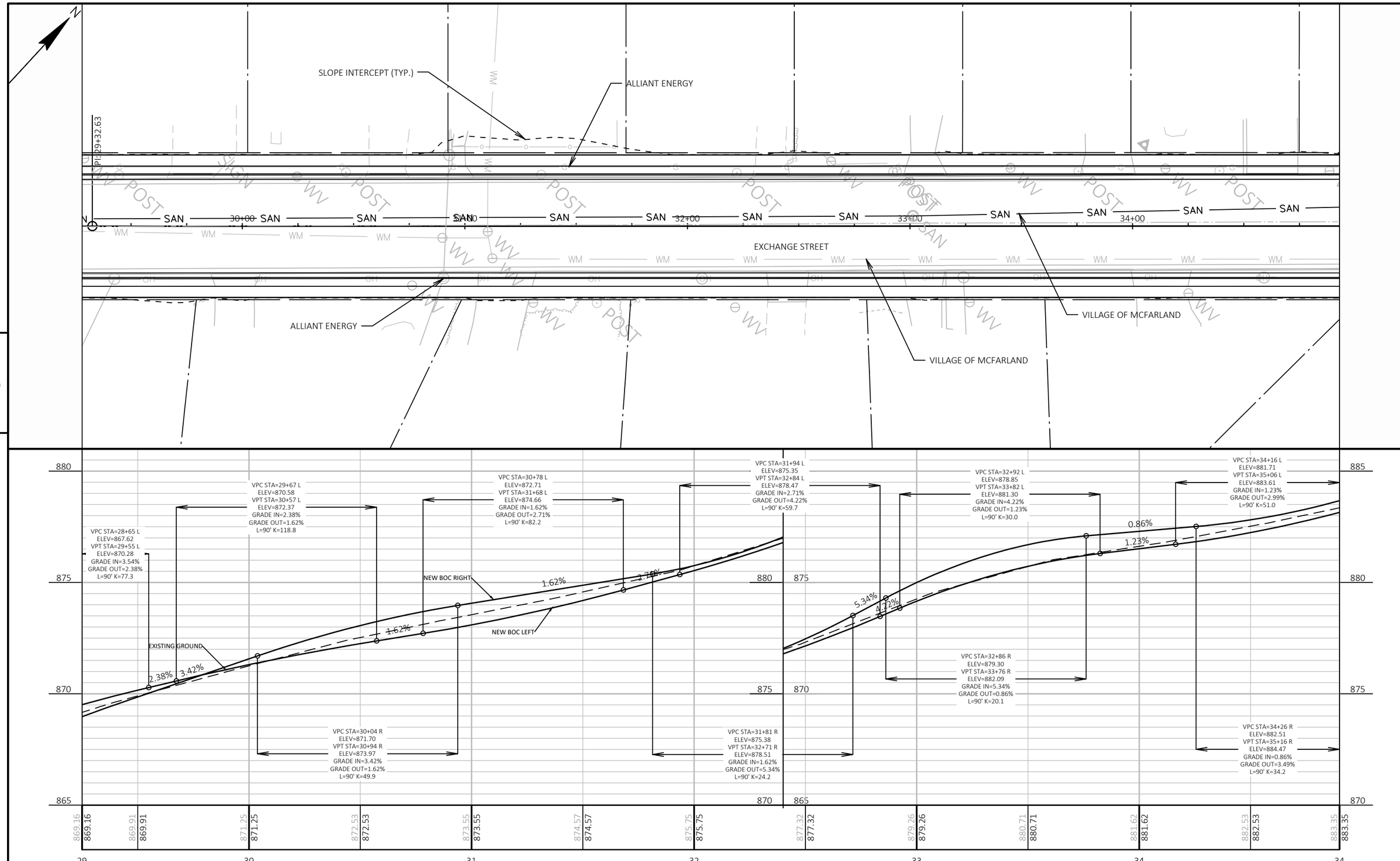
PLOT BY : TIM STIEVE
PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 44



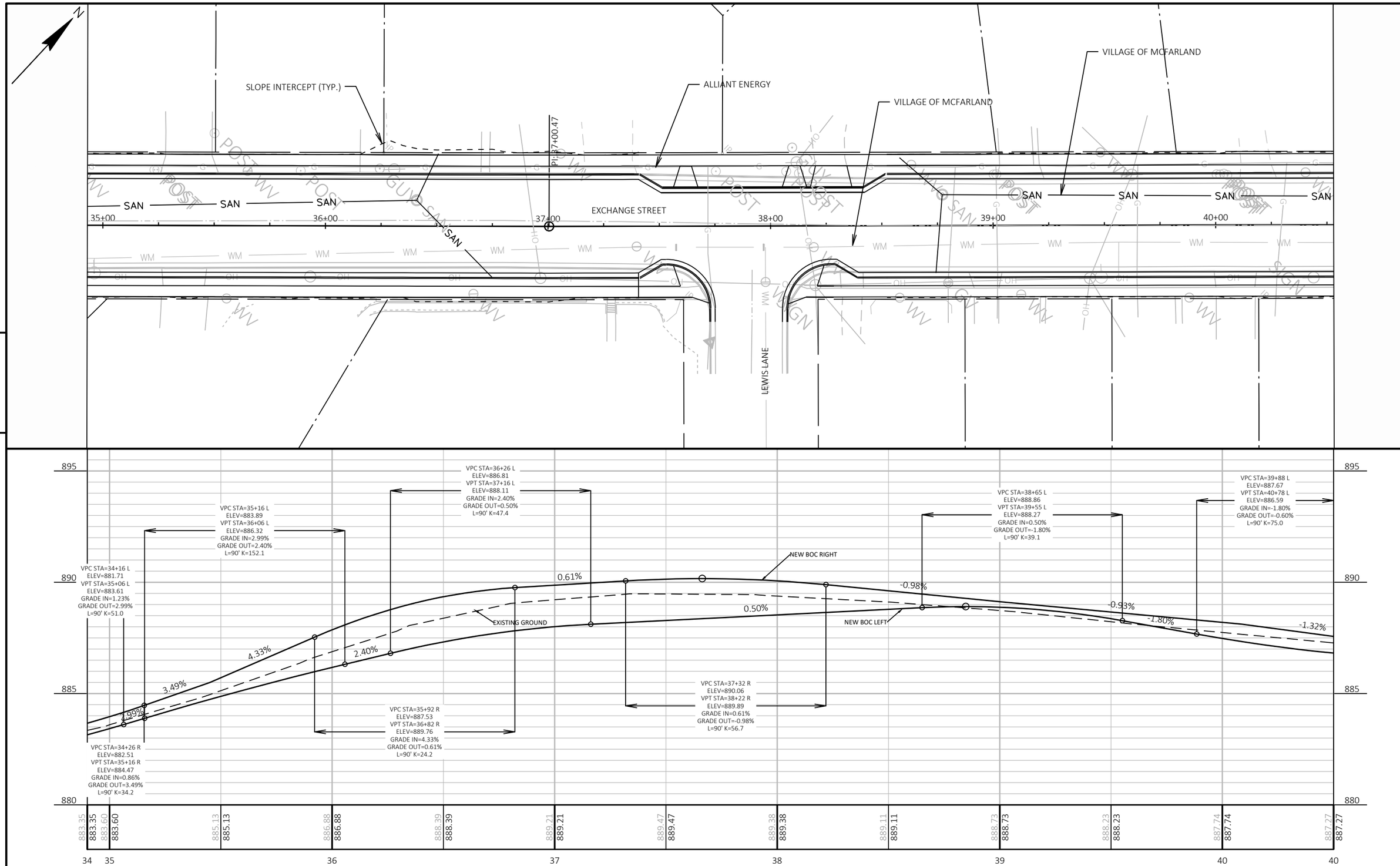
PROJECT NO: 5685-00-04/05	HWY: EXCHANGE STREET	COUNTY: DANE	PLAN AND PROFILE: EXCHANGE STREET	SHEET	E

FILE NAME : J:\JOB#S\MCFARLAND\MC-134-M4 EXCHANGE STREET PRELIMINARY ENGINEERING (FILE)\DRAWING\MC 134 PLAN PROFILE.DWG
LAYOUT NAME - 04
PLOT DATE : 6/9/2022 1:24 PM PLOT BY : TIM STIEVE PLOT NAME : PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 44



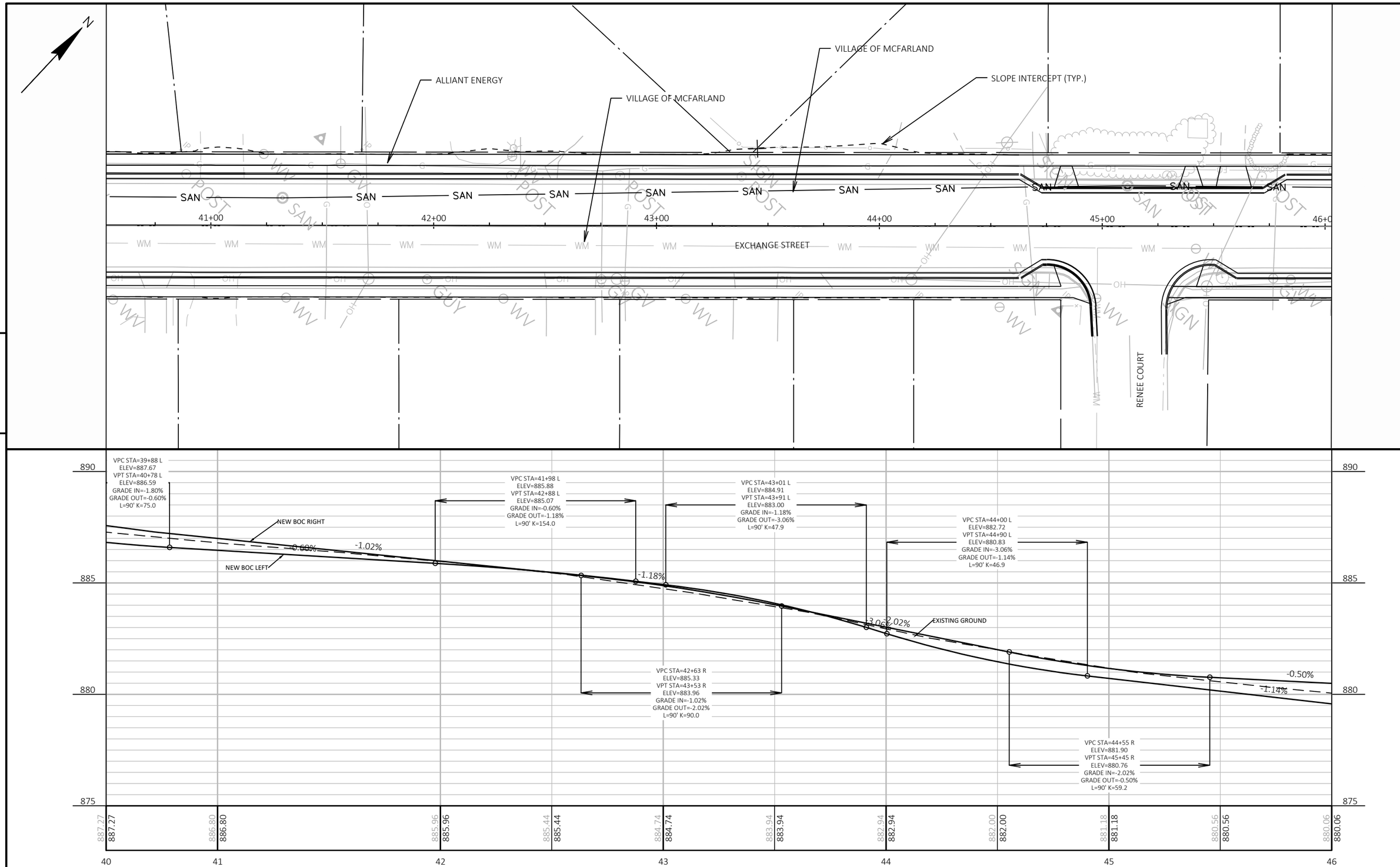
PROJECT NO: 5685-00-04/05	HWY: EXCHANGE STREET	COUNTY: DANE	PLAN AND PROFILE: EXCHANGE STREET	SHEET	E

FILE NAME : J:\JOB#S\MCFARLAND\MC-134-M4 EXCHANGE STREET PRELIMINARY ENGINEERING (FILE)\DRAWING\MC 134 PLAN PROFILE.DWG
LAYOUT NAME - 05
PLOT DATE : 6/9/2022 1:38 PM
PLOT BY : TIM STIEVE
PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 44



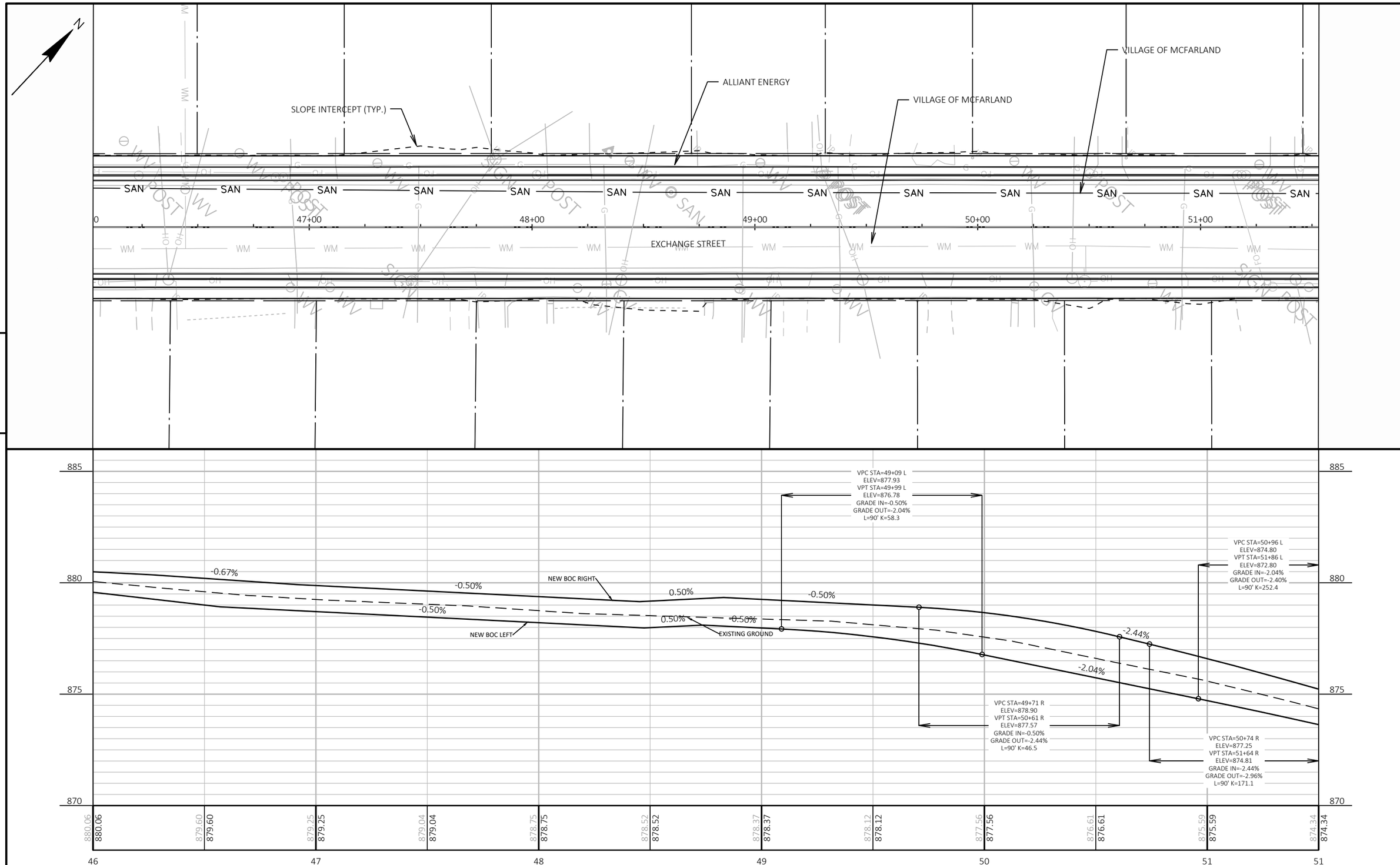
PROJECT NO: 5685-00-04/05	HWY: EXCHANGE STREET	COUNTY: DANE	PLAN AND PROFILE: EXCHANGE STREET	SHEET	E

FILE NAME : J:\JOB#S\MCFARLAND\MC-134-M4 EXCHANGE STREET PRELIMINARY ENGINEERING (FILE)\DRAWING\MC 134 PLAN PROFILE.DWG
LAYOUT NAME - 06
PLOT DATE : 6/9/2022 1:43 PM
PLOT BY : TIM STIEVE
PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 44



PROJECT NO: 5685-00-04/05	HWY: EXCHANGE STREET	COUNTY: DANE	PLAN AND PROFILE: EXCHANGE STREET	SHEET	E

FILE NAME : J:\JOB#S\MCFARLAND\MC-134-M4 EXCHANGE STREET PRELIMINARY ENGINEERING (FILE)\DRAWING\MC 134 PLAN PROFILE.DWG
LAYOUT NAME - 07
PLOT DATE : 6/9/2022 1:46 PM
PLOT BY : TIM STIEVE
PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 44



PROJECT NO: 5685-00-04/05	HWY: EXCHANGE STREET	COUNTY: DANE	PLAN AND PROFILE: EXCHANGE STREET	SHEET	E

FILE NAME : J:\JOB#S\MCFARLAND\MC-134-M4 EXCHANGE STREET PRELIMINARY ENGINEERING (FILE)\DRAWING\MC 134 PLAN PROFILE.DWG
LAYOUT NAME - 08
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PLOT NAME :
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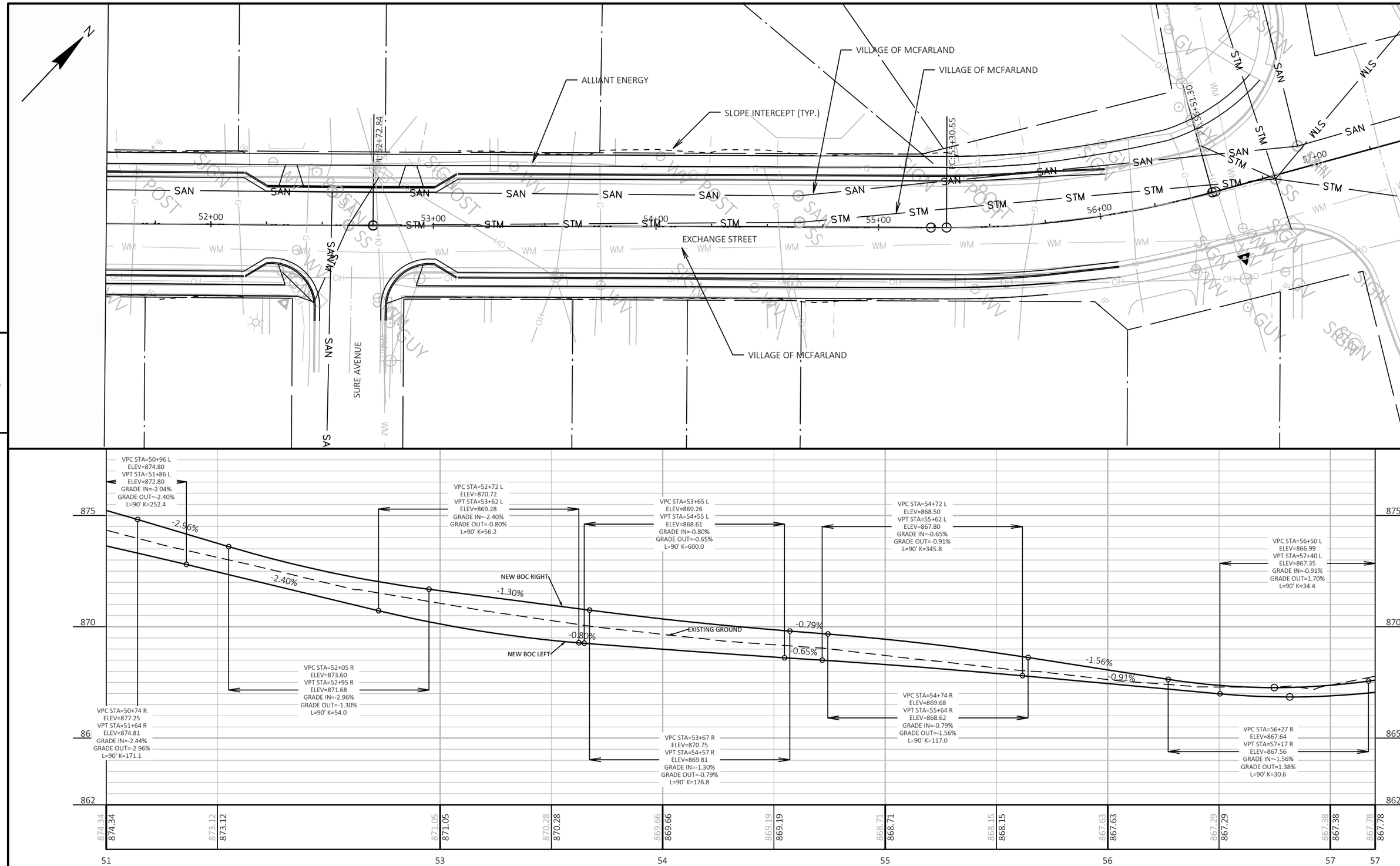
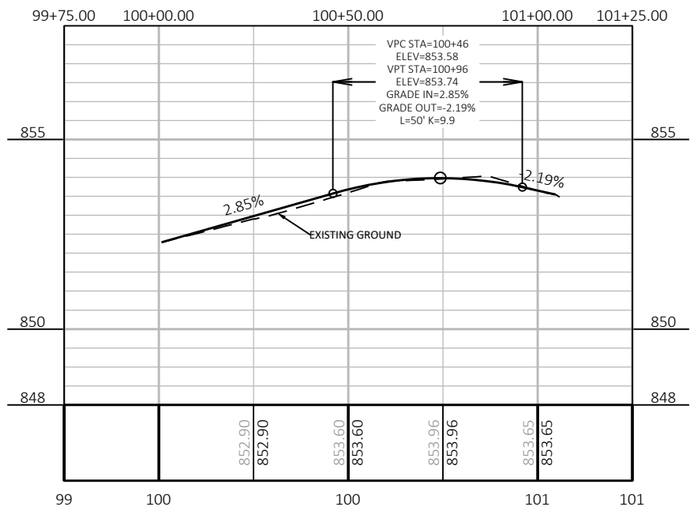
WISDOT/CADDS SHEET 44



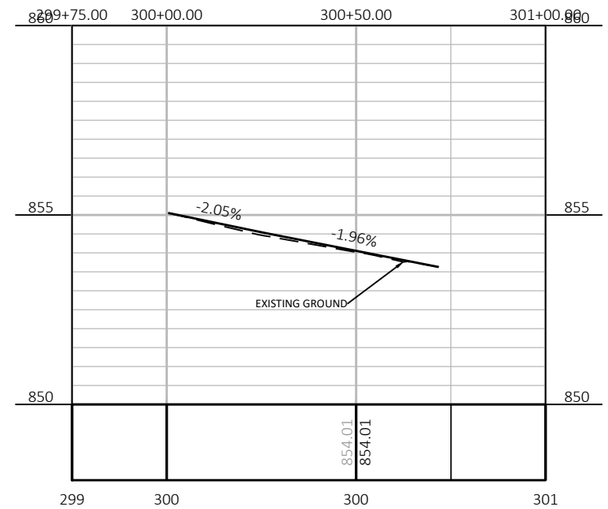
PROJECT NO: 5685-00-04/05	HWY: EXCHANGE STREET	COUNTY: DANE	PLAN AND PROFILE: EXCHANGE STREET	SHEET	E

FILE NAME : J:\JOB#S\MCFARLAND\MC-134-M4 EXCHANGE STREET PRELIMINARY ENGINEERING (FILE)\DRAWING\MC 134 PLAN PROFILE.DWG
LAYOUT NAME - 09
PLOT DATE : 6/9/2022 1:50 PM
PLOT BY : TIM STIEVE
PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 44

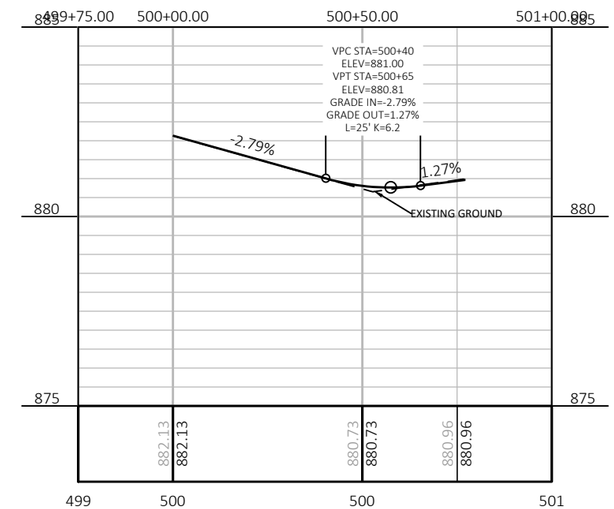
Profile View of SLEEPY HOLLOW ALIGNMENT
V Scale : 4
H Scale : 40
Exaggeration : 10



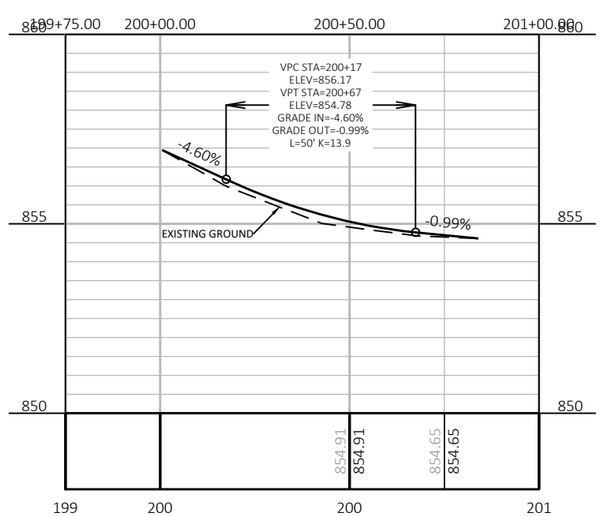
Profile View of HIGHLAND ALIGNMENT
V Scale : 4
H Scale : 40
Exaggeration : 10



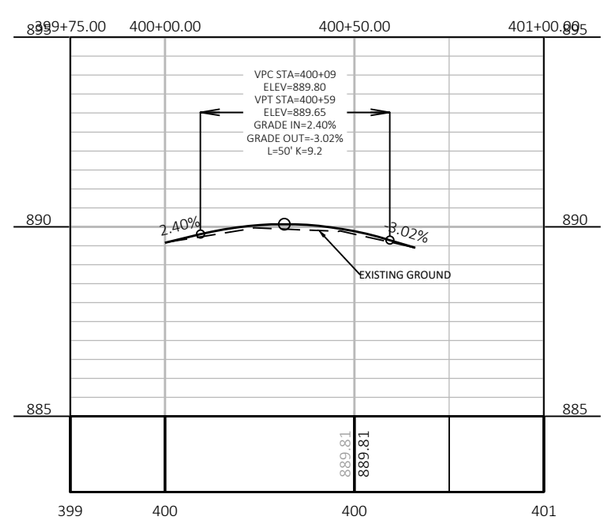
Profile View of RENEE ALIGNMENT
V Scale : 4
H Scale : 40
Exaggeration : 10



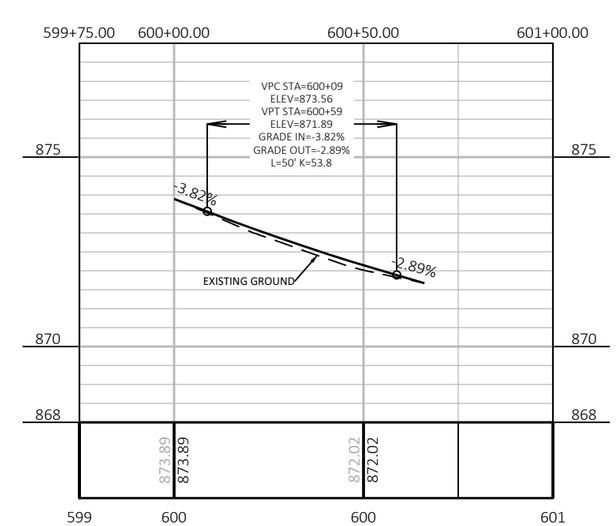
Profile View of AHREN ALIGNMENT
V Scale : 4
H Scale : 40
Exaggeration : 10



Profile View of LEWIS ALIGNMENT
V Scale : 4
H Scale : 40
Exaggeration : 10



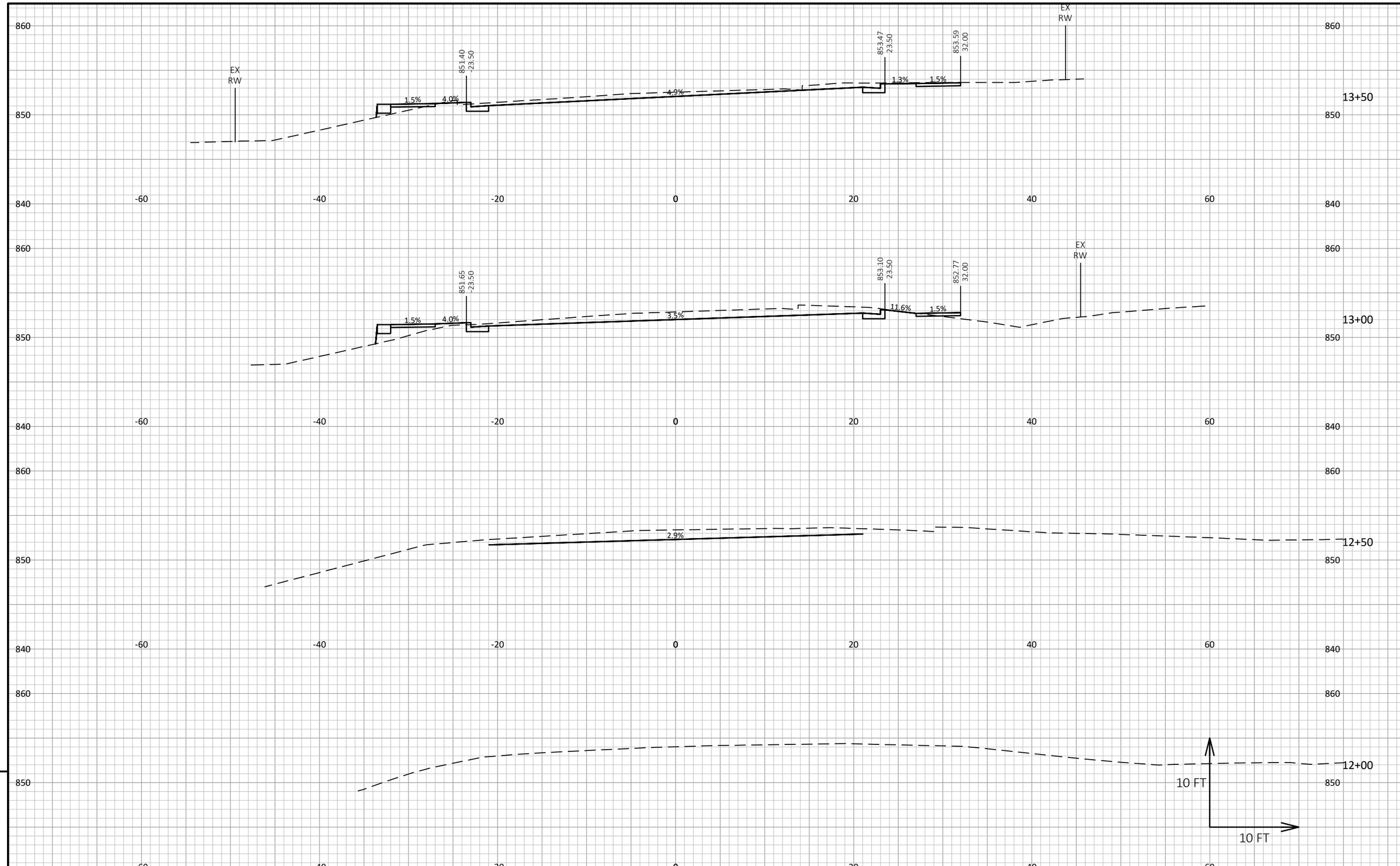
Profile View of SURE ALIGNMENT
V Scale : 4
H Scale : 40
Exaggeration : 10



PROJECT NO: 5685-00-04/05	HWY: EXCHANGE STREET	COUNTY: DANE	SIDE STREET PROFILES	SHEET	E

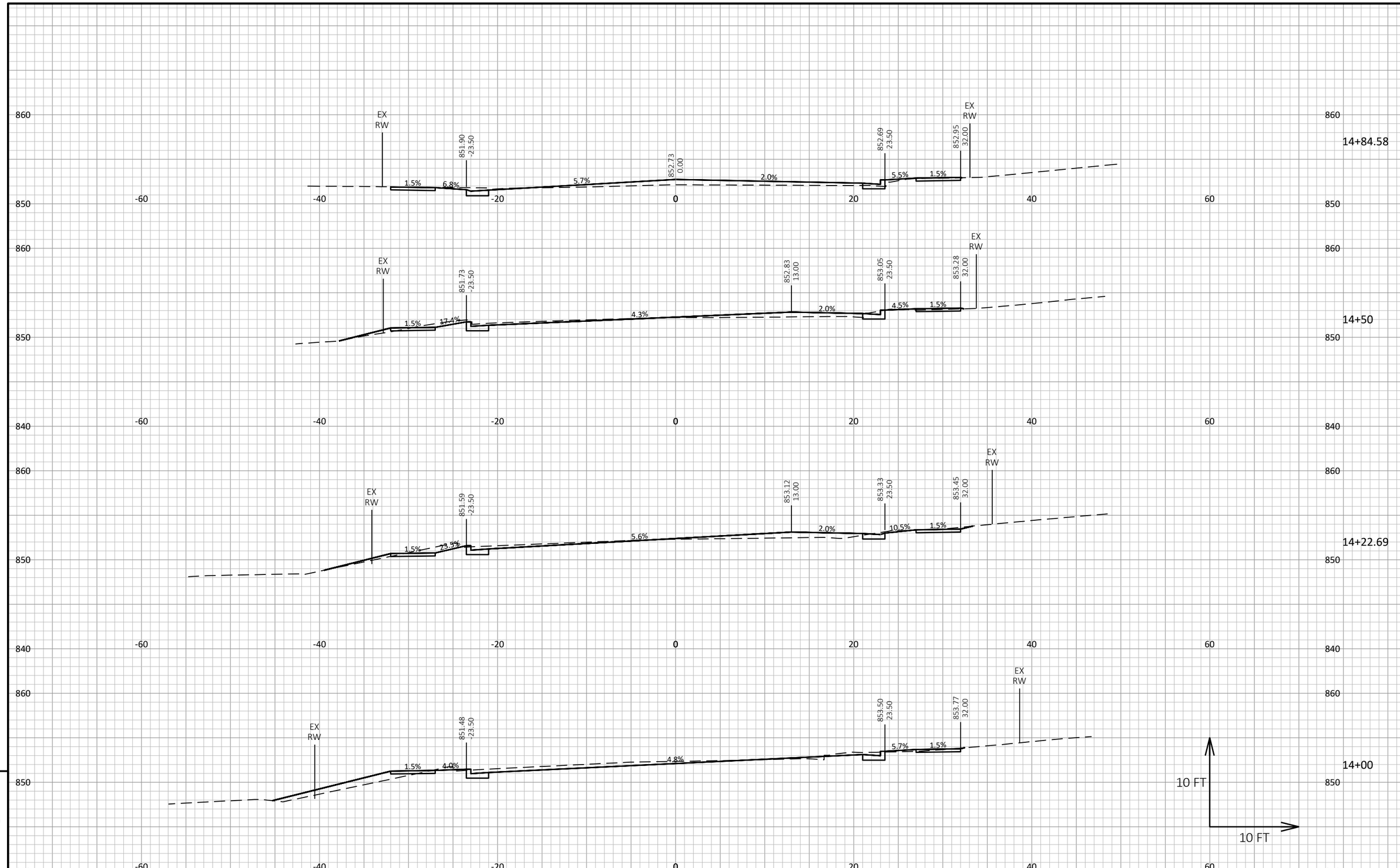
FILE NAME : J:\JOB#S\MCFARLAND\MC-134-M4 EXCHANGE STREET PRELIMINARY ENGINEERING (FILE)\DRAWING\MC 134 SIDE STREET PROFILES.DWG
LAYOUT NAME - SIDE STREET PROFILE
PLOT DATE : 6/9/2022 1:52 PM PLOT BY : TIM STIEVE PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 44



PROJECT NO: 5685-00-04/05	HWY: EXCHANGE STREET	COUNTY: DANE	CROSS SECTIONS: SECTION VIEW GROUP - 1	SHEET	E

FILE NAME : J:\JOB#S\MCFARLAND\MC-134-M4 EXCHANGE STREET PRELIMINARY ENGINEERING (FILE)\DRAWING\MC 134 ALIGNMENT CORRIDOR.DWG
LAYOUT NAME - 1
PLOT DATE : 6/9/2022 1:58 PM
PLOT BY : TIM STIEVE
PLOT NAME :
PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.
WISDOT/CADDS SHEET 49



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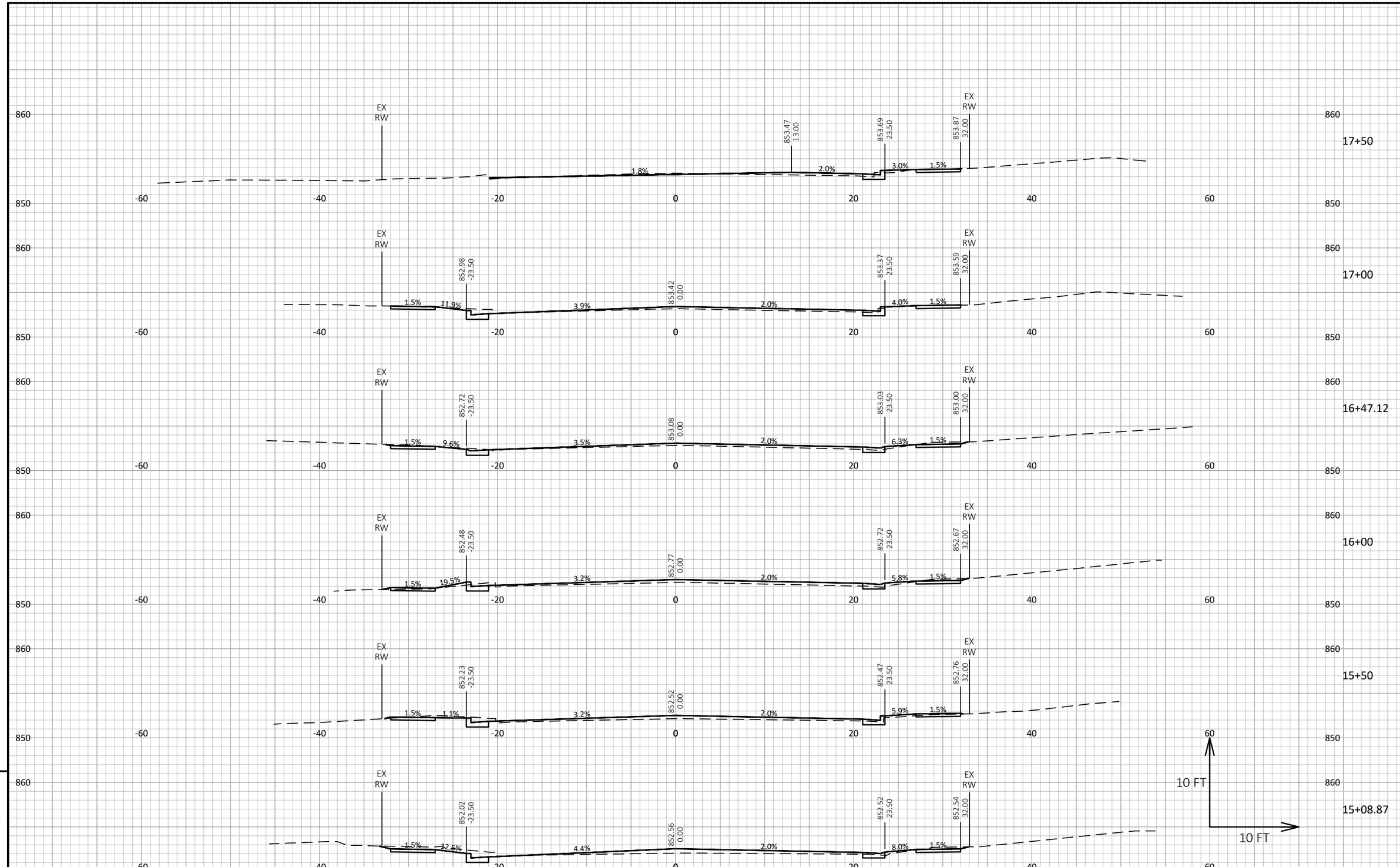
PROJECT NO: 5685-00-04/05	HWY: EXCHANGE STREET	COUNTY: DANE	CROSS SECTIONS: SECTION VIEW GROUP - 1	SHEET	E

FILE NAME : J:\JOB#S\MCFARLAND\MC-134-M4 EXCHANGE STREET PRELIMINARY ENGINEERING (FILE)\DRAWING\MC 134 ALIGNMENT CORRIDOR.DWG
LAYOUT NAME - 2

PLOT DATE : 6/9/2022 1:58 PM PLOT BY : TIM STIEVE PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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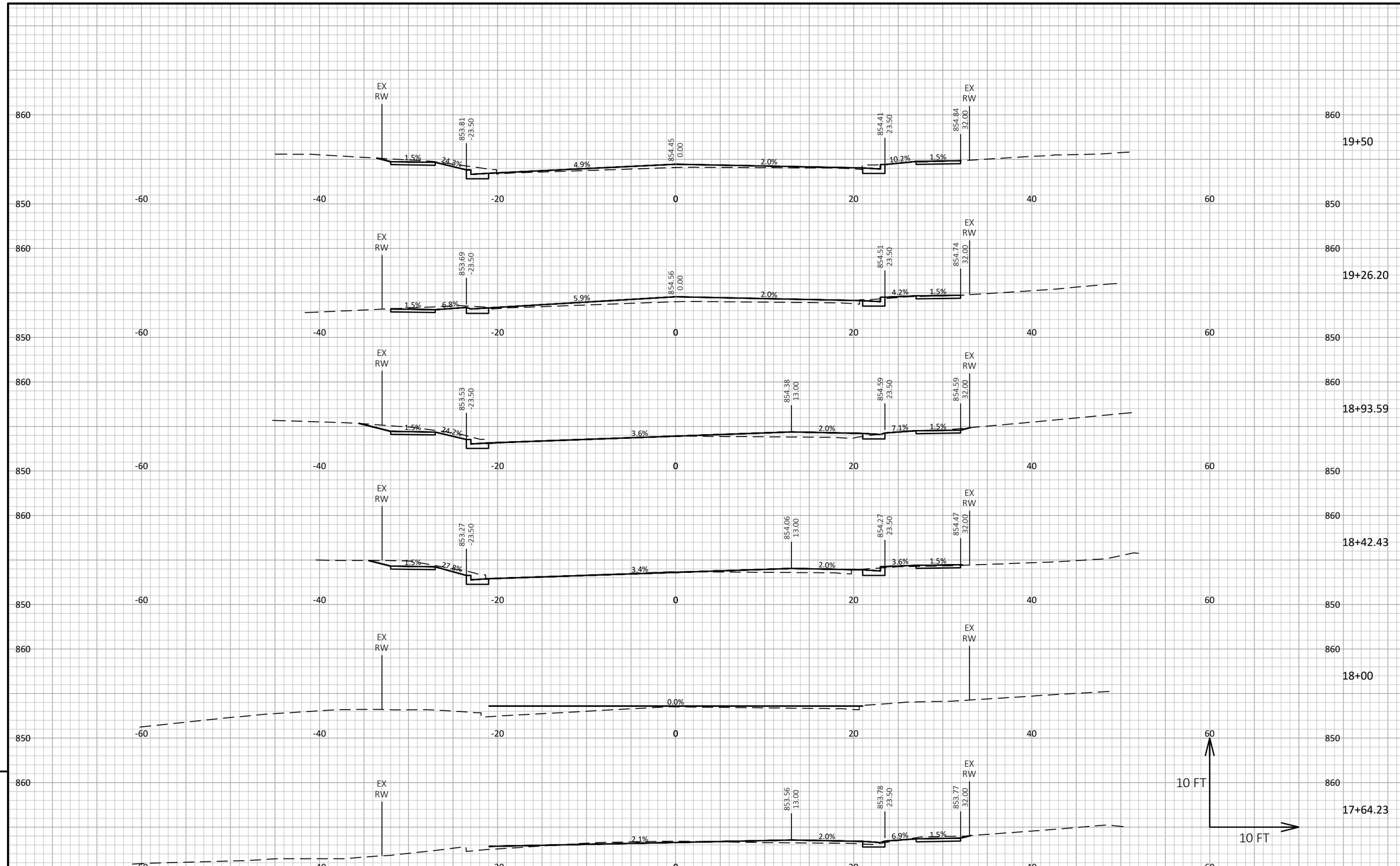
PROJECT NO: 5685-00-04/05	HWY: EXCHANGE STREET	COUNTY: DANE	CROSS SECTIONS: SECTION VIEW GROUP - 1	SHEET	E

FILE NAME : J:\JOB#S\MCFARLAND\MC-134-M4 EXCHANGE STREET PRELIMINARY ENGINEERING (FILE)\DRAWING\MC 134 ALIGNMENT CORRIDOR.DWG
LAYOUT NAME - 3

PLOT DATE : 6/9/2022 1:58 PM PLOT BY : TIM STIEVE PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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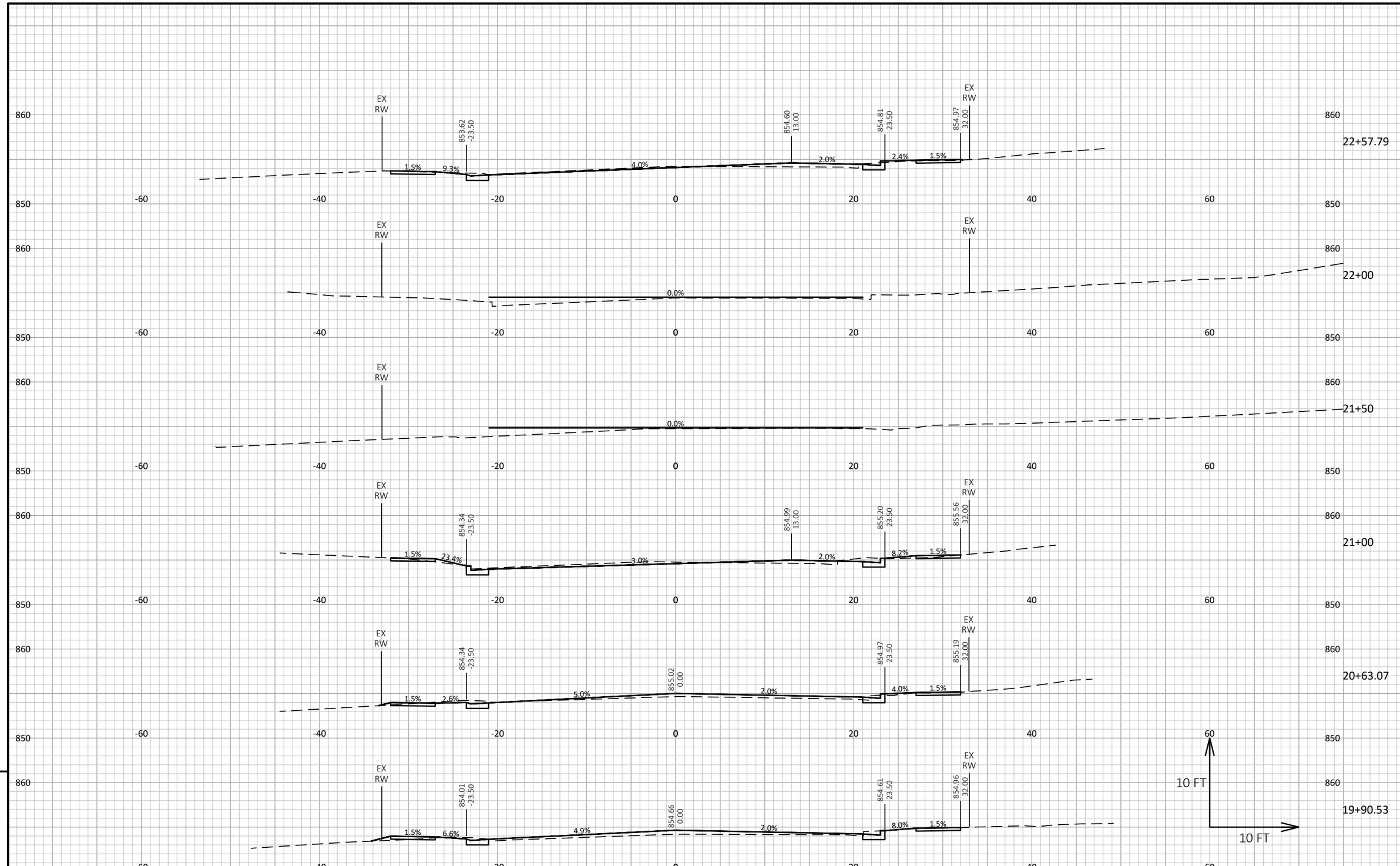
PROJECT NO: 5685-00-04/05	HWY: EXCHANGE STREET	COUNTY: DANE	CROSS SECTIONS: SECTION VIEW GROUP - 1	SHEET	E

FILE NAME : J:\JOB#S\MCFARLAND\MC-134-M4 EXCHANGE STREET PRELIMINARY ENGINEERING (FILE)\DRAWING\MC 134 ALIGNMENT CORRIDOR.DWG
LAYOUT NAME - 4
PLOT DATE : 6/9/2022 1:59 PM
PLOT BY : TIM STIEVE
PLOT NAME :
PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.
WISDOT/CADDS SHEET 49



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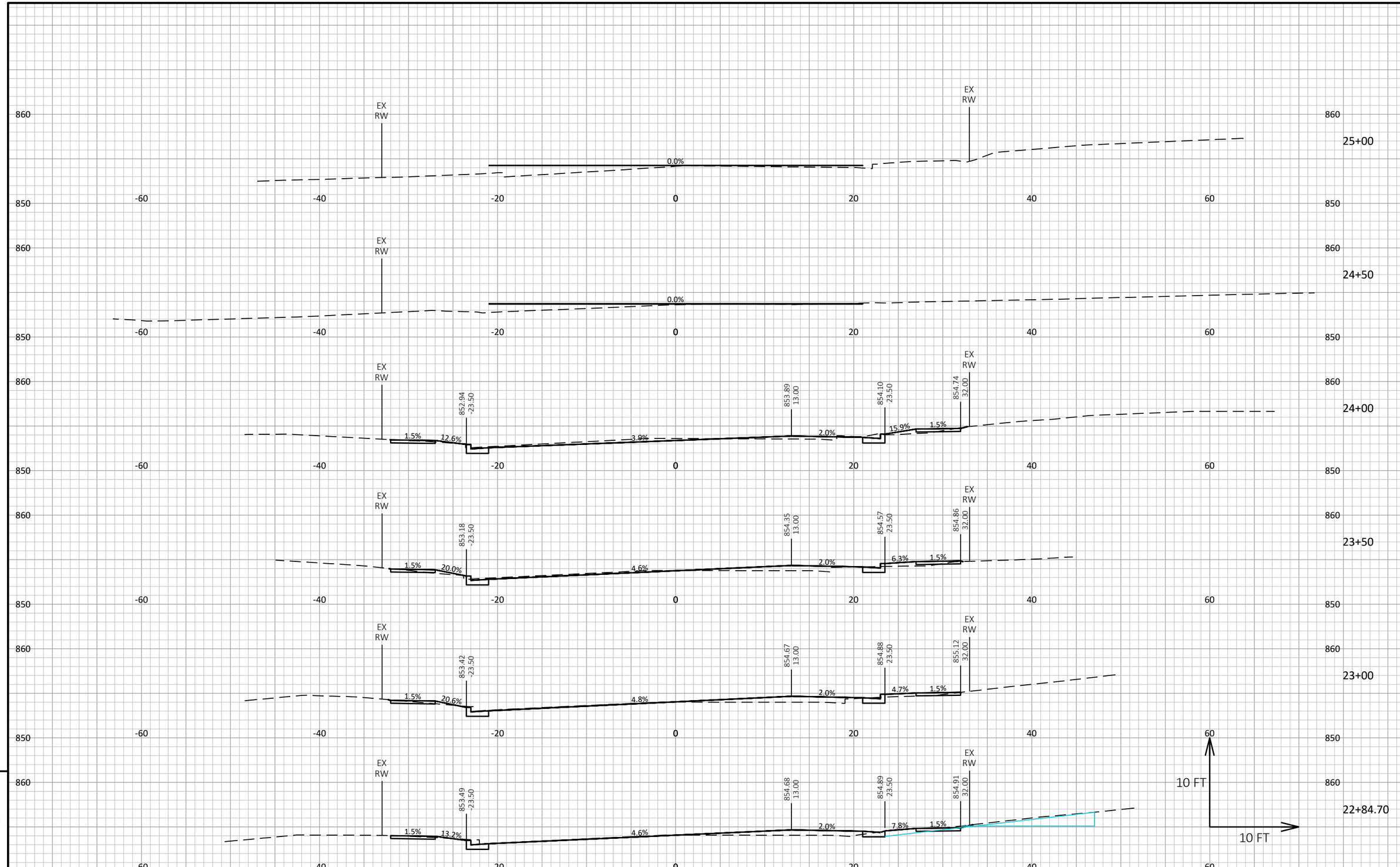
PROJECT NO: 5685-00-04/05	HWY: EXCHANGE STREET	COUNTY: DANE	CROSS SECTIONS: SECTION VIEW GROUP - 1	SHEET	E

FILE NAME : J:\JOB#S\MCFARLAND\MC-134-M4 EXCHANGE STREET PRELIMINARY ENGINEERING (FILE)\DRAWING\MC 134 ALIGNMENT CORRIDOR.DWG
LAYOUT NAME - 5

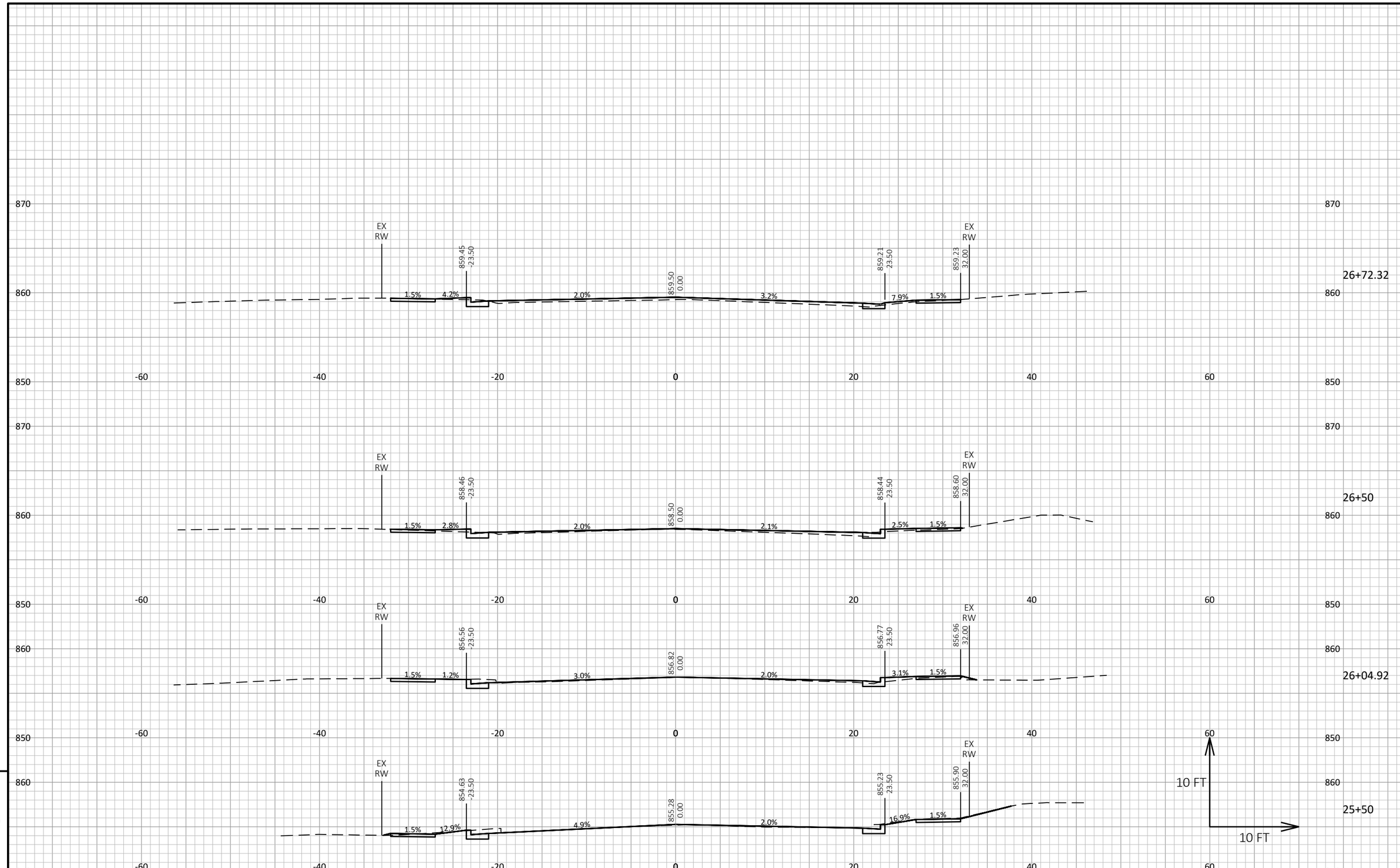
PLOT DATE : 6/9/2022 1:59 PM PLOT BY : TIM STIEVE PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



PROJECT NO: 5685-00-04/05	HWY: EXCHANGE STREET	COUNTY: DANE	CROSS SECTIONS: SECTION VIEW GROUP - 1	SHEET	E

FILE NAME : J:\JOB#S\MCFARLAND\MC-134-M4 EXCHANGE STREET PRELIMINARY ENGINEERING (FILE)\DRAWING\MC 134 ALIGNMENT CORRIDOR.DWG
LAYOUT NAME - 6
PLOT DATE : 6/9/2022 1:59 PM
PLOT BY : TIM STIEVE
PLOT NAME :
PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.
WISDOT/CADDS SHEET 49



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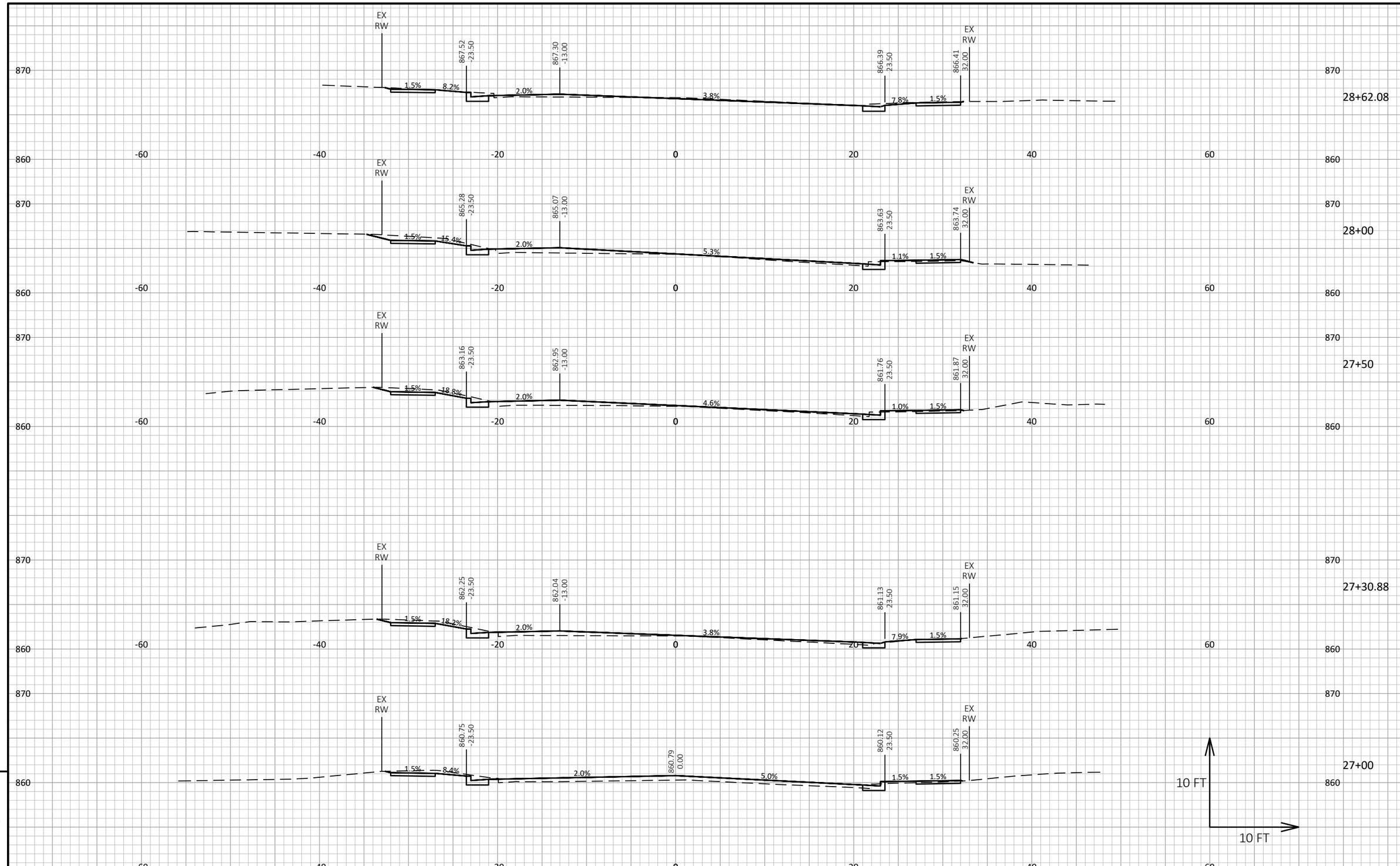
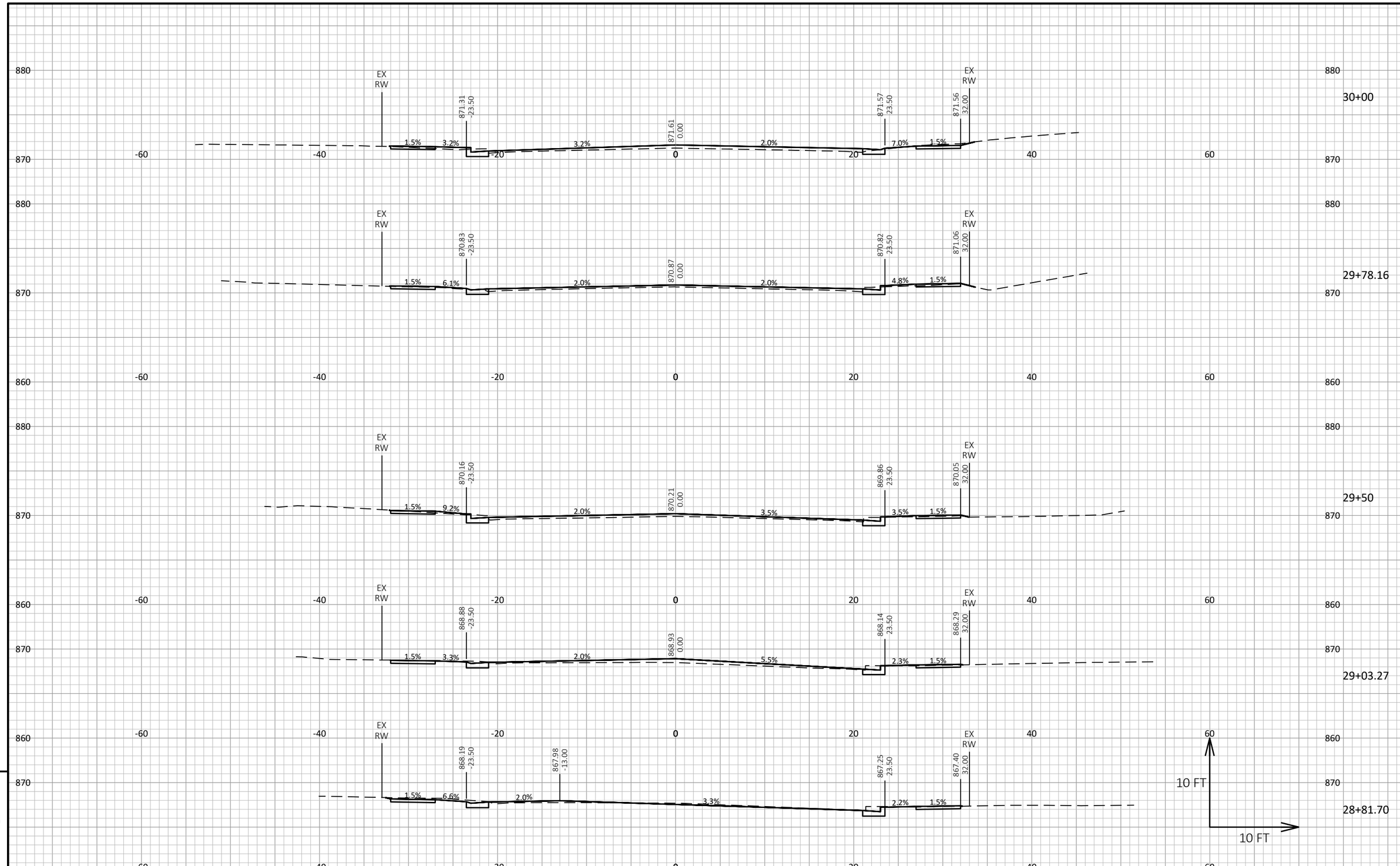
PROJECT NO: 5685-00-04/05	HWY: EXCHANGE STREET	COUNTY: DANE	CROSS SECTIONS: SECTION VIEW GROUP - 1	SHEET	E

FILE NAME : J:\JOB#S\MCFARLAND\MC-134-M4 EXCHANGE STREET PRELIMINARY ENGINEERING (FILE)\DRAWING\MC 134 ALIGNMENT CORRIDOR.DWG
LAYOUT NAME - 7
PLOT DATE : 6/9/2022 2:00 PM
PLOT BY : TIM STIEVE
PLOT NAME :
PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.
WISDOT/CADDS SHEET 49



PROJECT NO: 5685-00-04/05	HWY: EXCHANGE STREET	COUNTY: DANE	CROSS SECTIONS: SECTION VIEW GROUP - 1	SHEET	E

FILE NAME : J:\JOB#S\MCFARLAND\MC-134-M4 EXCHANGE STREET PRELIMINARY ENGINEERING (FILE)\DRAWING\MC 134 ALIGNMENT CORRIDOR.DWG
LAYOUT NAME - 8
PLOT DATE : 6/9/2022 2:00 PM
PLOT BY : TIM STIEVE
PLOT NAME :
PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.
WISDOT/CADDS SHEET 49



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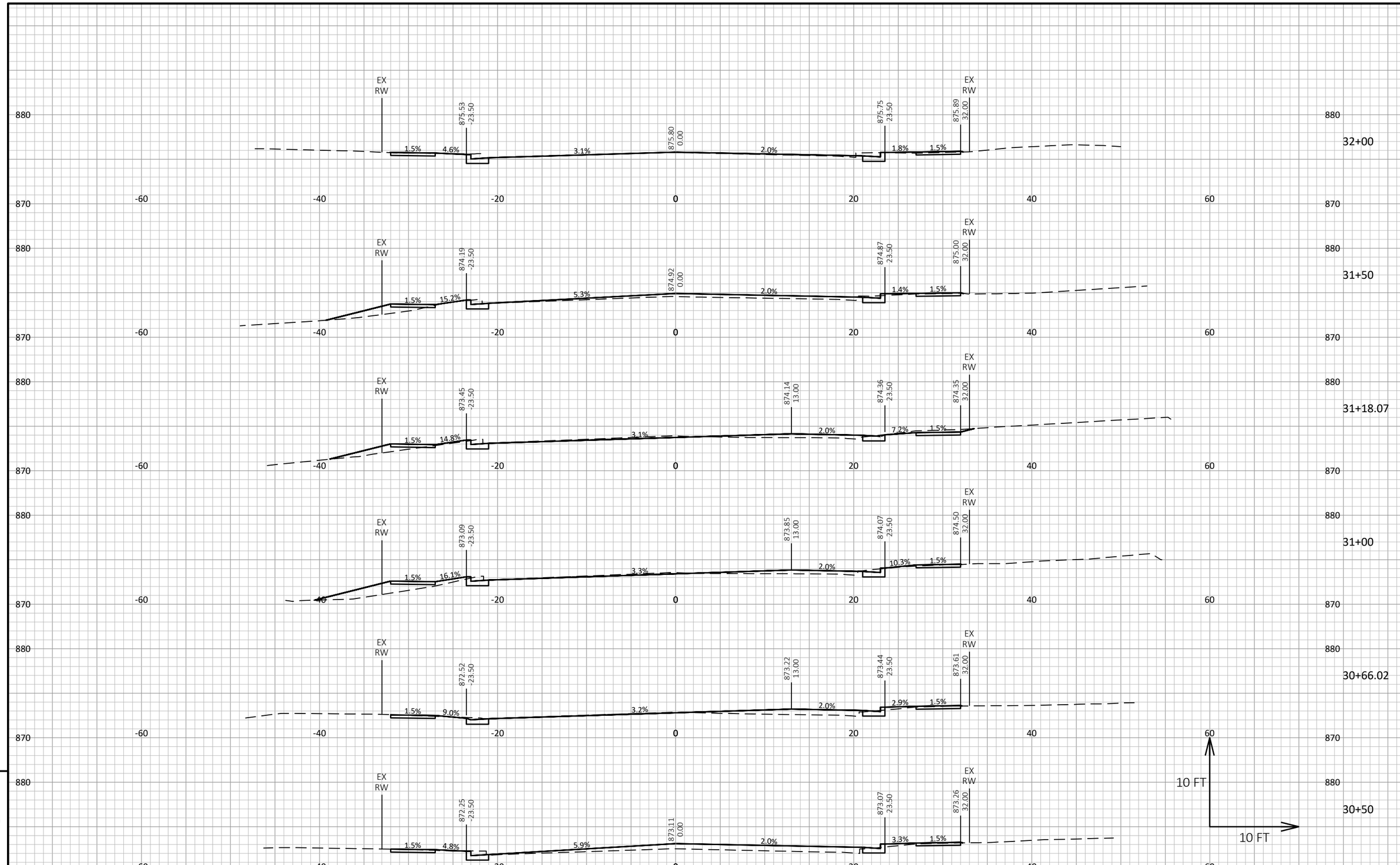
PROJECT NO: 5685-00-04/05	HWY: EXCHANGE STREET	COUNTY: DANE	CROSS SECTIONS: SECTION VIEW GROUP - 1	SHEET	E

FILE NAME : J:\JOB#S\MCFARLAND\MC-134-M4 EXCHANGE STREET PRELIMINARY ENGINEERING (FILE)\DRAWING\MC 134 ALIGNMENT CORRIDOR.DWG
LAYOUT NAME - 9
PLOT DATE : 6/9/2022 2:01 PM PLOT BY : TIM STIEVE PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.
WISDOT/CADDS SHEET 49



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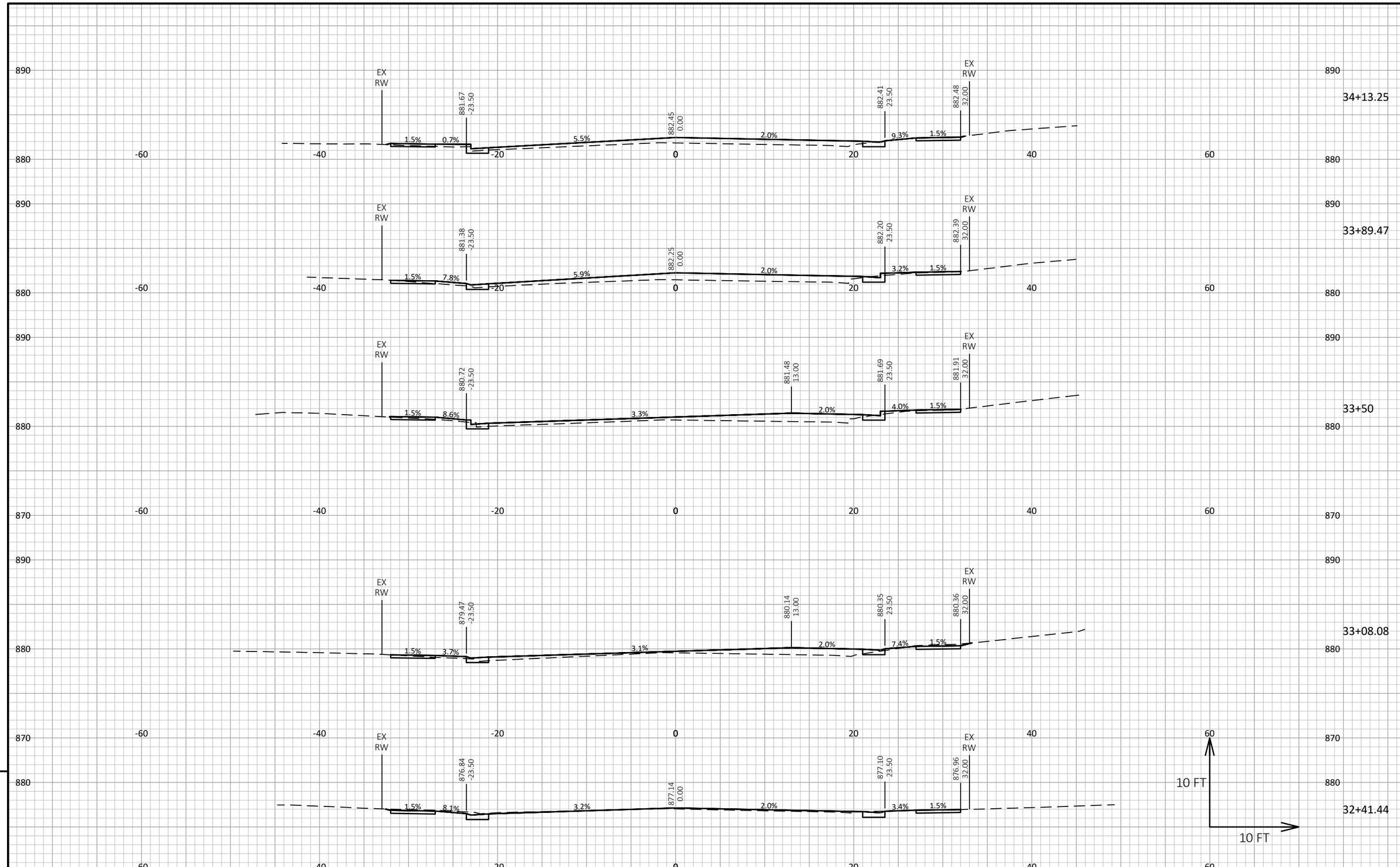
PROJECT NO: 5685-00-04/05	HWY: EXCHANGE STREET	COUNTY: DANE	CROSS SECTIONS: SECTION VIEW GROUP - 1	SHEET	E

FILE NAME : J:\JOB#S\MCFARLAND\MC-134-M4 EXCHANGE STREET PRELIMINARY ENGINEERING (FILE)\DRAWING\MC 134 ALIGNMENT CORRIDOR.DWG
LAYOUT NAME - 10

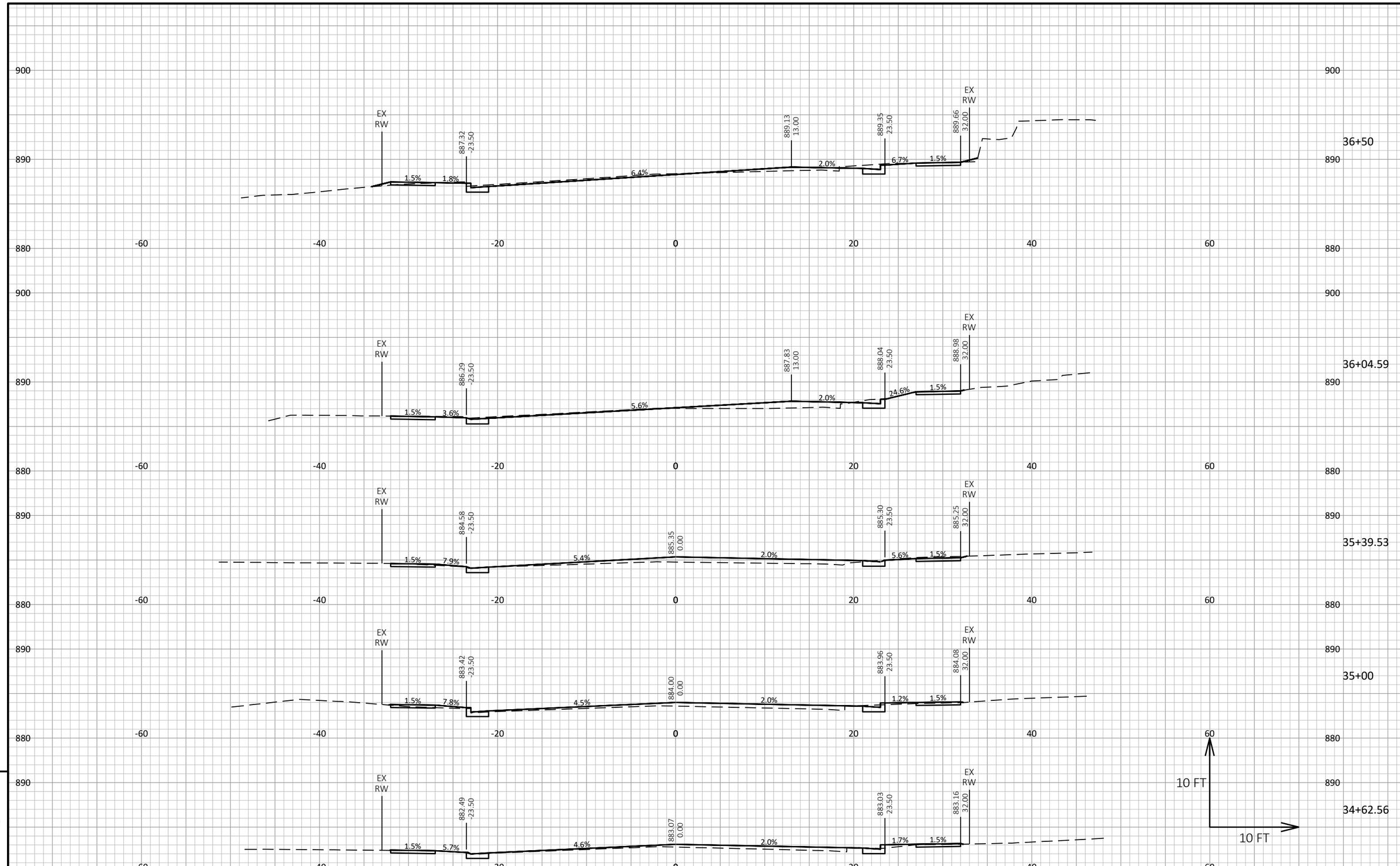
PLOT DATE : 6/9/2022 2:01 PM PLOT BY : TIM STIEVE PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



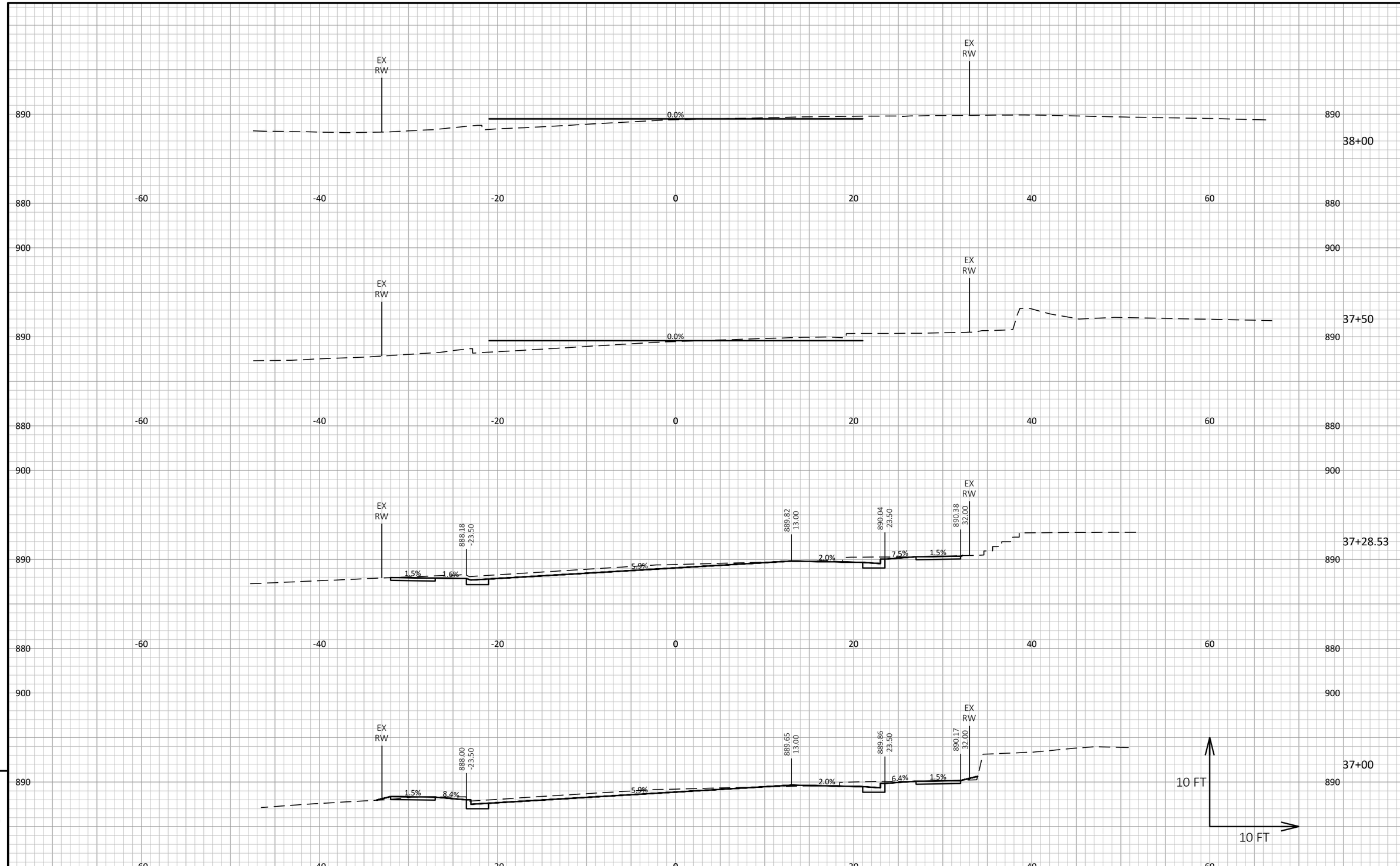
PROJECT NO: 5685-00-04/05	HWY: EXCHANGE STREET	COUNTY: DANE	CROSS SECTIONS: SECTION VIEW GROUP - 1	SHEET	E

FILE NAME : J:\JOB#S\MCFARLAND\MC-134-M4 EXCHANGE STREET PRELIMINARY ENGINEERING (FILE)\DRAWING\MC 134 ALIGNMENT CORRIDOR.DWG
LAYOUT NAME - 11
PLOT DATE : 6/9/2022 2:01 PM PLOT BY : TIM STIEVE PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.
WISDOT/CADDS SHEET 49



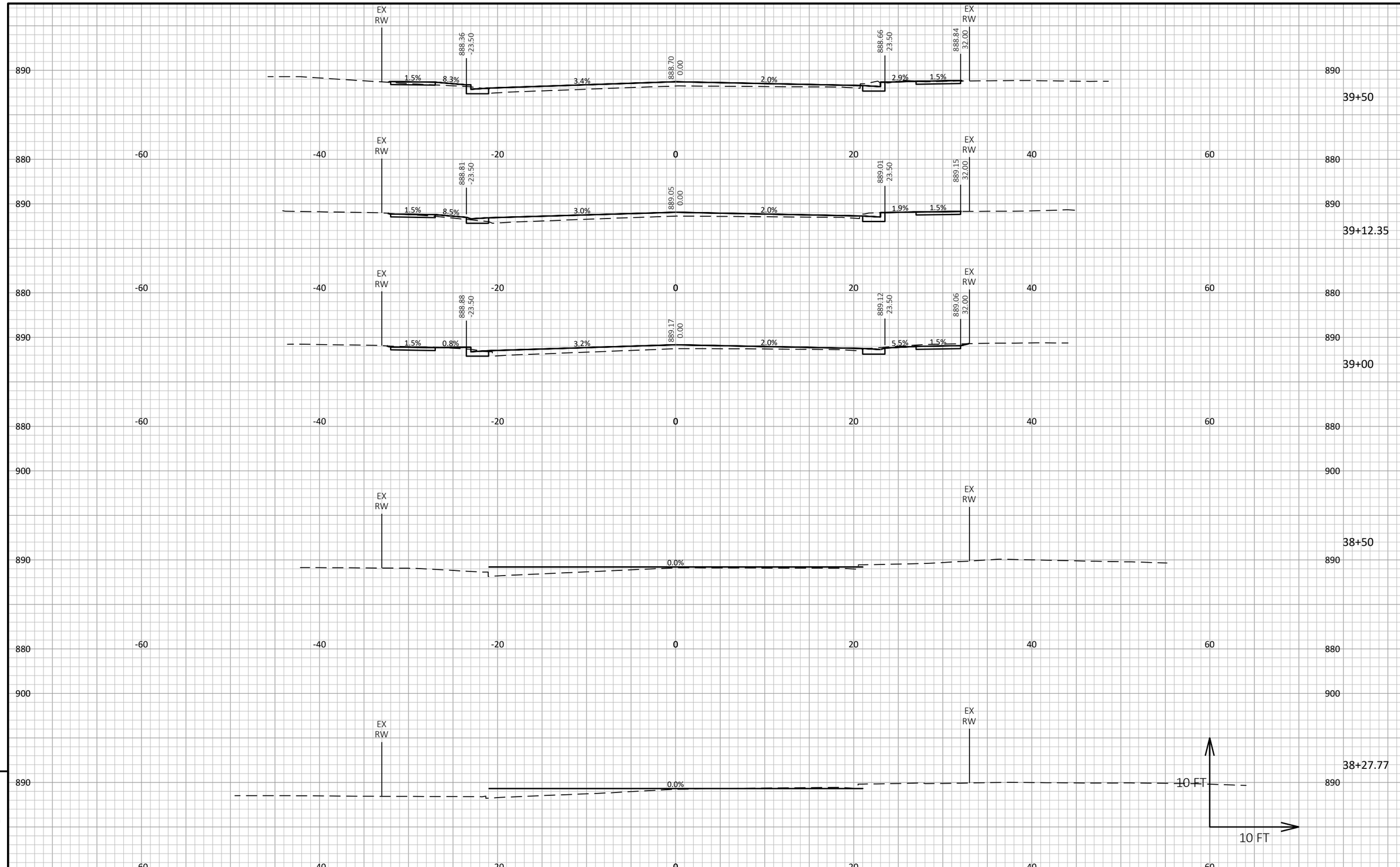
PROJECT NO: 5685-00-04/05	HWY: EXCHANGE STREET	COUNTY: DANE	CROSS SECTIONS: SECTION VIEW GROUP - 1	SHEET	E

FILE NAME : J:\JOB#S\MCFARLAND\MC-134-M4 EXCHANGE STREET PRELIMINARY ENGINEERING (FILE)\DRAWING\MC 134 ALIGNMENT CORRIDOR.DWG
LAYOUT NAME - 12
PLOT DATE : 6/9/2022 2:02 PM PLOT BY : TIM STIEVE PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.
WISDOT/CADDS SHEET 49



PROJECT NO: 5685-00-04/05	HWY: EXCHANGE STREET	COUNTY: DANE	CROSS SECTIONS: SECTION VIEW GROUP - 1	SHEET	E

FILE NAME : J:\JOB#S\MCFARLAND\MC-134-M4 EXCHANGE STREET PRELIMINARY ENGINEERING (FILE)\DRAWING\MC 134 ALIGNMENT CORRIDOR.DWG
LAYOUT NAME - 13
PLOT DATE : 6/9/2022 2:02 PM PLOT BY : TIM STIEVE PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.
WISDOT/CADDS SHEET 49



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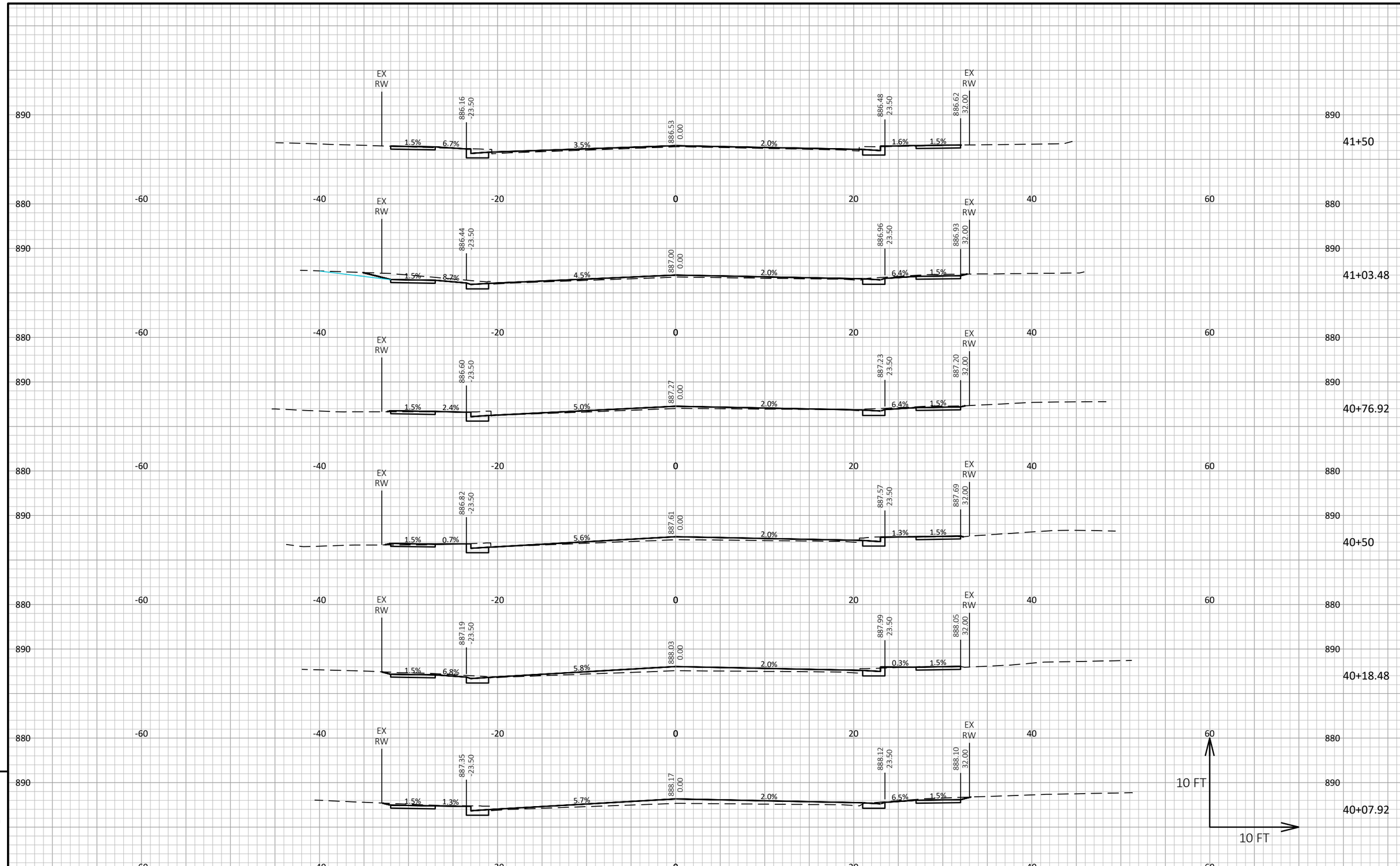
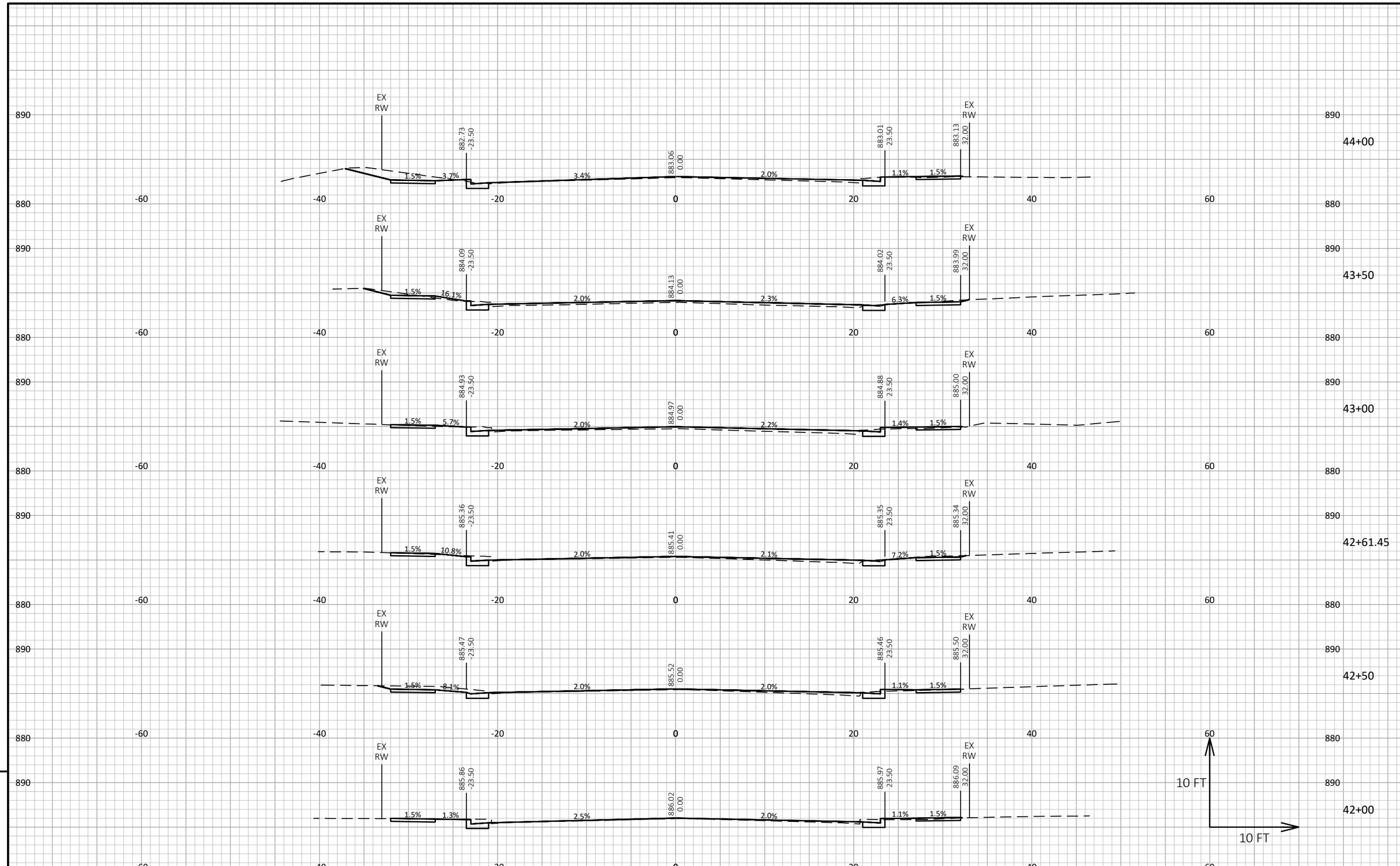
PROJECT NO: 5685-00-04/05	HWY: EXCHANGE STREET	COUNTY: DANE	CROSS SECTIONS: SECTION VIEW GROUP - 1	SHEET	E

FILE NAME : J:\JOB#S\MCFARLAND\MC-134-M4 EXCHANGE STREET PRELIMINARY ENGINEERING (FILE)\DRAWING\MC 134 ALIGNMENT CORRIDOR.DWG
LAYOUT NAME - 14
PLOT DATE : 6/9/2022 2:02 PM
PLOT BY : TIM STIEVE
PLOT NAME :
PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.
WISDOT/CADDS SHEET 49



PROJECT NO: 5685-00-04/05	HWY: EXCHANGE STREET	COUNTY: DANE	CROSS SECTIONS: SECTION VIEW GROUP - 1	SHEET	E

FILE NAME : J:\JOB#S\MCFARLAND\MC-134-M4 EXCHANGE STREET PRELIMINARY ENGINEERING (FILE)\DRAWING\MC 134 ALIGNMENT CORRIDOR.DWG
LAYOUT NAME - 15
PLOT DATE : 6/9/2022 2:03 PM
PLOT BY : TIM STIEVE
PLOT NAME :
PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.
WISDOT/CADDS SHEET 49



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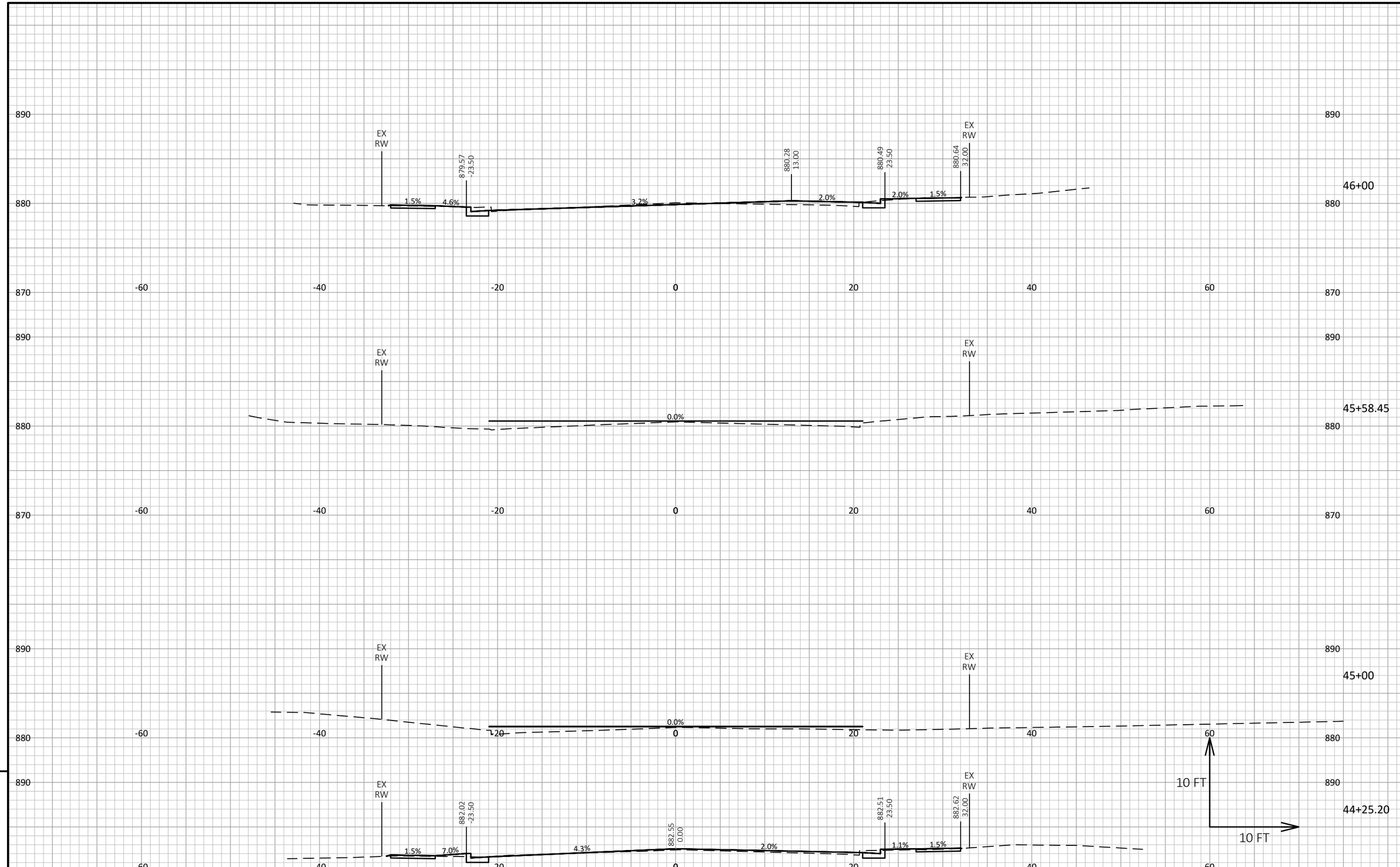
PROJECT NO: 5685-00-04/05	HWY: EXCHANGE STREET	COUNTY: DANE	CROSS SECTIONS: SECTION VIEW GROUP - 1	SHEET	E

FILE NAME : J:\JOB#S\MCFARLAND\MC-134-M4 EXCHANGE STREET PRELIMINARY ENGINEERING (FILE)\DRAWING\MC 134 ALIGNMENT CORRIDOR.DWG
LAYOUT NAME - 16
PLOT DATE : 6/9/2022 2:03 PM PLOT BY : TIM STIEVE PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.
WISDOT/CADDS SHEET 49



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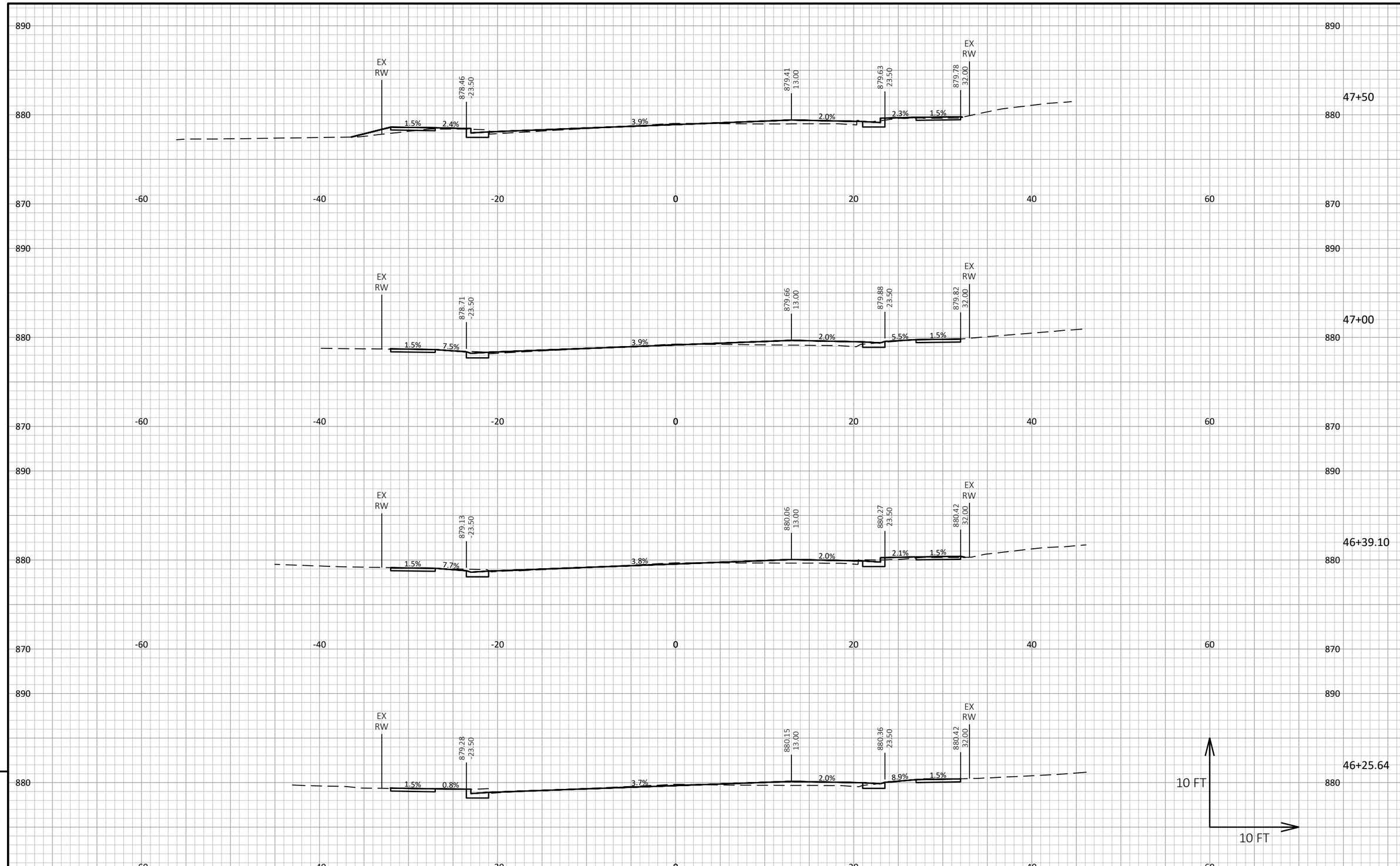
PROJECT NO: 5685-00-04/05	HWY: EXCHANGE STREET	COUNTY: DANE	CROSS SECTIONS: SECTION VIEW GROUP - 1	SHEET	E

FILE NAME : J:\JOB#S\MCFARLAND\MC-134-M4 EXCHANGE STREET PRELIMINARY ENGINEERING (FILE)\DRAWING\MC 134 ALIGNMENT CORRIDOR.DWG
LAYOUT NAME - 17
PLOT DATE : 6/9/2022 2:04 PM PLOT BY : TIM STIEVE PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.
WISDOT/CADDS SHEET 49



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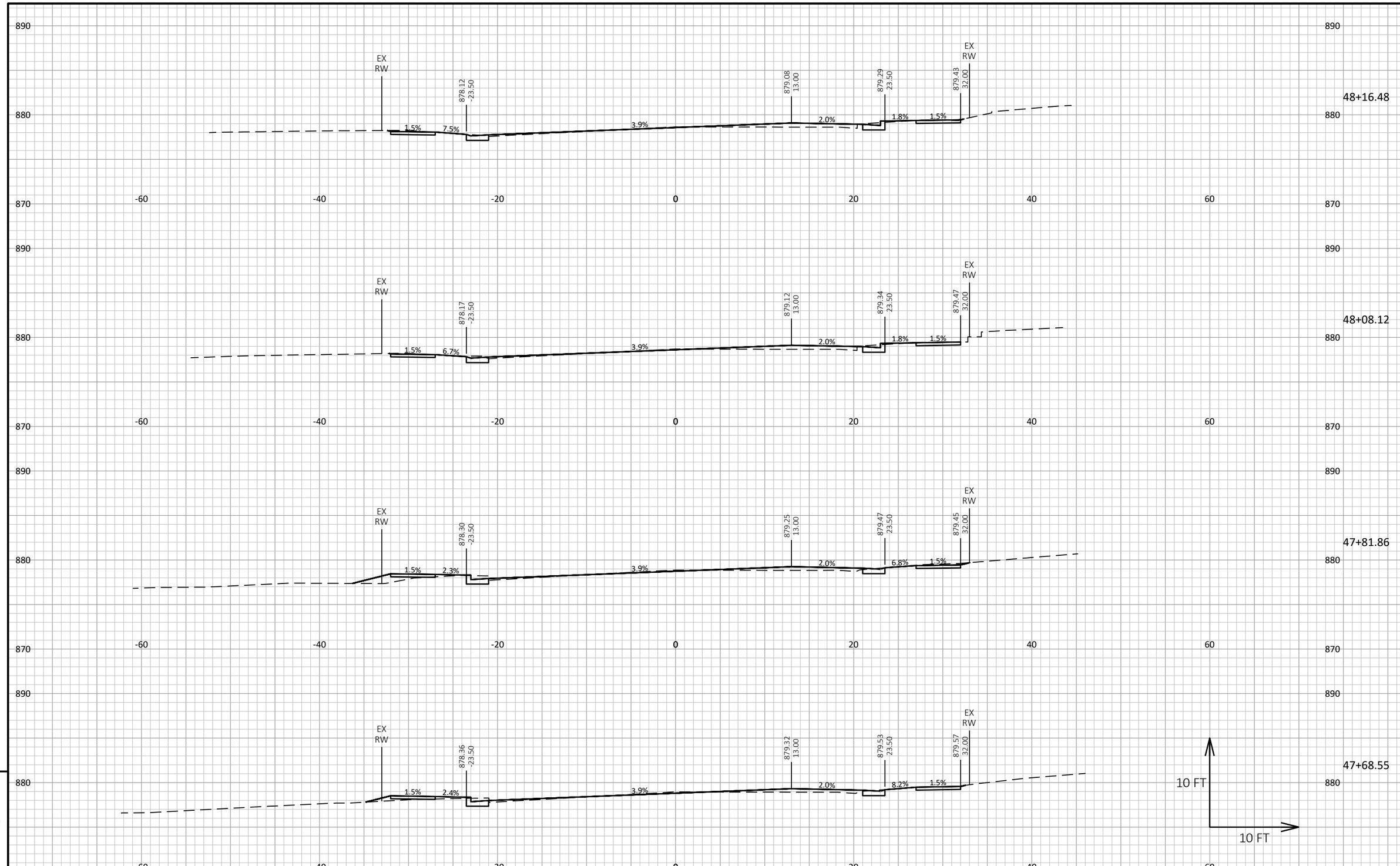
PROJECT NO: 5685-00-04/05	HWY: EXCHANGE STREET	COUNTY: DANE	CROSS SECTIONS: SECTION VIEW GROUP - 1	SHEET	E

FILE NAME : J:\JOB#S\MCFARLAND\MC-134-M4 EXCHANGE STREET PRELIMINARY ENGINEERING (FILE)\DRAWING\MC 134 ALIGNMENT CORRIDOR.DWG
LAYOUT NAME - 18
PLOT DATE : 6/9/2022 2:04 PM
PLOT BY : TIM STIEVE
PLOT NAME :
PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.
WISDOT/CADDS SHEET 49



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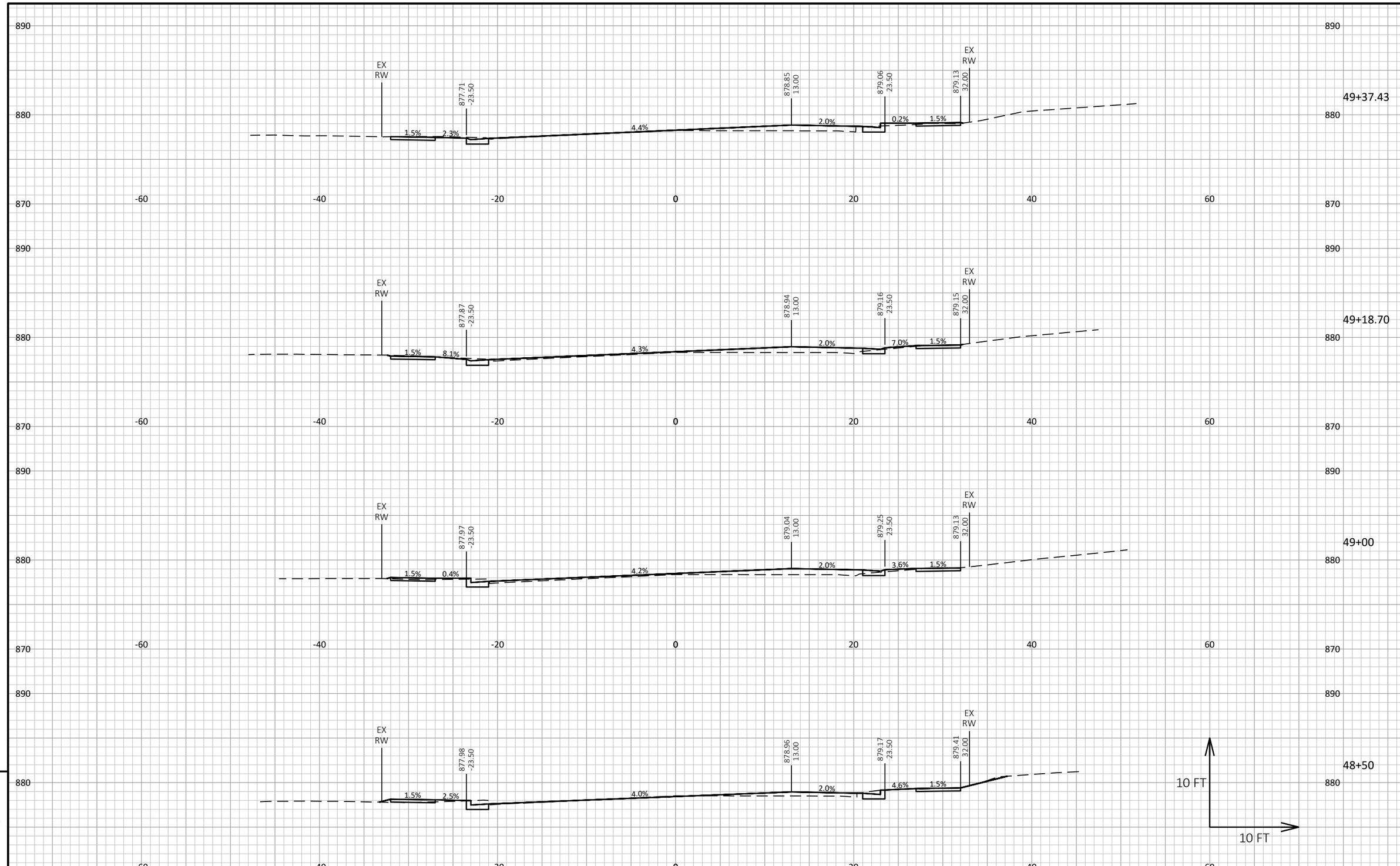
PROJECT NO: 5685-00-04/05	HWY: EXCHANGE STREET	COUNTY: DANE	CROSS SECTIONS: SECTION VIEW GROUP - 1	SHEET	E

FILE NAME : J:\JOB#S\MCFARLAND\MC-134-M4 EXCHANGE STREET PRELIMINARY ENGINEERING (FILE)\DRAWING\MC 134 ALIGNMENT CORRIDOR.DWG
LAYOUT NAME - 19
PLOT DATE : 6/9/2022 2:04 PM
PLOT BY : TIM STIEVE
PLOT NAME :
PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.
WISDOT/CADDS SHEET 49



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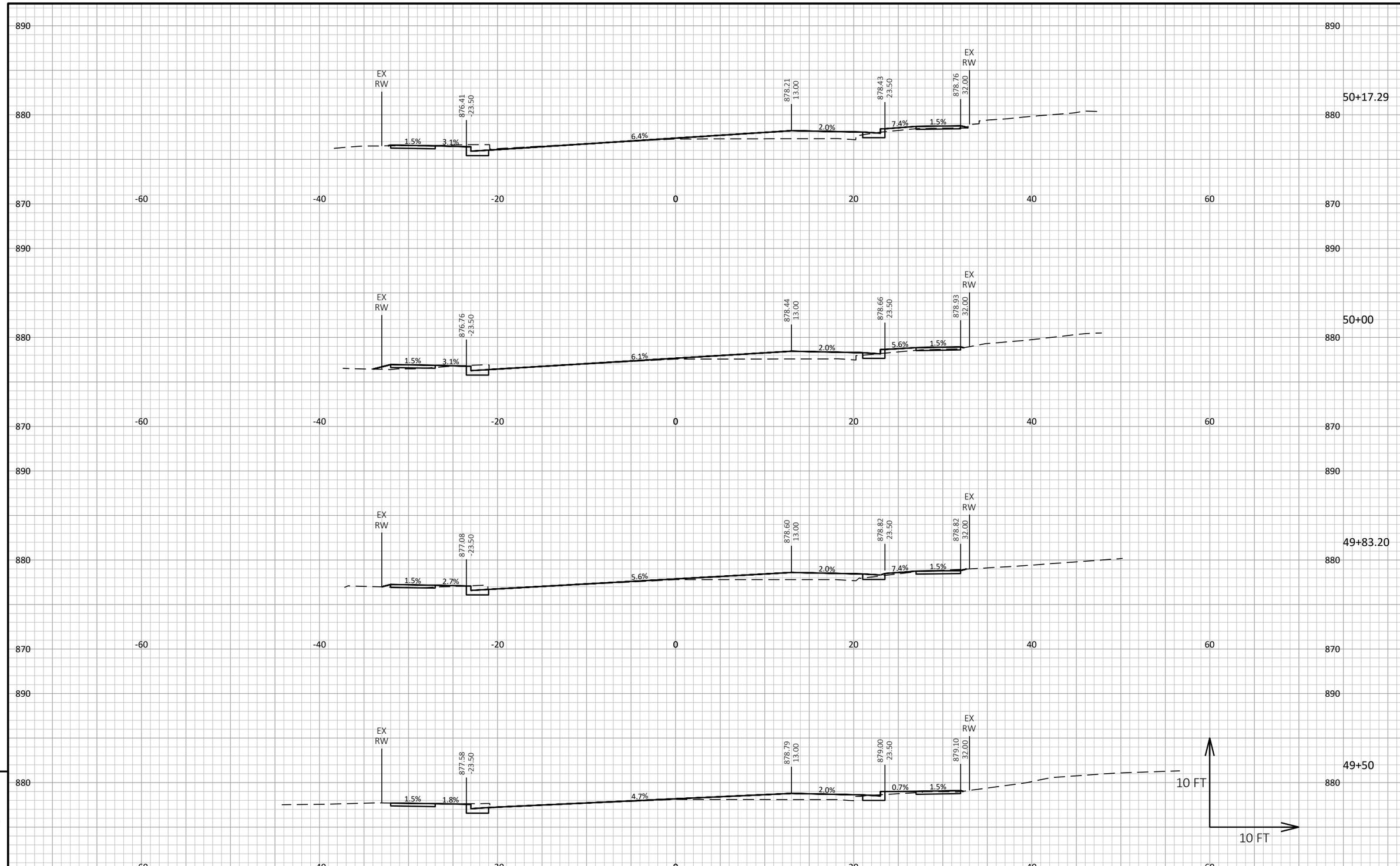
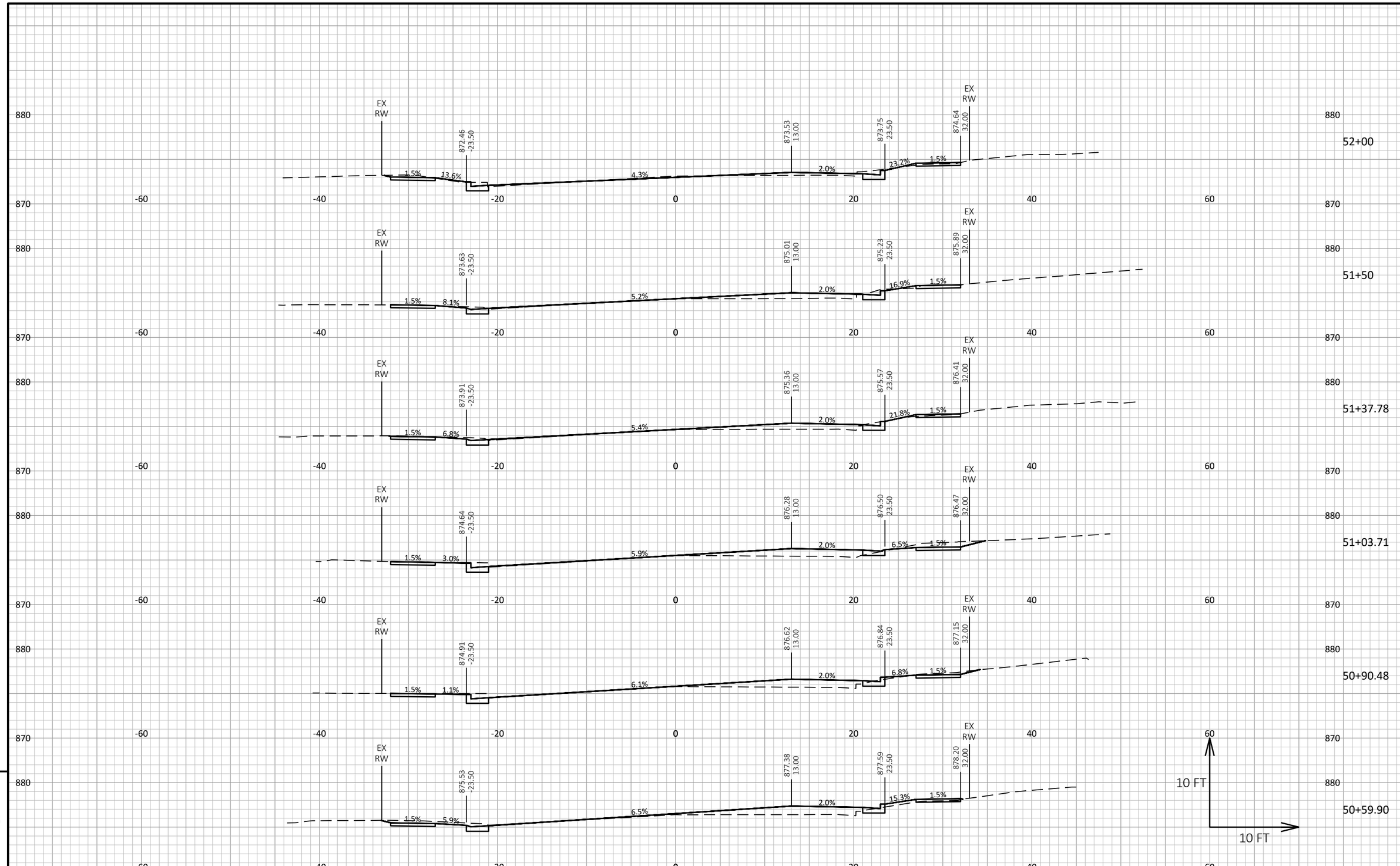
PROJECT NO: 5685-00-04/05	HWY: EXCHANGE STREET	COUNTY: DANE	CROSS SECTIONS: SECTION VIEW GROUP - 1	SHEET	E

FILE NAME : J:\JOB#S\MCFARLAND\MC-134-M4 EXCHANGE STREET PRELIMINARY ENGINEERING (FILE)\DRAWING\MC 134 ALIGNMENT CORRIDOR.DWG
LAYOUT NAME - 20
PLOT DATE : 6/9/2022 2:05 PM
PLOT BY : TIM STIEVE
PLOT NAME :
PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.
WISDOT/CADDS SHEET 49



PROJECT NO: 5685-00-04/05	HWY: EXCHANGE STREET	COUNTY: DANE	CROSS SECTIONS: SECTION VIEW GROUP - 1	SHEET	E

FILE NAME : J:\JOB#S\MCFARLAND\MC-134-M4 EXCHANGE STREET PRELIMINARY ENGINEERING (FILE)\DRAWING\MC 134 ALIGNMENT CORRIDOR.DWG
LAYOUT NAME - 21
PLOT DATE : 6/9/2022 2:05 PM
PLOT BY : TIM STIEVE
PLOT NAME :
PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.
WISDOT/CADDS SHEET 49



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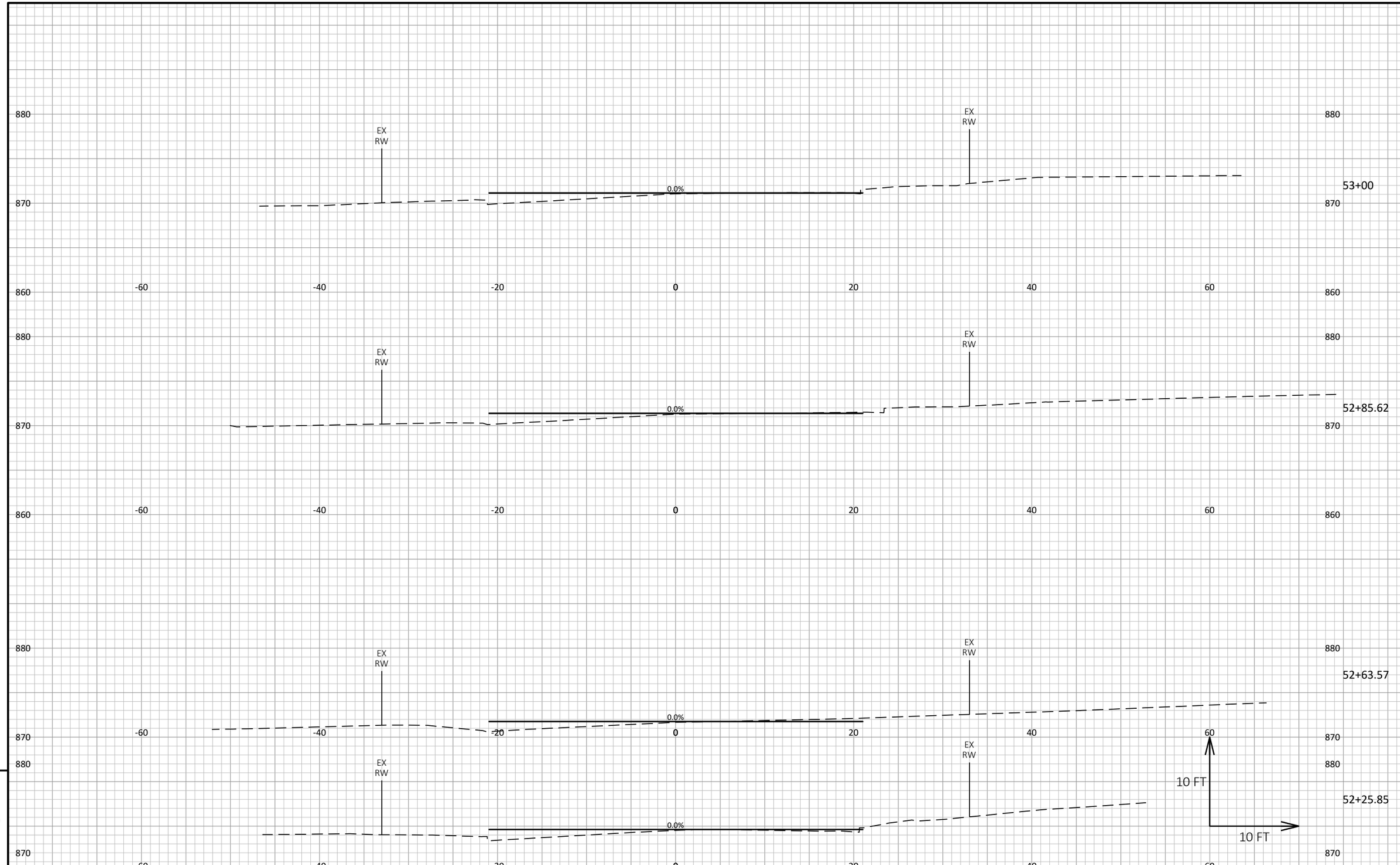
PROJECT NO: 5685-00-04/05	HWY: EXCHANGE STREET	COUNTY: DANE	CROSS SECTIONS: SECTION VIEW GROUP - 1	SHEET	E

FILE NAME : J:\JOB#S\MCFARLAND\MC-134-M4 EXCHANGE STREET PRELIMINARY ENGINEERING (FILE)\DRAWING\MC 134 ALIGNMENT CORRIDOR.DWG
LAYOUT NAME - 22
PLOT DATE : 6/9/2022 2:05 PM
PLOT BY : TIM STIEVE
PLOT NAME :
PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.
WISDOT/CADDS SHEET 49



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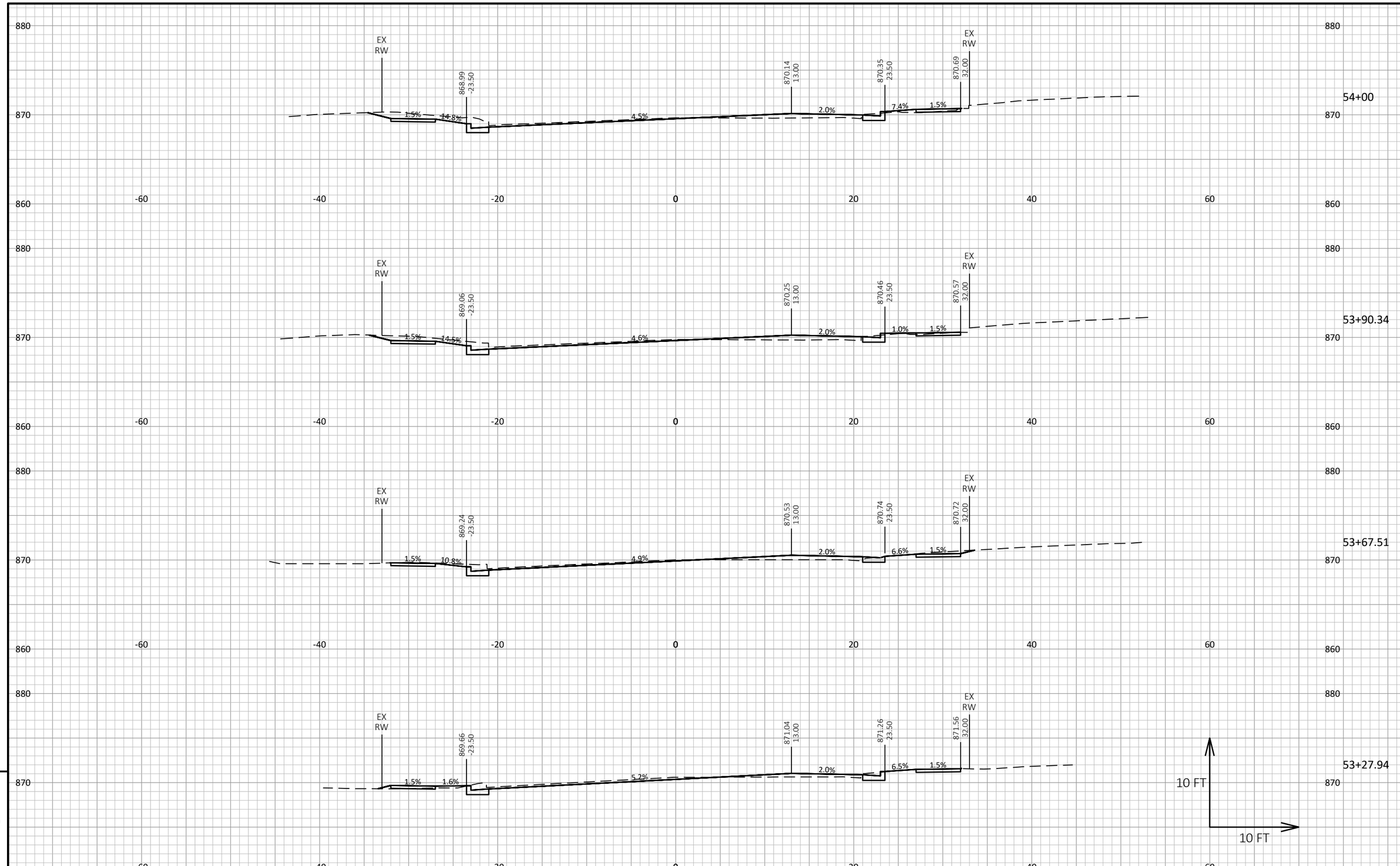
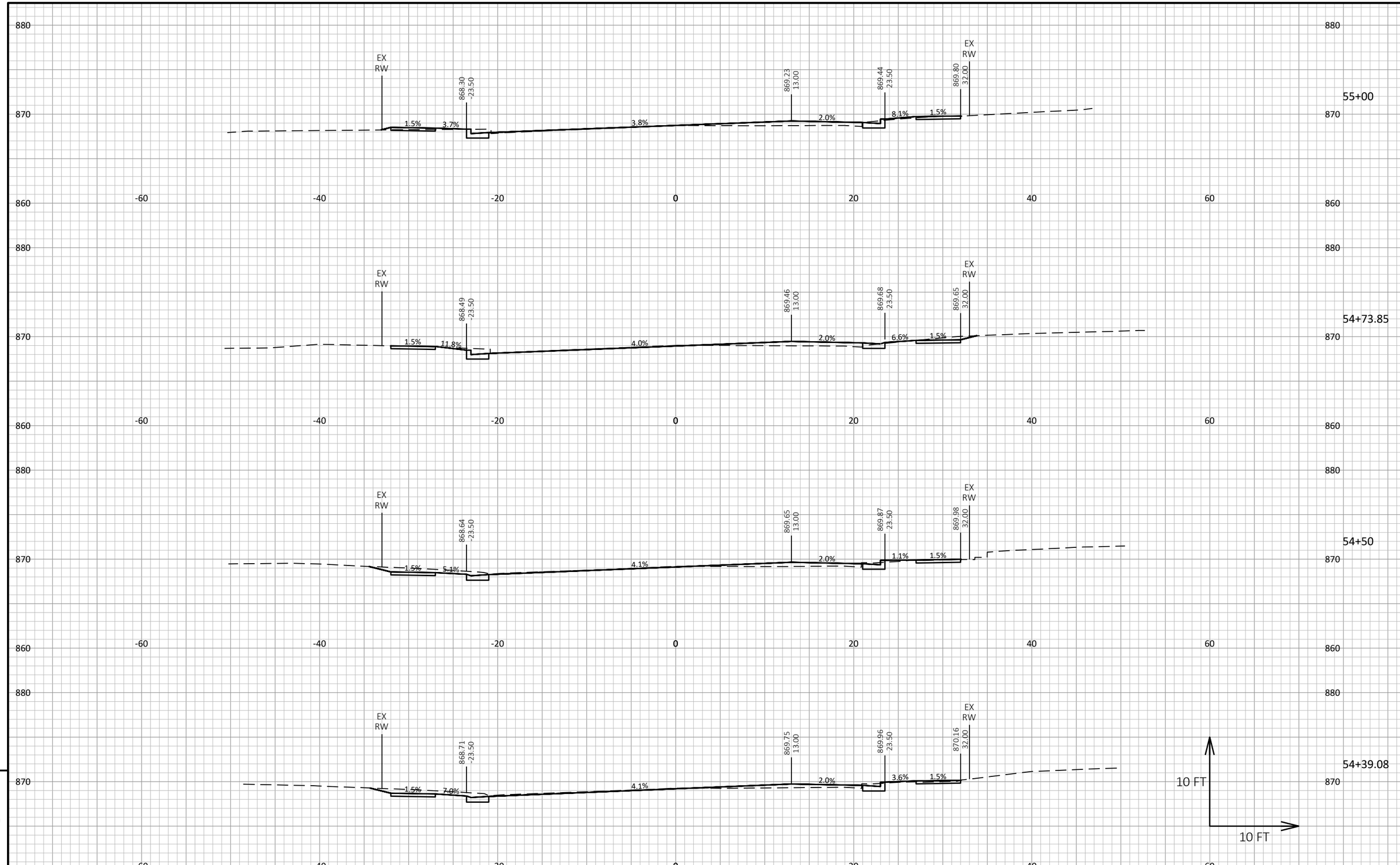
PROJECT NO: 5685-00-04/05	HWY: EXCHANGE STREET	COUNTY: DANE	CROSS SECTIONS: SECTION VIEW GROUP - 1	SHEET	E

FILE NAME : J:\JOB#S\MCFARLAND\MC-134-M4 EXCHANGE STREET PRELIMINARY ENGINEERING (FILE)\DRAWING\MC 134 ALIGNMENT CORRIDOR.DWG
LAYOUT NAME - 23
PLOT DATE : 6/9/2022 2:06 PM
PLOT BY : TIM STIEVE
PLOT NAME :
PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.
WISDOT/CADDS SHEET 49



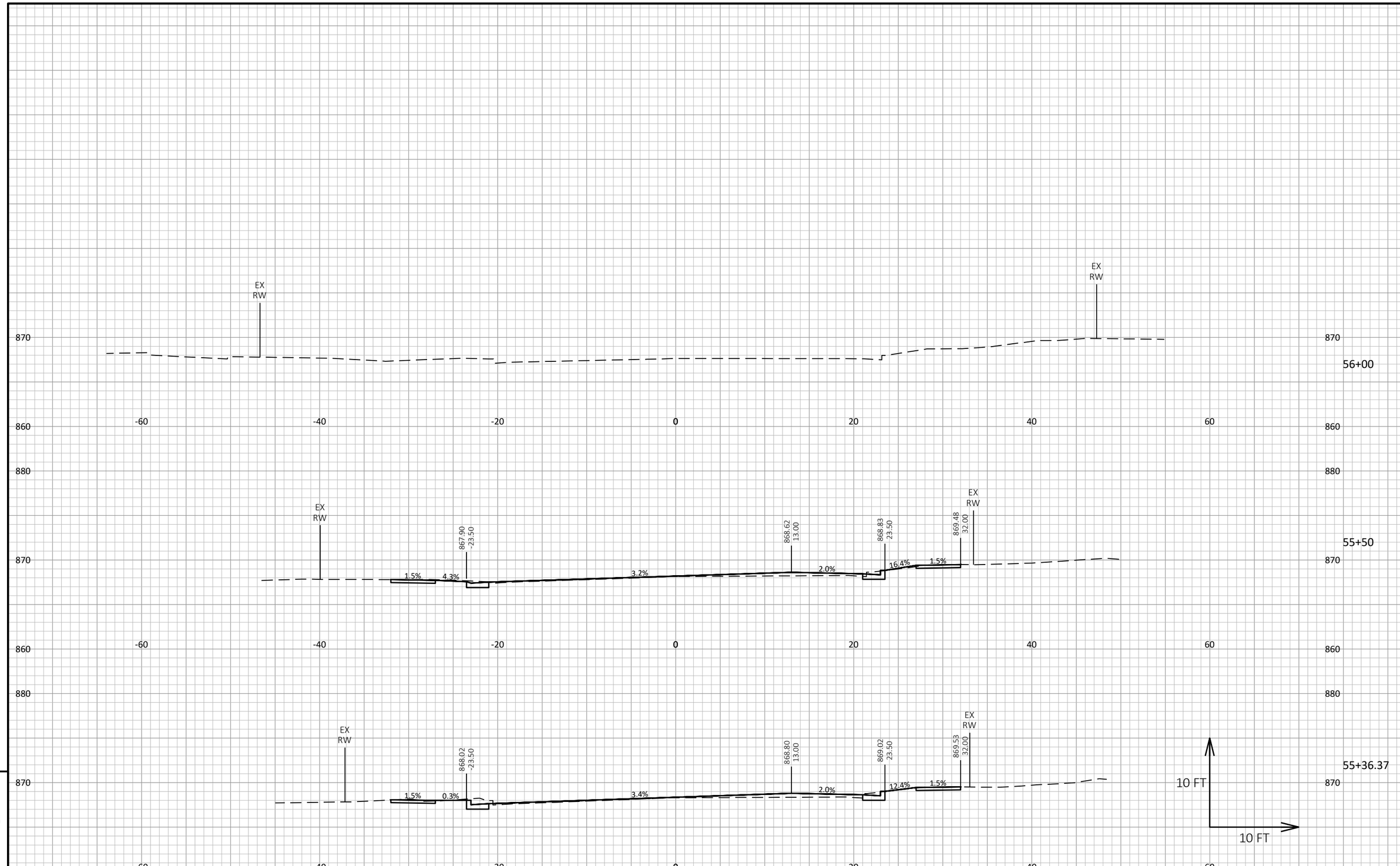
PROJECT NO: 5685-00-04/05	HWY: EXCHANGE STREET	COUNTY: DANE	CROSS SECTIONS: SECTION VIEW GROUP - 1	SHEET	E

FILE NAME : J:\JOB#S\MCFARLAND\MC-134-M4 EXCHANGE STREET PRELIMINARY ENGINEERING (FILE)\DRAWING\MC 134 ALIGNMENT CORRIDOR.DWG
LAYOUT NAME - 24
PLOT DATE : 6/9/2022 2:06 PM
PLOT BY : TIM STIEVE
PLOT NAME :
PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.
WISDOT/CADDS SHEET 49



PROJECT NO: 5685-00-04/05	HWY: EXCHANGE STREET	COUNTY: DANE	CROSS SECTIONS: SECTION VIEW GROUP - 1	SHEET	E

FILE NAME : J:\JOB#S\MCFARLAND\MC-134-M4 EXCHANGE STREET PRELIMINARY ENGINEERING (FILE)\DRAWING\MC 134 ALIGNMENT CORRIDOR.DWG
LAYOUT NAME - 25
PLOT DATE : 6/9/2022 2:07 PM
PLOT BY : TIM STIEVE
PLOT NAME :
PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.
WISDOT/CADDS SHEET 49



9

9

PROJECT NO: 5685-00-04/05	HWY: EXCHANGE STREET	COUNTY: DANE	CROSS SECTIONS: SECTION VIEW GROUP - 1	SHEET	E

FILE NAME : J:\JOB#S\MCFARLAND\MC-134-M4 EXCHANGE STREET PRELIMINARY ENGINEERING (FILE)\DRAWING\MC 134 ALIGNMENT CORRIDOR.DWG
LAYOUT NAME - 26
PLOT DATE : 6/9/2022 2:07 PM
PLOT BY : TIM STIEVE
PLOT NAME :
PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.
WISDOT/CADDS SHEET 49

VILLAGE OF
McFarland

SUMMARY SHEET

MEETING DATE: **Monday, August 22, 2022**

SECTION: **Business**

DEPARTMENT: **Public Works**

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

AGENDA ITEM: **Update regarding the 2022 Sanitary Survey report performed by the Wisconsin Department of Natural Resources (DNR)**

PREVIOUS ACTION:
None.

ISSUE SUMMARY:
A Sanitary Survey, performed by the Wisconsin DNR, was recently completed for the McFarland Waterworks. A Sanitary Survey is the inspection of a municipalities' water system and is conducted every three years. Records indicate that these inspections go back to 1991 and were performed annually until 2007. Overall, the water system has received good reports. The last inspection occurred in 2019.

Enclosed is the letter from the DNR regarding this year's inspection along with our response. There were no significant deficiencies found. One deficiency was identified and action has been taken to correct this concern.

FINANCIAL/BUDGET IMPACT:
None.

VILLAGE PLAN REFERENCE:
None.

ORDINANCE REFERENCE:
None.

BOARD, COMMISSION OR COMMITTEE RECOMMENDATION:
No action is required on this item.

ATTACHMENTS:
1. McFarland_SanitarySurveyReportLetter
2. 2022 Sanitary Survey Report response letter

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
3911 Fish Hatchery Road
Fitchburg WI 53711-5397

Tony Evers, Governor
Preston D. Cole, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

July 21, 2022

PWS ID#: 11302412
McFarland Waterworks
McFarland, WI
MC - Dane County

Jim Hessling, Director of Public Works
5115 Terminal Drive
McFarland, WI 53558-9426

Subject: Sanitary Survey Report and Notice of Noncompliance

Dear Jim Hessling:

The purpose of a sanitary survey is to evaluate the system's source, facilities, equipment, operation, maintenance, and management as they relate to providing safe drinking water. The sanitary survey is also an opportunity to update the Department's records, provide technical assistance, and identify potential risks that may adversely affect drinking water quality. This Sanitary Survey Report also serves as a Notice of Noncompliance.

On July 15, 2022, Dave Barkhahn conducted a sanitary survey of your water system, McFarland Waterworks. During the sanitary survey you, Lee Igl, Aimee Irwin, Jordan Thompson, Bryan Westbury, and Austin Gaffney; were present. At the completion of the survey, you and your team were briefed on the preliminary findings. This report outlines the final findings, discusses problems that need to be addressed, and timelines for corrective action where appropriate.

We are asking that a plan for corrective action, including a work schedule be completed by September 4, 2022. A proposed corrective action plan and schedule is included below. Please contact me to discuss this before September 4, 2022, if you can justify extending the deadline.

System Summary

The Village of McFarland is located in central Dane County and is just south of the City of Madison. The water system is owned by the Village and began operation in 1940 for general use and fire protection. The present water system consists of three deep sandstone wells, two elevated storage tanks with a combined capacity of 1,250,000 gallons, and a distribution system consisting of 245,478 feet of water mains. At each well, chlorine is added for disinfection purposes and fluoride is added for dental health protection. Each well is equipped with natural gas engines and right-angle gear drives to operate the well pumps when electrical power is out. The engines are routinely operated and used to pump water.

Significant Deficiencies

During the sanitary survey, no significant deficiencies were identified. Significant deficiencies indicate noncompliance with one or more Wisconsin Administrative Codes and/or represent an immediate health risk to consumers.

Deficiencies

During the sanitary survey, one deficiency was identified. Deficiencies are problems in the drinking water system that have the potential to cause serious health risks or represent long-term health risks to consumers. These deficiencies may indicate noncompliance with one or more Wisconsin Administrative Codes. Corrective action should be completed for these deficiencies as soon as possible.

Deficiency	Compliance Due Date	Code Citation
1. Annual inspection of all storage structure screens and seals is not conducted and documented.	12/31/2022	NR 810.14

Discussion and Schedule for Correction of Deficiencies:

- Annual inspections are required of the screens on the vents and of the gaskets on the hatches of both elevated tanks. The next inspections should occur before the end of this year. The inspections should also be documented by taking pictures or by entries in a logbook.

Recommendations

During the sanitary survey, four recommendations were identified. Recommendations are problems in the water system that hinder your public water system from consistently providing safe drinking water to consumers.

Recommendation
1. The source capacity appears to be inadequate to meet current and future demand.
2. The pump discharge pipe is not adequately protected from corrosion.
3. Additional measures may be needed to enhance the security of the water supply system.
4. A comprehensive materials inventory may not be maintained.

Discussion of Recommendations:

- The Department uses a rule-of-thumb to check if water systems have enough well capacity. It is common engineering design that public water systems have enough source capacity to supply the municipality with the average day's consumption, while the largest well is out of service. Furthermore, the pumps should not run more than 12 hours to meet the average day's consumption, nor more than 18 hours per day for the maximum day usage. According to the 2021 PSC report, McFarland used about 646,699 gallons per average day during the year. The PSC report also shows that 1,384,000 gallons was pumped on the maximum day's use. With all three wells in service, the well pumps would operate 4.2 hours to meet the average day's pumpage. With all three wells in service, the well pumps would operate 8.9 hours to meet the maximum day's pumpage. With the largest well out of service, the other two well pumps would operate 7.7 hours to meet the average day's pumpage. With largest well out of service, the other two well pumps would operate 16.5 hours to meet the maximum day's pumpage. The 2020 PSC report shows that 1,754,000 gallons was pumped on the maximum day. Using the above rule-of-thumb, we can see that the water system is approaching a level of concern for the maximum day of pumpage. This rule-of-thumb is not the only indicator that needs to be considered when determining proper well capacity. An engineering study or a needs assessment that considers current and future demands, along with a more detailed analysis of the water use, should be used to make the final determination.

- To reduce corrosion, all discharge piping inside each wellhouse should be painted. Some new pipe sections were installed recently and need to be painted. The existing pipe in each wellhouse also appears to need a fresh coat of paint.

- Cyber-attacks have been striking critical infrastructure across the United States with increased frequency in recent years. The following best management practices can be made to prevent a cybersecurity incident:
    1. Update to the latest version of the operating system (e.g. Windows 10).
    2. Use multiple-factor authentication to access critical applications.
    3. Use strong passwords to protect remote access credentials.
    4. Update user access lists to critical programs regularly (e.g. Employee retires).
    5. Train users to identify and report attempts at social engineering. Identify and suspend access of users exhibiting unusual activity.
    6. Ensure anti-virus, spam filters, and firewalls are up to date, properly configured and secure.
    7. Audit network configurations and isolate computer systems that cannot be updated.
    8. Only use secure networks and consider installing a virtual private network (VPN).
    9. Restrict all remote connections to SCADA systems, specifically those that allow physical control and manipulation of devices within the SCADA network. One-way unidirectional monitoring devices are recommended to monitor SCADA systems remotely.

- The Federal Lead and Copper Rule Revisions (LCRR) that are now in effect require all public water systems to develop and submit a service line material inventory to the DNR by October 16, 2024. The department encourages your water system to prepare for this upcoming LCRR deadline by improving your current plumbing materials inventory. LCRR compliant materials inventories are required to include information for all service lines connected to the public water system distribution system, including residential and non-residential customers. This means that inventories must list both the street side and customer side service line materials and categorize them as one of the following: confirmed lead; confirmed non-lead; lead status unknown or galvanized requiring replacement (GRR). Customer-side galvanized service lines must be assigned GRR category unless the public water system knows with certainty that the upstream utility service line material is not currently and was never previously lead. In addition to the above classification, public water systems must identify and track the source of the information used to classify each connection (e.g. construction records, visual inspection, etc.) and provide a locational identifier. Therefore, your system will be required to review all relevant historical records for the water system prior to your initial 2024 inventory submittal. The operators should continue to collect plumbing materials information from all services when meters are changed, when cross connection inspections are made, during construction projects, or any other time they enter customers' premises. In addition to the inventory submitted before October 2024, annual updates can be made once more information is obtained.

Nonconforming Features

During the sanitary survey, seven nonconforming features were identified. Nonconforming features are things that existed in a water system before a code change became effective. These features were approved at the time of construction or installation but due to changes in the code, would not be approved for new installations. Correction of these features is not required until major changes or remodeling occurs or a health hazard is identified. The following items were identified as nonconforming features.

Nonconforming Features	Current Code
1. The vent on one elevated tank does not meet all of the NR 811 requirements.	811.64(8)(c)
2. The overflow of one elevated storage facility is not brought down to within 12 to 24 inches of the ground surface.	811.64(4)(a)
3. There is not at least one adequately sized well vent installed through the well pump casing, well seal, or concrete pump base at two locations.	811.36(1)
4. The pump base at one location is not adequate.	811.31(1)
5. Sampling faucets are not appropriate for each type of sample.	811.37(5)(b)
6. Secondary containment of all chemical tanks is not provided.	811.39(3)(d)
7. The proper housing for chemicals or separate rooms are not provided.	811.40(1)(L), 811.51(1)(a), and 811.51(2)(a)

Discussion of Nonconforming Features:

- According to the last inspection report in our files from Dixon Engineering, the vent on top of the Holscher Road tank does not meet current code requirements. The current code requires skirted sides that totally cover the screen when viewing the vent cap from the side. This work can be done the next time the tank is painted.

- The discharge of the overflow pipe on the Burma Road elevated tank discharges horizontally, 42 inches above the splash pad. Current code requires the discharge to face downward and end 12-24 inches above the splash pad.

- Newly constructed wells are required to have well vents with a minimum diameter of 2 inches. It appears the well vents at wells 1 and 3 are undersized.

- New wells are required to have concrete pump bases that are at least 12 inches above the pump station floor and the protective grouted casing must extend a minimum of one inch above the concrete pump base. It appears that the pump base at well 1 is not at least 12 inches high.

- Samples for inorganics, radioactivity, volatile organic chemicals, and synthetic organic chemicals are required to be collected at the entry points to the distribution system. The entry point is at a location after chemical addition and before the first customer. The proper entry point faucet may not exist at wells 1 and 3. To obtain a water sample representing finished water quality, a water service lateral may be brought back into the building and fitted with a sampling faucet after being connected to the finished water main outside the building. The sample tap in in the meter test room at well 4 can be used as an entry point tap when well 4 is running.

- Secondary containment for all chemical tanks is not provided. Secondary containment capable of holding the contents of all chemical tanks is needed for all new chemical storage rooms. This includes the solution tank being used and all containers being stored. Secondary containment can be provided by a larger vessel that surrounds the tanks, by using double walled tanks, using an expandable bladder, or by concrete curbing on the floor.

- Separate chemical rooms with proper ventilation for all chemicals are now required at new installations. Separate chemical rooms are not provided at wells 1 and 3. A separate chemical room or rooms is recommended for chemical storage at each well. This is especially important when storing incompatible chemicals like chlorine and fluoride. The separate rooms also reduce corrosion of electrical controls, switches, and any other metal surfaces in each wellhouse.

Water Quality Monitoring and Reporting

Your water system has an excellent record of compliance with monitoring and reporting requirements for chemical and radiological contaminants for the last three years. All samples were collected and all results were reported to the Department, as required. We appreciate your samplers' continued efforts in complying with these Safe Drinking Water Act requirements. There are no water quality concerns with the McFarland water system.

The monitoring requirements for McFarland for 2022 show that one Disinfection Byproduct sample is needed from the distribution system in the third quarter from the approved location. Routine coliform bacteria (10 distribution samples in each month and one raw water sample each quarter from each well) and monthly fluoride split samples are also needed.

A review of Department records shows an excellent history of bacteriological sampling for the last 3-year period. At least 10 samples are required from the distribution system each month. Records show that these samples have been collected each month. All samples were submitted to certified labs for bacteriological analysis. Samples were collected at 12 different locations throughout the distribution system and on different days throughout each month. No coliform positive samples were reported.

The fluoridation program for the McFarland water system also has an excellent history of sample submission for the last 12-month period. All monthly split samples were collected and were submitted to the State Lab of Hygiene, as required. The average residual for the most recent twelve monthly split samples submitted in the last year was 0.78 mg/L at the State Lab and the operators' average was 0.70 mg/L. This indicates the operators are doing a good job when performing the fluoride residual tests and that the testing equipment used to run these analyses is functioning properly. The operators are encouraged to keep up the good work with the fluoridation program.

Lead and Copper Monitoring

Lead and copper samples were collected in 2020 from 20 different valid sites in the water system. The 90th percentile for lead was reported as 1.72 ug/L and the 90th percentile for copper was reported as 193 ug/L. The action level for lead is 15 ug/L, and for copper, the action level is 1300 ug/L. We have reviewed your water system's lead and copper monitoring history. It appears that the sites used have been appropriate sites. The Utility has 44 approved sites on their monitoring site plan. All sites are kitchen cold water taps with unsoftened water.

Required Reports, Records, and Utility Programs

Our records show that the Utility has distributed the required Consumer Confidence Reports (CCRs). All reports were complete, and it appears that the reports were properly distributed. The completed certification forms were also sent to this office. The CCRs must continue to be distributed before July 1 of every year. Please continue to send me copies of the final reports and the completed certification forms. A copy of the 2021 CCR was received on June 16, 2022, along with the completed certification form.

In the last two years, all wells were taken out of service for rehabilitation and cleaning. This is an important part in maintaining the capacities of the wells. We recommend that this type of maintenance be done once every ten years, or more if needed. In addition to this work, it is also desirable to upgrade the wellhouses to keep up with new code requirements. Painting inside each wellhouse, providing separate chemical rooms and new chemical tanks not only improves the looks inside each wellhouse, but could help improve the safety for the operators and will reduce corrosion of electrical panels and controls.

The monthly pumpage reports are required to be completely filled out and submitted to the department on or before the tenth day of the following month. In the last three years, all reports were filled out properly. The September 2020 report was submitted two days late.

It appears that the Village's private well abandonment and permitting ordinance (Article II, Division 2, §47-44 through §47-51) is properly enforced. One well was abandoned and an abandonment report was received on August 5, 2020. The Village's ordinance requires the proper abandonment of all unused, unsafe, or improperly constructed private wells located on premises served by the Village water supply. Current well operational permits are required to be kept on file for periodic review by Department personnel. As properties are annexed and served municipal water, the well owners should be notified of the requirements in the Village's ordinance. The Utility is aware of one well that still exists that is also served by the Village water supply.

It appears that the Village's cross connection control ordinance (Article II, Division 3, §47-60 through §47-67) is also being enforced. Inspections are made when meters are changed. The Utility will start their meter change-out program of all service types this year and cross connection inspections will be made at the same time. In addition to performing inspections, the water system is also required to submit an annual report to the department that tells how many inspections were made in the previous year. These reports are due every March 1. The 2021 report was received on January 25, 2022. The report shows that public education materials were last mailed on April 13, 2021, in addition to making inspections at all service types. The Village's website also has educational information. Please continue to have all services inspected and continue to keep records of each inspection.

Hydrant flushing and valve exercising programs are also required and it appears that the Utility has done a good job with these programs. System hydrants are flushed in the fall, and hydrants on dead-ends are flushed in the spring and some are flushed again in the fall. About 20% of the valves are exercised each year. All hydrant and valve maintenance records are kept on the Utility's GIS system.

Detailed interior inspections of all water storage facilities are required at least once every five years. Inspection reports are also required to be submitted to the Department when the 5-year tank inspection is completed. The 500,000-gallon elevated tank on Burma Road was last inspected on October 11, 2017. The inspection report is on file. We do not have the last inspection report of the 750,000-gallon elevated tank on Holscher Road. Please get that to me soon.

We have an outdated overall map of the water distribution system. The owner of every community water system is required to keep a copy of a current map of the water system on file with the Department. The map should show the size and location of all waterworks facilities such as water mains, valves, hydrants, wells, and storage facilities. An electronic map in pdf format is preferred. Please send the map to me when you are able to.

Certified Operator

Chapter NR 114, Wisconsin Administrative Code, specifies the requirements for certified waterworks operators. To be fully certified for the McFarland water system, the Utility must employ at least one person that is a grade 1 operator in Distribution (D), and Groundwater (G). An operator in training is given a grade T status until proper experience is obtained and reported. The water system must also designate the operator in charge. To maintain their certification, all operators must attend continuing education classes and submit their credits when renewing their certificates.

Our records show that Jim Hessling is the operator in charge. Jim has Grade 1 certification in D and G. Jim's certification is good until June 1, 2024, when he will need to renew with the proper number of continuing education credits. Our records also show that Brett Brandt and David Pospyhalla are certified at Grade 1 in subclasses D and G. David Pospyhalla also has Grade T certification in Iron Removal (I). Lee Igl has Grade T certification in D and G. When Lee has the appropriate experience in each subclass he should submit the experience form and become fully certified as a Grade 1 operator. Mark Weber's certification recently expired but he plans to renew.

Water System Security
We recommend that you conduct a daily security check of your entire drinking water system to ensure that doors are locked and that windows secured. Please also take appropriate measures to protect your SCADA system.

System Summary Information
A water system summary is attached. Please review it for accuracy. If there are changes that need to be made, contact Dave Barkhahn at 920-960-0115.

Capacity Development Evaluation
This sanitary survey serves as an evaluation of the capabilities of your water system. This system has been determined to have adequate technical, managerial, and financial capacity to provide safe drinking water. The ability to plan for, achieve, and maintain compliance with applicable drinking water standards has been demonstrated.

The next sanitary survey of your water system is scheduled to take place in 2025. Typically, you will be contacted prior to the survey to schedule a date that is convenient.

Required Action
Please respond by September 4, 2022, with notification that the deficiency has been corrected, or that you agree to correct the deficiency identified in this letter by the due date, or with an alternative date for correcting the deficiency. Please also consider correcting the non-conforming features and recommendations discussed in this letter.

Thank you for your assistance during the sanitary survey. If you have any questions, you can reach me by phone at 920-960-0115, by fax at 608-275-3338, by e-mail at dave.barkhahn@wisconsin.gov, or by postal mail at the address on this letterhead.

Sincerely,

David Barkhahn

David Barkhahn
Public Water Supply Engineer

Encl.

cc: Bureau of Drinking Water/Groundwater - DG/5
Matt Schuenke, Village Administrator

Water System Summary Information
System ID: 11302412
System Name: MCFARLAND WATERWORKS
County: Dane
Type: Municipal Community
Basin: Rock River (lower)
Population: 9331
Service Connections: 0
Owner: JIM HESSLING
5115 TERMINAL DR
MCFARLAND, WI 53558
(608) 838-7287 Fax: (608) 838-6823 jim.hessling@mcfarland.wi.us
Date Security VA Complete: 05/03/2004
Date ERP Complete: 05/03/2004
Date ERP Last Exercised/Updated:
Emergency Phone: (608) 445-2858
Emergency Fax: (608) 838-4954
Emergency E-mail: achapin@mcfarland.wi.us

Certified Operators

Name	Lic. #	Expires	Phone/Fax/E-mail	Certification
BRETT BRANDT	32875	11/01/2023	(608) 838-7287 bbrandt2479@yahoo.com	D-1, G-1
JAMES HESSLING	27118	06/01/2024	(608) 838-7287 jim.hessling@mcfarland.wi.us	D-1, G-1; OIC
LEON IGL	38938	05/01/2025	(608) 358-8384 leeigl32@gmail.com	D-t, G-T
DAVID POSPYHALLA	32146	05/01/2024	(608) 219-8995 davidpospyhalla@gmail.com	D-1, G-1, I-T
MARK WEBER	33321	05/01/2022	(608) 838-7287 6088386823 mweber3370@yahoo.com	

Affiliations

Name	Affiliation	Start Date	Primary?	Phone
JIM HESSLING	SAMPLER	12/04/2015	Y	608-838-7287
JIM HESSLING	OWNER	12/14/2018	Y	608-838-7287
AARON CHAPIN	EMERGENCY	10/08/2021	Y	608-445-2858
DAVE BARKHAHN	DNR_REP	07/05/2011	Y	920-960-0115
CASSANDRA SUETTINGER	PLAN_CON	04/13/2018	N	608-838-3153

Entry Points and Sources of Water (Basic Data)

Source ID	Name	WUWN	Status	Type	Source	Depth	Cased	Grouted
1	Well #1	BF498	Active	ENTRY PT/SOURCE	Ground Water Source	560	167	167
2		BF499	Perm Abandoned	ENTRY PT/SOURCE	Ground Water Source		60	60
3	Well #3	HJ137	Active	ENTRY PT/SOURCE	Ground Water Source	700	260	260
4	Well #4	AC718	Active	ENTRY PT/SOURCE	Ground Water Source	800	130	130
99	OLD WELL #3	BF500	Reconstructed Well	ENTRY PT/SOURCE	Ground Water Source	700		

Entry Points and Sources of Water (Misc. Data)

Source ID	Pump Cap.	Pump Type	Lube	Aux. Power?
1	500	Vertical_Turbine	Water	Yes
2		Vertical_Turbine	Water	No
3	1000	Vertical_Turbine	Water	Yes
4	1000	Vertical_Turbine	Water	Yes
99	560	Vertical_Turbine	Water	Yes

Storage

ID/Location	Type	Vol. (gal)	Firm Pumping Capacity (gpm)	Height to Overflow (ft.)	Overflow Elev. (sea-level, ft.)	Aux. Power?	Mfg.	Model
4901 Burma Road	ELEVATED TANK	500000	1400	91	1047	No	CB&I	Spheroid
5107 Holscher Road	ELEVATED TANK	750000	1400	113	1047	No	CB&I	Spheroid

Booster Stations

ID/Location	Type	Firm Pumping Capacity (gpm)	Aux. Power?

None

System Interconnects

ID/Location	Type	Capacity (gpm)	Metered?	Chemical Injection Capable?

None

Treatment Summary Data

Source ID	Type	Description	Begin	End	Objective(s)	Pump Model	Cap.	Stroke %	Speed %	Sol. Tank Cap.	Dil. Ratio
1	380	Fluoridation	01/01/1960		Other	LMI A171-150FS	10	60	53	30	0
1	421	Hypochlorination, Post	01/01/1960		Disinfection	LMI A141-150S	14	50	40	30	0
2	380	Fluoridation	01/01/1960	04/14/1998	Other						
3	380	Fluoridation	01/01/1960		Other	LMI A171-150FS	10	60	52	30	0
3	421	Hypochlorination, Post	01/01/1960		Disinfection	LMI A151-91SH	24	73	65	30	0
4	380	Fluoridation	01/01/1960		Other	LMI AA171-150FS	10	60	58	30	0
4	421	Hypochlorination, Post	01/01/1960		Disinfection	LMI A151-97SH	24	65	60	30	0
99	380	Fluoridation	01/01/1960	01/01/1996	Other						

System Evaluation Summary

Inspector/Reviewer	Date	Report Date	Type	Agency	Response Due	Response Recd
BARKHAHN, DAVE	07/15/2022	07/21/2022	SURVEY	DNR	09/04/2022	
BARKHAHN, DAVE	07/15/2019	07/19/2019	SURVEY	DNR	09/02/2019	07/19/2019
BARKHAHN, DAVE	07/15/2016	07/22/2016	SURVEY	DNR	09/05/2016	08/18/2016
BARKHAHN, DAVE	06/05/2013	06/14/2013	SURVEY	DNR	07/29/2013	07/29/2013
STUNKARD, TOM	07/14/2010	07/28/2010	SURVEY	DNR	09/10/2010	09/09/2010
STUNKARD, TOM	11/29/2007	12/03/2007	ANNUAL	DNR		
STUNKARD, TOM	11/07/2006	11/29/2006	SURVEY	DNR	01/29/2007	01/22/2007
STUNKARD, TOM	11/03/2005	11/09/2005	ANNUAL	DNR		
STUNKARD, TOM	11/17/2004	12/01/2004	ANNUAL	DNR		
STUNKARD, TOM	11/06/2003	11/07/2003	ANNUAL	DNR		
STUNKARD, TOM	11/13/2002	11/25/2002	ANNUAL	DNR		
STUNKARD, TOM	11/27/2001	12/10/2001	SURVEY	DNR		
STUNKARD, TOM	11/15/2000	11/16/2000	ANNUAL	DNR		
STUNKARD, TOM	12/02/1999	12/16/1999	ANNUAL	DNR		
STUNKARD, TOM	12/15/1998	12/22/1998	ANNUAL	DNR		
STUNKARD, TOM	11/12/1997	11/25/1997	ANNUAL	DNR		
STUNKARD, TOM	11/26/1996	12/16/1996	SURVEY	DNR		
STUNKARD, TOM	11/21/1995	01/05/1996	ANNUAL	DNR		
STUNKARD, TOM	11/10/1994	11/14/1994	ANNUAL	DNR		
STUNKARD, TOM	11/11/1993	11/16/1993	ANNUAL	DNR		
	12/11/1991		SURVEY	DNR		

Bacteriological Sampling History

Year	Distribution Safe	Distribution Unsafe	Confirmed Unsafe	Missed Samples	Raw Safe	Raw Unsafe	Fecal Positive?
2022	73			0	8		N
2021	132			0	12		N
2020	122			0	12		N
2019	120			0	12		N
2018	119			0	13		N
2017	108			0	12		N
2016	108			0	12		N

Chemical Sampling History

Year	Sample Group	Source ID	Samples Taken	Missed Samples	MCL Violations
2022	NITRATE	1	1	0	0
2022	NITRATE	4	1	0	0
2022	NITRATE	3	1	0	0
2022	FLUORIDE		7	0	0
2021	NITRATE	4	1	0	0
2021	NITRATE	1	1	0	0
2021	NITRATE	3	1	0	0
2021	FLUORIDE		12	0	0
2021	VOC		1	0	0
2020	SOC	3	2	0	0
2020	SOC	4	2	0	0
2020	FLUORIDE		12	0	0
2020	IOC	1	1	0	0
2020	SOC	1	2	0	0

Year	Sample Group	Source ID	Samples Taken	Missed Samples	MCL Violations
2020	VOC	1	1	0	0
2020	VOC	3	1	0	0
2020	VOC	4	1	0	0
2020	RAD	3	1	0	0
2020	VOC		1	0	0
2020	PBCU		20	0	0
2020	IOC	3	1	0	0
2020	IOC	4	1	0	0
2020	RAD	1	1	0	0
2020	RAD	4	1	0	0
2019	NITRATE	1	1	0	0
2019	NITRATE	4	1	0	0
2019	NITRATE	3	1	0	0
2019	FLUORIDE		12	0	0
2019	VOC		1	0	0
2018	NITRATE	4	1	0	0
2018	NITRATE	1	1	0	0
2018	NITRATE	3	1	0	0
2018	FLUORIDE		12	0	0
2018	VOC		1	0	0
2017	SOC	4	1	0	0
2017	SOC	3	1	0	0
2017	FLUORIDE		16	0	0
2017	IOC	1	1	0	0
2017	SOC	1	1	0	0
2017	VOC	1	1	0	0
2017	RAD	3	1	0	0
2017	VOC	4	1	0	0
2017	PBCU		20	0	0
2017	VOC		1	0	0
2017	IOC	3	1	0	0
2017	IOC	4	1	0	0
2016	NITRATE	1	1	0	0
2016	NITRATE	4	1	0	0
2016	NITRATE	3	1	0	0
2016	FLUORIDE		12	0	0
2016	VOC		2	0	0

Sample Group	Last Sampled
VOC	2021
BACTI	2022
SOC	2020
HAA5	2007
FLUORIDE	2022
NITRATE	2022
TTHM	2007
RAD	2020
PBCU	2020
DBP	2013
IOC	2020

MCL Violations

Source ID	Contaminant	Concentration	MCL	Units	Viol. Start	Viol. End	Continuing Operation?

None

Definitions

MCL = Maximum Contaminant Limit (as set by the Environmental Protection Agency (EPA))
BACTI = Bacteriological Sample
IOC = Sample for Inorganic Compounds
NITRATE = Nitrate Sample
PBCU = Lead and Copper Sample
RAD = Sample for Radioactivity
SOC = Sample for Synthetic Organic Compounds
VOC = Sample for Volatile Organic Compounds
FLUORIDE = Fluoride from Fluoridation
TTHM = Total Trihalomethane Sample

VILLAGE OF McFarland

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8/17/22

Dave Barkhahn
WI DNR, Water Supply
3911 Fish Hatchery Road
Fitchburg, WI 53711-5397

RE: Follow up to the letter dated July 21, 2022, addressing the 2022 Sanitary Survey Report and Notice of Noncompliance

Dear Dave,

Thank you for taking the time to complete our Sanitary Survey on July 15, 2022. I would like to take this opportunity to address the items listed in your report. Thank you for bringing these items to our attention.

Deficiencies

1. Annual inspection of all storage structure screens and seals is not conducted and documented.

Response: The utility had both water towers inspected on August 8, 2022, by a Remotely Operated Vehicle (ROV). Once the inspection reports are completed, I will forward them on to you for your records.

The gasket on the Burma Tower was replaced. We have photos of this work.
The gasket on the Holscher Tower was in good shape. We have photos of this work.
Both of these towers were inspected on July 27, 2022.

Recommendations

1. The source capacity appears to be inadequate to meet current and future demand.

Response: Source capacity will be addressed through our water system needs assessment that is currently underway.

2. The pump discharge pipe is not adequately protected from corrosion.

Response: The piping in the well houses does have primer paint on it. We experienced a replacement of components of the manifold piping and an elbow. As part of this work some of the bolts had "broken" paint on them. We will finish painting the manifold system once we get improved weather conditions and lower humidity.

3. Additional measures may be needed to enhance the security of the water supply system.

Response: The utility took your advice and is looking into various SCADA security measures. Steps were also taken to make sure that upgrades had occurred. Staff will be receiving training on security measures pertaining to our system once those updates have been made.

4. A comprehensive materials inventory may not be maintained.

Response: The utility, as part of its water meter upgrades, has begun to gather data related to the comprehensive materials inventory. The utility requires our meter installer contractor to record information on the incoming service line and associated plumbing, if visible. At this time, we believe that we will meet this requirement as long as the meter change-out program continues as planned.

Non-Conforming Features

The utility recognizes that over the years code changes have occurred that affect water systems and ours is no exception. Should the situation arise, we will correct non-conforming features as required.

Water Quality Monitoring and Reporting

The department works hard at ensuring that all water samples and daily testing is performed as needed and required.

Lead and Copper Monitoring

All lead and copper samples were collected as specified. It is getting harder and harder to collect samples from residents for a variety of reasons. We continue to work on improving our sample collection to meet this requirement.

Required Reports, Records, and Utility Programs

The department has a process set up for daily and monthly reporting requirements. The September 2020 monthly report was indeed two days late. This was my fault while reviewing the reports. I thought I hit the submit button when in reality, I closed out of the report. We are working on getting additional operators on board for submitting reports.

The utility is on the correct path for upgrades to the water system along with its associated equipment. Preventative maintenance such as valve turning and hydrant flushing continue to be a priority for the department.

Attached with this report are both tower inspections from 2015 and 2017, as requested. We previously sent you an updated water system map back on July 22, 2022

Certified Operator

Mark Weber renewed his certified waterworks operator license on July 28, 2022. All new Public Works staff are required to attend water school and become certified operators.

In closing, I hope that this letter addresses our efforts that have been and will be put forth to improve our water system. If you have any questions, please feel free to contact me.

Regards,

Jim Hessling
Director of Public Works

cc: Matt Schuenke, Village Administrator, via e-mail
g:\public works\waterworks sanitary survey report (dnr inspections)\2022\2022 sanitary survey report response letter'.docx

VILLAGE OF
McFarland

SUMMARY SHEET

MEETING DATE: **Monday, August 22, 2022**

SECTION: **Business**

DEPARTMENT: **Public Works**

CONTACT: **Aimee Irwin, Assistant to the Public Works Director, Jim Hessling, Public Works Director**

AGENDA ITEM: **Discussion regarding December meeting conflict**

PREVIOUS ACTION:
None

ISSUE SUMMARY:
The December PW&U meeting is scheduled for Monday, December 26th, which is the day in which the Village will observe Christmas Day. The staff recommend discussing this conflict and rescheduling the meeting, if one is needed. Past practice has been to cancel December meetings if the agenda items can wait a month to be discussed.

Possible dates to consider are:

- Thursday, 12/15
- Wednesday, 12/21
- Wednesday, 12/28
- Thursday, 12/29

Committee members were polled for the dates identified above. Of the responses received, the dates with the best availability are 12/15 and 12/21. Staff would recommend Wednesday, 12/21, to be closer to our regularly scheduled meeting date and allow a window of time from the November meeting.

FINANCIAL/BUDGET IMPACT:
None

VILLAGE PLAN REFERENCE:
None

ORDINANCE REFERENCE:
None

BOARD, COMMISSION OR COMMITTEE RECOMMENDATION:
Recommendation to change the regularly scheduled Public Works & Utilities Committee

meeting from December 26, 2022 to the date discussed by committee members.

ATTACHMENTS:
None