



Board of Public Works

Regular Meeting

335 South Broadway
De Pere, WI 54115
<http://www.de-pere.org>

Agenda

Monday, December 11, 2017

7:30 PM

De Pere City Hall Council Chambers

Pursuant to Wisconsin Statutes 19.84, Notice is hereby given to the public that a meeting of the **Board of Public Works** of the City of De Pere will be held on **December 11, 2017** at **7:30 PM** in the **De Pere City Hall Council Chambers**, 335 S. Broadway Street, De Pere, WI 54115.

This meeting can be viewed LIVE at www.depere.tv. This meeting is also rebroadcast on TW Cable Channel 4 and AT&T U-verse Channel 99 throughout the week and available on demand at www.depere.tv.

I. Call to Order

1. Roll Call

II. Public Comment

III. Items

1. Approval of the Board of Public Works October 9, 2017 Meeting Minutes.
2. Consider Project Approach for Sidewalk on the East Side of Lawrence Drive from Scheuring Road to Main Avenue*
3. Consider 2017-2018 Sewer Rate Study.*
4. Consider Approval of the James Street Streetscape Design Services*
5. Consider Updates to 2018 General Conditions and Standard Specifications
6. Consider Conveyance of Rights by Utility (Sanitary Sewer) for the WisDOT for Ashland Avenue (STH 32) and Parkview Road Project*
7. Consider Quit Claim Deed by Utility (Water Main) for the WisDOT for Ashland Avenue (STH 32) and Parkview Road Project*
8. Consider Green Bay Metropolitan Sewerage District Lease Agreement Amendment*
9. Consider Verizon's Amendment to Current Lease Agreement on Merrill Water Tower*
10. Consider Award of Contract for Project 17-20 Claude Allouez Bridge Repairs.*
11. Consider Award of Contract for Project 17-21 City of De Pere Sign Bridge.*
12. Consider Award of Contract for Project 17-22 Community Center Boiler Rebid.*

IV. Future Agenda Items

V. Adjournment

***Items with an asterisk require City Council approval.**

Any person wishing to attend this meeting who, because of disability, requires special accommodations should contact the Clerk-Treasurer's office at 339-4050 by Noon, Monday December 11, 2017 so that arrangements can be made.

Agenda Sent To:

Mayor

Alderspersons

Department Heads

TV, Newspapers & Radio Stations

Kress Family Library

De Pere Chamber of Commerce

Definitely De Pere

Tweet Garot

Bodart Electric

Jahnke General Contractors, Inc.

Andy Devos, WisDOT

Notice is hereby given that a majority of the members of the Common Council of the City of De Pere may attend this meeting to gather information about a subject (s) over which they have decision-making responsibility.

City of De Pere, Wisconsin

**Request For Board of Public Works Action**

MEETING DATE: December 11, 2017

DEPARTMENT: Public Works

FROM: Pam Denis

SUBJECT: Approval of the Board of Public Works October 9, 2017 Meeting Minutes.

ATTACHMENTS:

- BOPW October 9, 2017 Draft Meeting Minutes (PDF)



Board of Public Works

Regular Meeting

335 South Broadway
De Pere, WI 54115
<http://www.de-pere.org>

Draft Minutes

Monday, October 9, 2017

7:30 PM

De Pere City Hall Council Chambers

I. Call to Order

The meeting was called to order at 7:30 PM by Mayor Michael J. Walsh

Attendee Name	Title	Status	Arrived
James Boyd	Aldersperson	Present	
Dan Carpenter	Aldersperson	Present	
Jonathon Hansen	Aldersperson	Present	
Dean Raasch	Aldersperson	Present	
Michael J. Walsh	Mayor	Present	

Others present were Scott Thoresen, Director of Public Works, Eric Rakers, City Engineer, Judith Schmidt-Lehman, City Attorney, Ryan Jennings, Aldersperson, and Pam Denis Recording Secretary.

II. Public Comment

None.

III. Items

- Approval of Board of Public Works September 11, 2017 Meeting Minutes.

Aldersperson Carpenter moved to approve the Board of Public Works September 11, 2017 meeting minutes, Aldersperson Raasch seconded the motion. Upon vote, the motion passed and the minutes were approved.

RESULT:	ADOPTED [UNANIMOUS]
MOVER:	Dan Carpenter, Aldersperson
SECONDER:	Dean Raasch, Aldersperson
AYES:	Boyd, Carpenter, Hansen, Raasch, Walsh

- Consider Broadway Pedestrian Crossing Study and Policy Recommendations.*

Eric Rakers, City Engineer, reviewed the scope and requirements of the Broadway Pedestrian Crossing Study and stated that the study has been posted on our website and letters had been sent to the Public Information Meeting attendees advising them of the presentation tonight. He then introduced Ken Voight, of Ayres Associates, to review the study and conclusions. Ken Voight reviewed the study's purposes, general crosswalk considerations, and national and local community research in regard to pedestrian crossings. He stated that speed was a concern and WisDOT did a traffic speed study on Broadway and found the average speed was 30.3 mph and that 80% of the traffic speed was between 26-35mph. He reviewed pedestrian safety measures such as: flashing beacons, HAWK signals (flashing lights generated by pedestrian crossing buttons), traffic signals, median refuge islands, changing striping patterns, raised crosswalks, traffic circles, roundabouts, yield to pedestrian signs, etc.

Ken Voight presented the recommendations that were drawn from the study that could be used to facilitate pedestrian crossing on Broadway, including the following: upgrade all crosswalks with continental ladder markings, install and maintain "Yield to Pedestrian Signs" in the crosswalk or overhead, construct median refuge island at Randall Street,

install double sided pedestrian crosswalk signs and arrows on both sides of Broadway, install radar speed feedback signs, and a gateway entrance feature 700' north of Randall, and investigate a new Broadway Street/Fox River Trail Pedestrian Path connection somewhere between Morris St and Randall Avenue. A diagram was exhibited that showed all the possible pedestrian crossing upgrades. The report also contained a second tier approach for rapid flashing beacons at Randall and additional medians at Ridgeway, Fulton, and Franklin Streets depending on increased pedestrian use. A crosswalk policy was presented to be used throughout the City as part of the Appendix. Questions followed. Mayor Walsh stated that the recommendations had been taken to the budget meeting and the median was removed for two reasons: the cost and staff wasn't sure that the residents would be willing to remove trees for the medians so time was needed for feedback.

Eric Rakers, City Engineer, stated that staff was looking for a recommendation from the Board of Public Works to approve the study and Crosswalk Policy and take it to Council to be able to use in the future. He stated that there would be public information meetings and a tiered approach, giving residents time to comment and the Board of Public Works the ability to approve improvements.

Mayor Walsh moved to accept the Broadway Pedestrian Crossing Study and approve the City of De Pere Crosswalk Policy and forward them to the Common Council, Alderperson Boyd seconded the motion . Upon vote, the motion passed.

RESULT:	ADOPTED [UNANIMOUS]
MOVER:	Michael J. Walsh, Mayor
SECONDER:	James Boyd, Alderperson
AYES:	Boyd, Carpenter, Hansen, Raasch, Walsh

3. Consider Request for Third Street Parking Restriction (East Side) from Stewart to Marsh Streets.*

Eric Rakers, City Engineer, presented the request from St. Norbert College to restrict Third Street Parking on the east side from Stewart to Marsh Streets. He stated that the request was made to accommodate bus loading and unloading for the new Mulva Family Fitness and Sports Center. If approved, the request would go to the Common Council for approval and would require an ordinance to be updated. He also stated that it would have been better to be informed of the need as part of the site plan process. Questions followed. Mayor Walsh moved to open the meeting at 8:38pm to allow public comment, Alderperson Boyd seconded the motion. Upon vote, the motion passed. Tim Bald, representing St. Norbert College explained the necessity for a safe drop off area, free of vehicles parking and obstructing visibility. He also wished that it had been brought up before. Mayor Walsh moved to return to regular session at 8:40pm, Alderperson Boyd seconded the motion. Upon vote, the motion passed.

Alderperson Boyd moved to approve the request from St. Norbert College to restrict parking on the east side of Third Street between Stewart and March Streets, Alderperson Raasch seconded the motion. Upon vote, the motion passed.

RESULT:	ADOPTED [UNANIMOUS]
MOVER:	James Boyd, Alderperson
SECONDER:	Dean Raasch, Alderperson
AYES:	Boyd, Carpenter, Hansen, Raasch, Walsh

4. Clarification of Refuse/Recycle Container Storage Requirements of De Pere Municipal Code 82-3.

Scott Thoresen, Director of Public Works, presented clarification regarding the existing ordinance for container storage of polycarts and dumpsters. Judy Lehman-Schmidt, the City Attorney was present and explained certain aspects of the ordinance as outlined in her memo to the Board. Discussion followed including, but not exclusively: material permissible for screening and enclosure in industrial parks, the requirements for industrial park enclosures, requirements for industrial enclosure pads, extension of deadlines for enclosures, Planning Commission site requirements for new building in industrial parks, Nicolet Square dumpster requirements, existing industrial park requirements. Mayor Walsh allowed Alderperson Jennings to address the Board concerning the letter he had included in the Board packet. He stated that he understood the intent to upgrade the appearance of the business parks, but the concern in the letter was for clarification of material for enclosures and for concrete pads. Director Thoresen stated that concrete pads are not required, that the dumpsters can be put on gravel. He also said that there are no material requirements for the industrial park enclosures, other than they cannot be seen from the property line. Alderperson Boyd moved to go to open session at 9:08pm, Alderperson Raasch seconded the motion. Upon vote, the motion passed. Michael Peterson of Advanced Disposal, stated that he was getting calls from other businesses for clarification on enclosure structures. He said that these companies were concerned about the cost and space if they had to build with block or wood. He stated that the clarifications being discussed would help greatly. Mayor Walsh moved to return to regular session, at 9:10pm, Alderperson Raasch seconded the motion. Upon vote, the motion passed. Further discussion concerned follow up with clarification to those properties needing enclosures, agreement on not changing the ordinance, and also whether the deadline for enclosure should be extended. It was agreed that the deadline in the ordinance should remain, but that those properties needing an extension could contact the City. Director Thoresen stated that he would send out a clarifying letter regarding enclosure requirements, which would also explain that the City may consider grating an extension for individual situations. No action required.

5. Consider Nicolet Square Dumpster Services.*

Scott Thoresen, Director of Public Works, shared proposals from three vendors for the servicing of the Nicolet Square Dumpster. Advanced Disposal was the low bid. Director Thoresen stated that the next step, if approved by the Board, would be to send the assessments for 2018 for recycling fees and dumpster rental to property owners in Nicolet Square. He explained that he hoped to have this implemented and start at the end of November or beginning of December. The remaining garbage carts would be picked up after the last collection. Discussion followed.

Alderperson Raasch moved to approve the contract with Advanced Disposal for the Nicolet Square Dumpster Services, Alderperson Boyd seconded the motion. Upon vote, the motion passed.

RESULT:	ADOPTED [UNANIMOUS]
MOVER:	Dean Raasch, Alderperson
SECONDER:	James Boyd, Alderperson
AYES:	Boyd, Carpenter, Hansen, Raasch, Walsh

6. Consider Approval of State Municipal Agreement (SMA) with Wisconsin Department of Transportation (WisDOT) for Ashland Avenue at Parkview Intersection.*

Eric Rakers, City Engineer, reviewed the State Municipal Agreement (SMA) for Ashland Avenue and Parkview. This intersection is to be modified so that the westerly leg of

Parkview would be further south due to right angle crashes at the intersection. He explained that the Department of Transportation (WisDOT) has held meetings to gather input and arrived at this agreement. Eric Rakers explained that there would be minimal cost to the City. **Mayor Walsh moved to approve the SMA for Ashland Avenue and Parkview and forward to Common Council for approval, Alderperson Boyd seconded the motion. Upon vote, the motion passed.**

RESULT:	ADOPTED [UNANIMOUS]
MOVER:	Michael J. Walsh, Mayor
SECONDER:	James Boyd, Alderperson
AYES:	Boyd, Carpenter, Hansen, Raasch, Walsh

7. Consider 2017-2018 Snow & Ice Removal Rates

Scott Thoresen, Director of Public Works, presented the 2018 Snow and Ice Removal rates. He explained that the minimum charge of \$75 would remain the same as in 2017. Mayor Walsh reminded the Board that the snow removal issues are complaint driven and that residents have 48 hours from the end of the snowfall to clear the sidewalks. Director Thoresen reminded the Board that clear sidewalks need to be maintained, even when the wind blows drifts over them.

Alderperson Raasch moved to approve the 2018 Snow and Ice Removal rates, Alderperson Carpenter seconded the motion. Upon vote, the motion passed.

RESULT:	ADOPTED [UNANIMOUS]
MOVER:	Dean Raasch, Alderperson
SECONDER:	Dan Carpenter, Alderperson
AYES:	Boyd, Carpenter, Hansen, Raasch, Walsh

IV. Future Agenda Items

Alderperson Hansen asked if the new policy for crosswalks gets adopted, would there be a City wide review of pedestrian crossing areas. City Engineer Rakers stated that there would not be a review of all crosswalks in the City, that moving forward would be by complaints. Requests for review could be made through the Parking and Traffic committee by contacting him.

V. Adjournment

Mayor Walsh moved to adjourn the Board of Public Works meeting, Alderperson Raasch seconded the motion. Upon vote, the motion passed and the meeting was adjourned at 9:23pm.

Respectfully submitted,
Pam Denis

City of De Pere, Wisconsin

**Request For Board of Public Works Action**

MEETING DATE: December 11, 2017

DEPARTMENT: Public Works

FROM: Eric Rakers

SUBJECT: Consider Project Approach for Sidewalk on the East Side of Lawrence Drive from Scheuring Road to Main Avenue*

In August, the Board approved the project approach and proposed timeline for construction of sidewalk on the east side of Lawrence Drive from Scheuring Road to Main Avenue in 2019. As part of the approach, staff sent a survey to impacted property owners and the surrounding area from Scheuring Road to Main Avenue and from Lawrence Drive to Ninth Street. Staff held a public information meeting on November 7, 2017.

The purpose for this item is to present an update to the Board and Council and reconfirm the project approach for construction in 2019.

Background Information

In August of 2008, the Board of Public Works approved the installation of sidewalk on Lawrence Drive from Scheuring Road to the southern city limits. This sidewalk was subsequently constructed in 2015. In October of 2008, the Board of Public Works considered the installation of sidewalk on Lawrence Drive from Scheuring Road to Main Avenue, however the motion failed. Based on direction from the Board, sidewalk is being re-evaluated at this location.

Staff has been working on the preliminary design of sidewalk along Lawrence Drive from Scheuring Road to Main Avenue to evaluate utility impacts and existing right of way. Currently there is sidewalk exiting the roundabout north of Scheuring Road approximately 120 feet, and entering and exiting the roundabout at Grant Street approximately 70 feet to the south and 90 feet to the north. The proposed sidewalk design has sidewalk on the east side of Lawrence Drive from the roundabout at Scheuring Road to Main Avenue.

The project approach for costs on the sidewalk is that all costs directly associated with the installation of the sidewalk will be included in the assessment. This includes standard quantities and costs that other residents in the City are charged when new sidewalk is installed such as the concrete sidewalk, the crushed aggregate base course for the sidewalk, and restoration of the lawn one to two feet on either side of the sidewalk. The sidewalk through the driveway is proposed to be assessed back to the property owner. Other costs that are not standard when new sidewalk is installed and assessed on a street reconstruction project or new sidewalk in a new

development are included in the costs to be funded by the City. These costs included asphalt and concrete driveway replacements due to grade, curb and gutter repairs, sidewalk ramps, lawn restoration beyond normal limits, yard drain installation, retaining walls, and right of way acquisition.

Survey of Property Owners

Staff held a Public Information Meeting with property owners and nearby residents on November 7, 2017. The City invited all the property owners and approximately 740 parcels in the area to gather input on the proposed sidewalk. A survey was attached to the invitation for those who could not attend. While the majority of property owners facing new construction of sidewalk are opposed to the project, the majority of property owners responding to the survey in the residential area east of Lawrence Drive are in favor of the sidewalk. A summary of results to the survey is as follows:

In Favor	Opposed	Neutral
53	21	2

A summary of responses along with a map identifying the location of responses has been included.

Facility Need

Lawrence Drive is an arterial street from Scheuring Road to Main Avenue. Streets identified as arterial are those with higher traffic volumes in the City. For high volume streets, it is important to provide facilities for pedestrians. A map has been included identifying the arterials in the City, along with those that have sidewalk (green) and those that do not (red). As can be seen on the map, the majority of streets that have been urbanized (curb and gutter versus ditches), have sidewalk. Additionally, Lawrence Drive is posted with a 35 mph speed limit. The higher speed limit presents additional challenges for use by pedestrians.

Connectivity

The City has been a proponent of sidewalk and pedestrian friendly facilities. One important component to sidewalk is connectivity. The proposed sidewalk along Lawrence Drive will provide future connectivity between the residential areas along Grant Street and to the east of Lawrence Drive to the businesses on Lawrence Drive.

Municipal Code

In addition to the items discussed above, the City Municipal Code addresses the installation of sidewalk in the City. Section 22-5 *Construction and repair of streets and sidewalks*, of the code says the following:

“(d) *Sidewalks required constructed. Sidewalks shall be constructed according to the specifications as set forth in subsection (b) of this section. The board of public works shall, at least annually, review those areas where sidewalks have not been constructed to determine the need for such construction for the safety of all citizens and recommend to the common council the installation of sidewalks in such areas. In reviewing the need for such construction of sidewalks, the board and common council shall consider the following*

factors: thoroughfares, connector streets, connection with public facilities such as schools and parks, pedestrian and vehicular safety and topographic consideration. Upon such recommendation the common council may require installation pursuant to Wis. Stats. § 66.0907.”

Sidewalk along Lawrence Drive conforms to the requirements in the Code in that it provides pedestrian facilities on an arterial street, which would be considered a connector street; provides future connections between residential and commercial areas; and improves pedestrian and vehicular safety.

Project Approach and Timeline

In the past, property owners have been given the opportunity to install their own sidewalk with a licensed contractor. If the property owner does not install their own sidewalk once ordered, the City installs and bills the property owner. Staff is proposing to allow property owners the opportunity to construct their own sidewalk in 2018 and early 2019. If the property owners do not install the sidewalk, the City will include their sidewalk with the project and assess.

Several property owners have large lots. The cost of sidewalk will be large for these property owners. Staff is proposing to construct and special assess the sidewalk in 2019 so that the Board and Council can provide an extended time frame for paying the special assessments. The project approach below is the same as that presented at the August meeting.

The proposed timeline for the project construction is as follows:

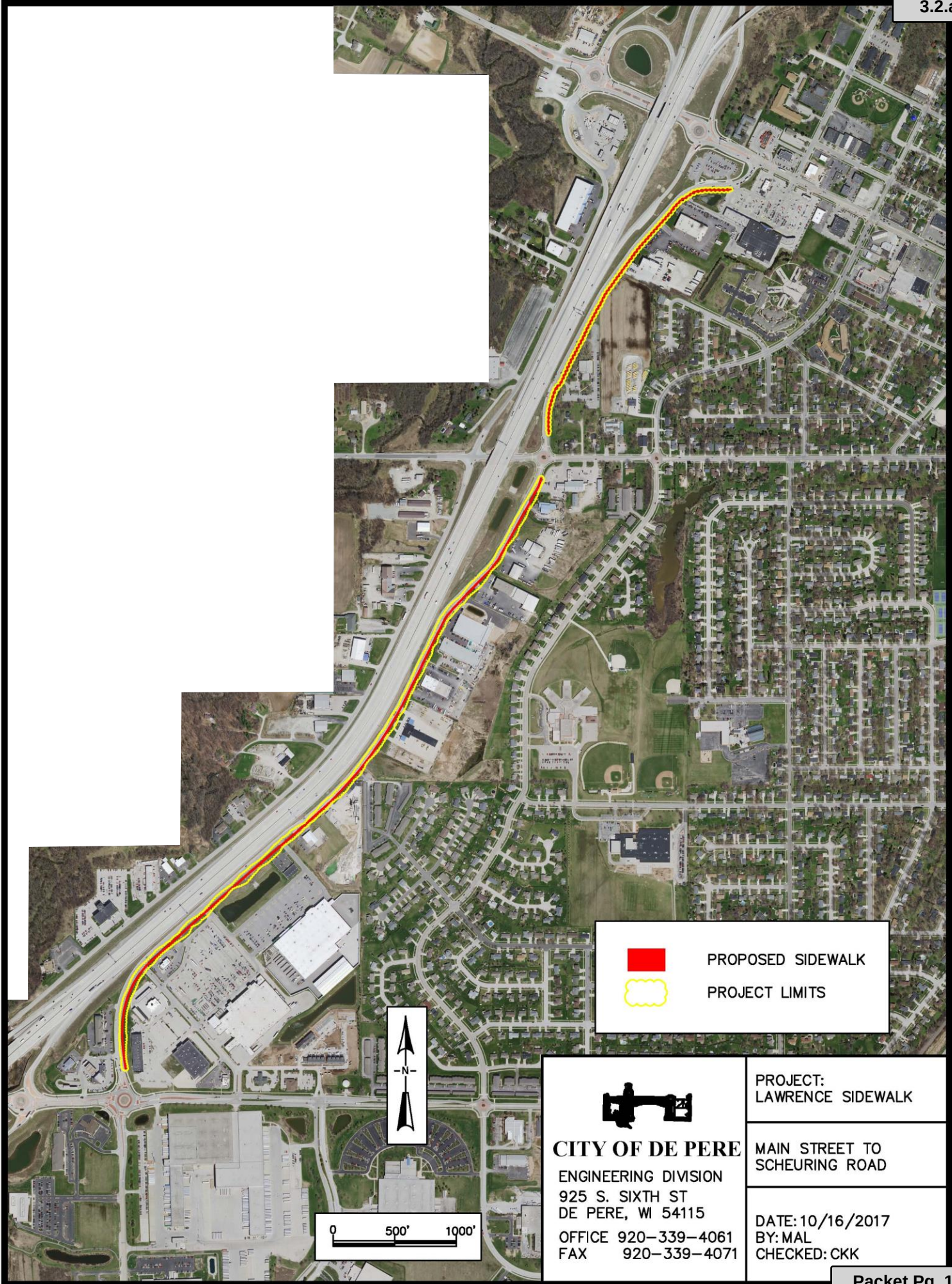
1. Public information in late 2017 with property owners to notify of upcoming sidewalk installation in 2019. **COMPLETED.**
2. Property owners are given the opportunity to construct sidewalk with a licensed contractor in 2018 and up to the end of June 2019.
3. The City negotiates the acquisition of required right-of-way (if required) in 2018. Additionally, coordinate utility relocation in 2018 for moving in 2019. There appears to be enough right-of-way to install the sidewalk, however, the terrace for snow storage will be small in some areas and there are a significant number of utilities (poles, pedestals, etc) in conflict with the proposed sidewalk. Staff will meet with property owners to see if they would prefer a wider terrace through the acquisition of right of way in order to make snow removal on the sidewalk easier. Staff will also meet with utility companies to determine if there is City costs associated with the utility relocations.
4. Sidewalks not installed by property owners by the end of June, 2019 will be included in a City bid project in 2019. The cost for sidewalk will be special assessed against benefitting properties. The costs for items special assessed for this segment will be similar to the assessments for Lawrence Drive south of Scheuring Road. For that project, the items directly related to the sidewalk installation (excavation, base course, concrete, and two feet of terrace restoration) were assessed. Other costs such as yard drains, driveway replacements, utility relocations, etc. that would have been included with the street construction if the sidewalk were constructed at the time of street construction, were not assessed and paid by the City.

Recommendation

Staff recommends that the Board reaffirm and approve the project approach and proceed with design of the project for 2019 construction.

ATTACHMENTS:

- CI_BOPW_Lawrence Drive Sidewalk Map_12.11.2017 (PDF)
- CI-BOPW-Lawrence_Sidewalk_ArterialWithSidewalks2017 (PDF)
- Lawrence Drive Sidewalk Public Comment Letter Summary 2107 (PDF)



PROPOSED SIDEWALK



PROJECT LIMITS



CITY OF DE PERE

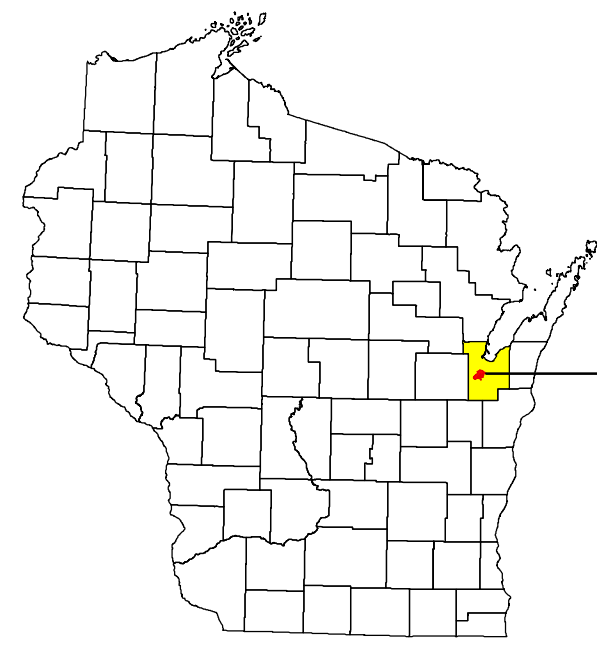
ENGINEERING DIVISION
925 S. SIXTH ST
DE PERE, WI 54115

OFFICE 920-339-4061
FAX 920-339-4071

PROJECT:
LAWRENCE SIDEWALK

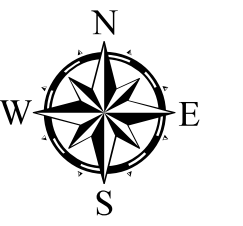
MAIN STREET TO
SCHEURING ROAD

DATE: 10/16/2017
BY: MAL
CHECKED: CKK



Sidewalks Along Arterial Roads

City of De Pere, Wisconsin



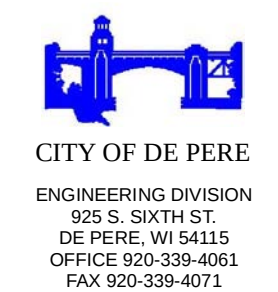
PROPOSED 2019 SIDEWALK PROJECT



Legend

- Arterial Roads with Sidewalks
- Arterial Roads
- City of De Pere Boundary

0 0.25 0.5 1 Miles



TITLE:
Transportation Classification
PROJECT:
Sidewalk Exhibit
DATE: 8/3/2017
BY: BB
CHECKED:

NAME	ADDRESS	YES	NO	UNDECIDED	COMMENTS
Terri Fote	1500 Scheuring Rd	1			"I hope it goes through"
Mike Campbell	730 S. 9th St	1			
Susan M Mullins	324 S 9th St	1			
Tina Pickard	850 Morning Glory Lane # 102	1			There are people in scooters & wheelchairs that can't go on the street, because people drive fast and can't see what's in front of them.
Mark Challe	1300 Meadowview	1			A sidewalk would make Lawrence Drive much safer.
Claire D. Pribyl	1282 Crown Ct. #4	1			Yes, please, please, please!! This proposed sidewalk would be a godsend to me and most surrounding neighbors in many many blocks around. We walking shoppers, headed to the Walmart, Menards, etc. stores find it very difficult to avoid traffic along Lawrence Dr. A sidewalk would certainly better allow more of us to conveniently shop in that area, bringing more customers to the stores.
Netanyah Kirschenberg	850 Morning Glory Ln, #112	1			The more sidewalks, the merrier. They are safer for people to walk places than being forced to walk on an unlevel gravel surface. Sidewalks also create more accessibility to people in wheelchairs. This in turn can help everyone achieve greater independence from relying on motor vehicles to get them places. They could potentially walk or ride a mobility scooter on said sidewalks.
Greg Pieters	1288 Crown Ct, Apt. #1	1			Very, very good idea. Much safer for pedestrians.
Terri Champeau	850 Morning Glory Ln, Apt. #228	1			I think a sidewalk would be a good thing. If there is a sidewalk I will use it.
James DeRuyter	850 Morning Glory Ln, Unit 145	1			I see people walking along Lawrence Dr. It would be a help for people to go to Menards, Walmart or other stores.
Suzette Bertrand	850 Morning Glory Ln, Apt. 130	1			
J Kapp	414 Moon Glow dr	1			
James & Stephanie Fetterhoff	1380 Scheuring Rd, D25	1			My husband and I think a sidewalk there is a great idea. Pedestrians need a safe place to walk that isn't in the road or the grass.
Dave Kubiak- Poolworks	765 Lawrence Dr	1			I see lots of people walking on the road. Very dangerous!! Lawrence Drive needs a sidewalk!!
Colleen Wielgus	1295 Crown Ct	1			

NAME	ADDRESS	YES	NO	UNDECIDED	COMMENTS
Travis Maurer	628 S Ninth St	1			This is a great idea over years the City has developed more population in areas that did not exist and I personally walk this road to Wal-Mart. It's dangerous, people drive fast. And this would be a proper addition to Lawrence Drive
Ashley Clarke	1298 Crown Ct., Apt 1	1			
Sharon Zupke	416 S. 9th St		1		Not necessary, very few people walking in this area. Wish you'd ask for comments before replacing sidewalk parts on S. 9th St. this summer. Two out of four sections in front of my duplex were replace for NO REASON, while a cracked section that allows water & ice to accumulate wasn't touched. Also the contractor's work was sloppy & they planted weeds instead of grass seed at the end. I talked/complained to a summer intern in my yard & called the City, but received no response. This was a waste of time and money.
Roman Svetlechni	840 Park St	1			I have walked this stretch of road. I think it's quite dangerous for walking. Sidewalk is a great idea!
Joan Zuehls	840 Park St			1	What do you mean proximity to the project? I live on corner of Park and Ninth St. It may help people who ride bikes or walk their dogs. I travel on the buses a lot. Will the taxes go up for the people living in that area?
Jim Motley	1249 Franco Ct	1			Sound like a great addition to a great City!
Daniel Bruski	850 Morning Glory Ln #114		1		We have other infrastructure needs that top our priority list. Resurfacing Main Street should be a priority, not a new sidewalk. Existing projects deserve attention, and would be a much better use of De Pere's taxpayer money. Resurfacing Main Street is just ONE of several existing projects in need of work. De Pere First. Let's Do Right. (Possible candidate for Mayor)
Cindy Fermanich	1280 Crown Ct, #2	1			A (cement?) sidewalk will make it easier for me to walk to Walmart or any other stores in the area and or ride my bike. However, is asphalt a softer surface? (easier on the feet and legs)
Lisa Jansen	1276 S 9th St	1			

NAME	ADDRESS	YES	NO	UNDECIDED	COMMENTS
Gail & James Champagne	1350 S Carrington Ln			1	I am just concerned because that part of Lawrence Dr is a high traffic area, then add pedestrians. Little worried about all the traffic.
Jim Strompolis	1259 N Franco Ct	1			Because these areas are a large part businesses, it would promote safety & convenience to walkers. After a conversation that my husband had 9w/Chase) we feel OK about it due to no spike in property taxes. Construction areas (until finished) are harder to navigate for traffic though.
Tanya Meyer	1324 Meadow View Ln	1			Looking forward to a safe walkway to local stores. Thank you!!
Don Sliwka	510 Acreview (owns 808/810 S 9th)		1		I'm only opposed to the sidewalk because I think the City could find a better use for the expense. Who benefits from the sidewalks? There are no residences on the route. There are no business that bring in pedestrians. If a resident of 9th St wants to use it for a walk the lack of cross streets make it an extremely long walk. They won't use it. Encouraging pedestrian traffic at the Grant St roundabout may not be a great idea. The only user could be employees of some of the businesses on the route for a noon walk. Even if grant money is paying for the sidewalk project, that's a pretty limited usage.
Country Visions Coop	1221 Grant and Lawrence Dr		1		See attached comment
Deb Johnson	1351 S Carrington Ln	1			Completely in favor of a much more accessible community.
William Keyser	627 S Ninth St 600-602 S Ninth	2			Great, but how about fixing the bumpy stretch from Lawrence round about to American Blvd? Detouring traffic to repair that section would be easy or could you at least bring in a roadtec machine to shave that section FLAT!!!!It would be nice to have a sidewalk so when I go for a walk I can go Ninth St to Scheuring to Lawrence to Grant and back to 9th St. But I would you rather use the cement to finish Scheuring Rd from Lawrence Dr to American Blvd. There is no reason you can't detour 2 lanes of traffic - American Blvd to Fortune Dr to Lawrence OR could you run a roadtech machine and shave off the high spots. (Try driving a big truck down that bump road)!!! (2 properties)
Michael Picard	850 Morning Glory Ln, Apt. 131	1			

NAME	ADDRESS	YES	NO	UNDECIDED	COMMENTS
Theresa Fuerst	1335 N Carrington Ln	1			Although I doubt I will use it, it will be a safe place for walkers, people to ride their bikes to the stores or on their way to school (teens, kids) I think the Town of Lawrence could pitch in as their taxes are much lower and they would benefit as well. It would help those in the apartments have a safe place to wak in case they have no car.
Lauren March & Anthony Flood	550 S 9th St	1			
Lamers A&K Properties LLP	430 S 9th 422 S 9th WD-D0206-2		3		3 properties
Mike Uttech	1374 S Carrington Cl	1			
Linda Van Vonderen	1357 S 9th St		1		
Matt Gauthier	1116 S 9th St	1			I have gone for runs around the block here which includes exactly where you want to put the sidewalk and I would feel significantly more safe being able to use the sidewalk to run instead of the side of the busy Lawrence Drive!
Mike DeCleene DeCleene Truck Refrigeration & Trailer Sales	625 Lawrence Drive		1		1) We are a business district, not residential.2) Lawrence Dr. could be striped for pedestrian and bike traffic - it is wide enough. 3) Who will be responsible for the construction, maintenance & upkeep 4) Route pedestrian traffic to Ninth St. 5) If a sidewalk must go in, do it on the west side of Lawrence Drive.
Matt Hettman	570 S. Ninth St.	1			I believe this would be a good idea, there is a lot of increased foot traffic around the area.
Susan Brockelsby	850 Monring Glory Ln.	1			To Mayor Walsh: Now if we could get a No Parking on one side of the street on Park Street!! During the winter months theres are too many postall workers parking on Ningth by the apartments making it difficult to see traffic when exiting the parking lots! Thank you!
Ken and Geri Dvorak	1280 Crown Ct.	1			We feel this is a great improvement!
Alberta Gerrits	850 Morning Glory Ln	1			
Dairyland Labs	1111 Lawrence Dr.	1			
Susan Mashl	1170 S. 9th St	1			

NAME	ADDRESS	YES	NO	UNDECIDED	COMMENTS
Aaron Hoff - Transport Refrigerations	301 Lawrence Dr		1		Extra burden & responsibility to businesses makes this unfavorable: snow removal, liability for slips & falls, tax bill for installation. Recommendation: install sidewalk on west side of Lawrence Dr. or no sidewalk.
Anonymous			1		I see no advantages, just more traffic accidents for drivers trying to access businesses.
Roger E Hock	850 Morning Glory Ln	1			It's about time.
Cummins	875 Lawrence Dr	1			Would be wise not having people walk in the road.
Diane Hockers	429 S Ninth St 421 s Ninth St	2			I am in favor of putting in a sidewalk on the east side of Lawrence Drive. A number of people, myself included, occasionally walk to Menards or Wal-Mart and it's difficult with all of the traffic.
David Schlemmer	783 S 9th St		1		Cost and upkeep far outweighs the need for more sidewalks
Sharon L McNeiley	1380 Scheuring Rd, #C17	1			Would like to see bike lanes also! Marked! Do it right one time!
Todd Thomas-Creative Business Signs	505 Lawrence Dr		1		We have many large trucks/semis entering the property every day. I am concerned for safety of people walking. A better option would be to put it on the highway side of the street-west side.
Bob Krzewina	1197 Grant St	1			
Mark Hillert	402 Apollo Way		1		If anything is done to this route, I think the City should STRONGLY consider the installation of a COMBINATION BIKE/PEDESTRIAN PATHWAY instead of a sidewalk. Safer for biking as well as walking. Thanks!
Tanner Hachl	509 S Ninth St	1			We live on the corner of Grant and 9th with a few dogs we walk often. We'd love to be able to walk to doggy day care or Next Level Fitness and feel safe while doing so.
Linda Fischer	1403 S. Ninth St		1		I travel that street daily and hardly ever see a pedestrian. I don't see any reason to install sidewalks in that area.
Michelle Tennant			1		Our taxes are high enough
Glen Reit- owner Dairyland Lab Property	N27516 St Rd 93		1		No sidewalk is needed and adds cost
Aurio LLC	841 Highview Ln	1			
Diane Kremar	401 Aloysius Ct	1			
Alouis & Virginia Arendt	N94595 Cty Rd U		1		

NAME	ADDRESS	YES	NO	UNDECIDED	COMMENTS
Stacy Rose	1251 Crown Ct				
K. Norman	1375 Carrinton Ln	1			If minimal to zero increase in tax. Concerned cost placed into resident tax for this addition.
Anonymous		1			
Ray Hoffman	414-416 S. Ninth WD-D0218-2	2			Owns 2 properties
Dan Shoemaker JX Enterprises	201 Lawrence Dr		1		This stretch is all industrial. We do not see a need for a sidewalk and a continued disruption to all the local businesses. Over the last 10 years, Lawrence Dr. has been consistently re-worked, continuing with the 2018 round-about project. Thanks!
Bob Hecker	904 Green Ridge		1		Don't think it is necessary! As a builder/remodeler, I make almost daily trips to Menard's and also frequent trips to WalMart at other times and don't see that many people walking there. In addition, being a Festival customer, nor do I see people walking along that stretch of Lawrence Dr. I think it will be an added expense to those businesses to install and maintain (snow removal) with NO benefit to them.
Sally and Scott Kazik	435 S 9th St	1			
Kate Willett	1305 Franco Ct	1			
Paul Anderson	1225 Westwood Dr		1		Please put the labor and expense for constructing the sidewalk towards repairing roads, i.e. Main Street, Grant St.
Felchlin Family	403 Moonglow Drive	1			Thanks for the opportunity to provide input. We're always in favor of making our neighborhood more walkable!
TOTALS		53	21	2	
NOTE: Multiple votes indicate that the business or individual owns more than one property/parcel in the survey targeted area.					

City of De Pere, Wisconsin

**Request For Board of Public Works Action**

MEETING DATE: December 11, 2017

DEPARTMENT: Board of Public Works

FROM: Scott Thoresen

SUBJECT: Consider 2017-2018 Sewer Rate Study.*

To: Honorable Mayor and Members of Public Works Committee
 From: Joe Zegers, Finance Director
 Date: December 8, 2017
 Subject: 2017-2018 Sewer Rate Study

I have attached the Wastewater Rate Study prepared by Schenck for your consideration for the December 11, 2017 Public Works Committee meeting. A representative from Schenck will attend the meeting and go through the details of the report for you. The report includes the recent Green Bay Metropolitan Sewerage District (GBMSD) 2018 rates which were approved by their Commission December 6th, 2017. The adopted 2018 GBMSD budget is attached for your review.

The attached projected operating statements reflect a zero rate increase for sewer bills targeting the 1st quarter billing mailed to general customers in the billing received in late March 2018. The statements reflect a slight rate decrease for billings to the paper mill customers beginning with their January 2018 invoice as they are billed monthly. The analysis indicates an estimated \$203,147 surplus for 2017 and a projected \$153,060 surplus for 2018.

The model with the present 2018 City rates shows the **average** quarterly residential bill remaining at the 2017 average of \$138.07 for the 1st quarter of 2018 which is shown on page 5 of the report. The report also shows on page 6 & 7 the decreases for the three operating paper mills. The new rates directly pass on the GBMSD treatment and daily monitoring rates to the paper mills and also include a treatment administrative fee of \$22,800 per year as well as revising the collection fee for the Sonoco and Expera mills that do not have their own dedicated pipe that goes directly to the treatment plant as in the case of Fox River Fiber. Their rate decreases vary due to this and their particular usage factors and ranges from 1.80% to 4.77 % from the 2017 rates.

You will also find an additional page at the end of the attachment of a calculation of the additional increase needed on the general customer sewer bills to generate additional cash to address our cash situation that has been noted in the audit management letter over the last few years. The table shows additional percent increases of 1% to 5% above the unchanged general customer rates indicated in the study that would be required to generate additional cash in \$50,000 increments. This is presented for

your review and consideration if you want to propose raising the unchanged 2017 sewer rate above the amount in the rate study. The cash deficit at December 31, 2016 was \$273,507 which after the projected 2017 and 2018 results on page 1 of the report is estimated to be roughly \$80,000 at December 31, 2018. This is still relatively small and represents roughly less than 0.08% of the sewer utility operating budget. For your information bond ratings agencies generally advise this to be at least 5%-10% or in the City's case that would be \$500,000 to \$1,000,000.

Feel free to contact me should you have any questions on this and I will also be at the Board of Public Works meeting on December 11th, 2017.

ATTACHMENTS:

- 2017 WasteWater Rate Report (PDF)
- 2017 WasteWaterSummary (PDF)
- 2018 Adopted Budget (PDF)

**CITY OF DEPERE
WASTEWATER UTILITY
PROPOSED RATES
DECEMBER 2017**

**City of DePere Wastewater Utility
Proposed Rates
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City of DePere Wastewater Utility
Projected Operating Statements

PROJECTED OPERATING STATEMENTS

Revenues and Other Sources

	Actual 2015	Actual 2016	Projected 2017	with increase Estimated 2018
User charges - general customers	\$ 4,320,931	\$ 4,699,496	\$ 5,002,012	\$ 5,062,310
User charges- paper mills				
NEW Water treatment charges	4,066,337	3,900,760	4,263,471	3,961,840
Fixed administrative charges	37,800	39,600	50,400	68,400
Collection charges - variable	139,918	217,817	236,681	235,977
Forfeited discounts	48,080	69,528	48,000	48,000
Collection on receivable from NEW Water	-	-	160,485	160,485
Total Revenues Other Sources	8,613,066	8,927,201	9,761,049	9,537,012

Expenses and Other Uses

Treatment charges				
General customers	2,021,257	1,865,059	1,833,259	1,536,202
Paper mills - pass through	3,418,810	3,169,260	3,274,344	2,636,742
Fixed Charge				
General customers	355,915	398,390	554,730	663,385
Paper mills - pass through	632,738	730,626	1,010,438	1,325,098
Operation and maintenance	721,862	942,942	891,051	1,085,906
Sewer share of meter reading expenses	145,936	151,966	160,000	167,000
Capital replacement outlay	973,497	1,033,253	1,389,689	1,521,800
NEW Water annual debt service requirements	31,275	31,275	31,275	31,275
Current principal and interest payments	-	385,635	413,116	416,544
Total Expenses and Other Uses	8,301,290	8,708,406	9,557,902	9,383,952

Excess Revenues (Expenses)

\$ 311,776	\$ 218,795	\$ 203,147	\$ 153,060
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**City of DePere Wastewater Utility
Calculation of Revenue Requirement and Proposed Rates - Treatment**

GENERAL CUSTOMERS

Costs to be recovered:

Treatment charges
Fixed portion allocated to variable
Less: Collection on receivable from NEW Water
Less: Recovery of administrative expenses
Totals

2018 Estimated	
Fixed	Variable
663,385	1,536,202
(300,000)	
(160,485)	663,385.00
(68,400)	-
\$ 134,500	\$ 2,199,587

FIXED CHARGES - GENERAL CUSTOMERS

Meter Size	Number of Customers	User Charge Factor	Per Quarter	Per Year	Annual Revenue
3/4"	8,442	1.00	\$ 3.30	\$ 13.20	\$ 111,434
1"	136	2.50	8.25	33.00	4,488
1 1/2"	121	5.00	16.50	66.00	7,986
2"	82	8.00	26.40	105.60	8,659
3"	46	15.00	49.50	198.00	9,108
4"	22	45.00	148.50	594.00	13,068
	<u>8,849</u>				<u>\$ 154,744</u>

VARIABLE CHARGES - GENERAL CUSTOMERS

Metered Flow

Gallons Billed

Actual 2016	Projected 2017	Estimated 2018
498,986,600	504,894,374	505,000,000

Proposed Treatment Rate - General Customers

Variable Costs

Proposed Rate per thousand	Metered Water Flow	Recovery of Costs
\$ 4.52	505,000,000	\$ 2,282,600

PAPER MILLS

Actual Expenses

Wastewater treatment charges

Paper Mills- variable charge

Paper Mills- fixed charge

Actual 2015	Actual 2016	Projected 2017	Estimated 2018
\$ 3,418,810	\$ 3,169,260	\$ 3,274,344	\$ 2,636,742
	\$ 730,626	\$ 1,010,438	\$ 1,325,098

Treatment Rates - Paper Mills

Variable treatment charges will be a direct pass-through from NEW Water

Fox River Fiber is included in the NEW Water budget as a separate customer. Fixed treatment charges of \$553,358 have been directly allocated to 4them. In addition \$752,968 of the fixed charge to the City has been allocated to the remaining paper mills.

Treatment Fixed Administrative Fee

Allocation of 10% of 2018 budgeted administrative costs - total \$680,685

Charged equally to three paper mills - rate of \$1,900 per month

Allocation of Costs

\$ 1,900

City of DePere Wastewater Utility
Projected Expenses and Calculation of Revenue Requirement - Collection System

PROJECTED EXPENSES AND OTHER USES

	Actual 2015	Actual 2016	Projected 2017	Projected 2018	Allocation of Expenses	
					Fixed	Variable
Operation and maintenance	\$ 721,862	\$ 942,942	\$ 891,051	\$ 1,085,906	\$ 165,000	\$ 920,906
Sewer share of meter reading expenses	145,936	151,966	160,000	167,000	167,000	-
Capital replacement outlay	973,497	1,033,253	1,389,689	1,521,800	900,000	621,800
NEW Water annual debt service requirements	31,275	31,275	31,275	31,275	31,275	-
Current principal and interest payments	-	385,635	413,116	416,544	416,544	-
Total Expenses and Other Uses	<u>\$ 1,872,570</u>	<u>\$ 2,545,071</u>	<u>\$ 2,885,131</u>	<u>\$ 3,222,525</u>	<u>\$ 1,679,819</u>	<u>\$ 1,542,706</u>

REVENUE REQUIREMENT- COLLECTION SYSTEM

Expenditures and Other Uses	
Recovered through fixed charges to general customers	\$ 1,679,819
Recovered through volume charges to all customers	<u>1,542,706</u>
Total Revenue Requirement - Collection System	<u>\$ 3,222,525</u>

City of DePere Wastewater Utility
Proposed Rates - Fixed and Volume Charges - Collection System

FIXED CHARGES - GENERAL CUSTOMERS

	2018 Estimated
Costs to be recovered:	
Operation and maintenance - fixed portion	165,000
Sewer share of meter reading expenses	167,000
Capital replacement outlay	900,000
NEW Water annual debt service requirements	31,275
Current principal and interest payments	416,544
Total	<u>\$ 1,679,819</u>

Meter Size	Number of Customers	User Charge Factor	Per Quarter	Per Year	Annual Revenue
3/4"	8,442	1.00	\$ 28.00	\$ 112.00	\$ 945,504
1"	136	2.50	70.00	280.00	38,080
1 1/2"	121	5.00	140.00	560.00	67,760
2"	82	8.00	224.00	896.00	73,472
3"	46	15.00	420.00	1,680.00	77,280
4"	22	45.00	1,260.00	5,040.00	110,880
	<u>8,849</u>				<u>\$ 1,312,976</u>

DAILY MONITORING CHARGE - PAPER MILLS

Charges are a direct pass through from NEW Water - estimated at \$3,100 per month

VOLUME CHARGE- ALL CUSTOMERS

Costs to be Recovered	2018 Estimated
Operation and maintenance - variable portion	\$ 1,542,706
Less: Allocated to customers where calculated charges exceed 15% of revenue requirement	(138,100)
Net to be Recovered through Volume Charges	<u>\$ 1,404,606</u>

Gallons sold and wastewater flows	2018 Estimated
General customers - water gallons sold	505,000,000
Paper Mills with < 15% (wastewater)	<u>37,674,000</u>
Total	<u>542,674,000</u>

Proposed Rates	Proposed Rate	Billable Flows	Recovery of Costs
Variable Costs	\$ 2.598	542,674,000	\$ 1,409,867

City of DePere Wastewater Utility
Proposed Rate Increase - General Customers Summary

WASTEWATER RATES

Current Rates		
Volume charge - treatment		
Treatment	\$4.52/ thousand gallons	
Treatment Fixed charge- quarterly		
3/4"	\$	3.30
1"		8.25
1 1/2"		16.50
2"		26.40
3"		49.50
4"		148.50
Volume charge - collection - quarterly		
Collection	\$2.598/ thousand gallons	
Collection Fixed charge - quarterly		
3/4"	\$	28.00
1"		70.00
1 1/2"		140.00
2"		224.00
3"		420.00
4"		1,260.00

Proposed Rates - 2018		
Volume charge - treatment		
Treatment	\$4.52/ thousand gallons	
Treatment Fixed charge- quarterly		
3/4"	\$	3.30
1"		8.25
1 1/2"		16.50
2"		26.40
3"		49.50
4"		148.50
Volume charge - collection - quarterly		
Collection	\$2.598/ thousand gallons	
Collection Fixed charge - quarterly		
3/4"	\$	28.00
1"		70.00
1 1/2"		140.00
2"		224.00
3"		420.00
4"		1,260.00

AVERAGE RESIDENTIAL BILL

In thousand gallons	
Per Year	Per Quarter
60.00	15.00

	Current Rates	
	Per Year	Per Quarter
Wastewater	\$ 552.28	\$ 138.07

Proposed Rates - 2018		Quarterly Increase
Per Year	Per Quarter	
\$ 552.28	\$ 138.07	\$ -

**City of DePere Wastewater Utility
Proposed Rate Increase - Paper Mill Summary**

COLLECTION RATES

Current Rates

Volume charge- collection- monthly

Collection \$2.598/ thousand gallons

Up to a maximum of 15% of Collection System Expenses
allocated to the Flow Rate - for 2017: \$136,600

NEW Water Daily Monitoring Charge - monthly

Direct pass-through from NEW Water \$3,400 per month estimate

Proposed Rates - 2018

Volume charge- collection- monthly

Collection \$2.598/ thousand gallons

Up to a maximum of 15% of Collection System Expenses
allocated to the Flow Rate - for 2018: \$138,100

NEW Water Daily Monitoring Charge - monthly

Direct pass-through from NEW Water \$3,100 per month estimate

TREATMENT RATES

City of DePere - Fixed Treatment Administrative Fee

Administrative fee \$1,400 per month

City of DePere - Fixed Treatment Administrative Fee

\$1,900 per month

NEW Water unit charges - pass through

Variable rates

Flow	\$0.72126/ thousand gallons
BOD	\$0.41913/ pound
TSS	\$0.36651/ pound
Phosphorus	\$0.58901/ pound
TKN	\$0.76448/ pound

NEW Water unit charges - pass through

Flow	\$0.69897/ thousand gallons
BOD	\$0.35126/ pound
TSS	\$0.28304/ pound
Phosphorus	\$0.75833/ pound
TKN	\$0.70556/ pound

NEW Water fixed charge - pass through

Fixed rates

Allocated to Paper Mills based upon actual units each month

\$ 534,233

NEW Water fixed charge - pass through

Allocated to Paper Mills (not including Fox River Fiber) based upon actual
units each month

\$ 749,008

SONOCO US MILLS

	Per Year	Per Month
Average units		
Flow (in thousand gallons)	37,674	3,140
BOD (in pounds)	1,461,749	121,812
TSS (in pounds)	398,715	33,226
Phosphorus (in pounds)	405	34
TKN (in pounds)	8,113	676

	Current Rates	
	Per Year	Per Month
Treatment variable charges	\$ 792,409	\$ 66,034
Treatment fixed charges	225,713	18,809
Treatment fixed administrative fee	16,800	1,400
Collection	97,877	8,156
NEW Water daily monitoring charge	18,795	1,566
Total	<u>\$ 1,151,594</u>	<u>\$ 95,966</u>

	Proposed Rates - 2018		Monthly Increase
	Per Year	Per Month	
	\$ 658,671	\$ 54,889	\$ (11,145)
	314,583	26,215	7,406
	22,800	1,900	500
	97,877	8,156	0
	18,600	1,550	(16)
	<u>\$ 1,112,531</u>	<u>\$ 92,711</u>	<u>\$ (3,255)</u>

EXPERA

	Per Year	Per Month
Average units		
Flow (in thousand gallons)	420,844	35,070
BOD (in pounds)	1,755,210	146,268
TSS (in pounds)	359,470	29,956
Phosphorus (in pounds)	627	52
TKN (in pounds)	29,877	2,490

	Current Rates	
	Per Year	Per Month
Treatment variable charges	\$ 1,194,158	\$ 99,513
Treatment fixed charges	311,698	25,975
Treatment fixed administrative fee	16,800	1,400
Collection	136,600	11,383
NEW Water daily monitoring charge	18,795	1,566
Total	<u>\$ 1,678,051</u>	<u>\$ 139,838</u>

	Proposed Rates - 2018		Monthly Increase
	Per Year	Per Month	
	\$ 1,033,992	\$ 86,166	\$ (13,347)
	434,425	36,202	10,227
	22,800	1,900	500
	138,100	11,508	125
	18,600	1,550	(16)
	<u>\$ 1,647,917</u>	<u>\$ 137,326</u>	<u>\$ (2,511)</u>

FOX RIVER FIBER

	Per Year	Per Month
Average units		
Flow (in thousand gallons)	294,438	24,537
BOD (in pounds)	1,242,802	103,567
TSS (in pounds)	738,914	61,576
Phosphorus (in pounds)	19,397	1,616
TKN (in pounds)	207,349	17,279

	Current Rates	
	Per Year	Per Month
Treatment variable charges	\$ 1,090,417	\$ 90,868
Treatment fixed charges	473,027	39,419
Treatment fixed administrative fee	16,800	1,400
Total	<u>\$ 1,580,244</u>	<u>\$ 131,687</u>

	Proposed Rates - 2018		Monthly Increase
	Per Year	Per Month	
	\$ 905,835	\$ 75,486	\$ (15,382)
	576,090	48,008	8,589
	22,800	1,900	500
	<u>\$ 1,504,725</u>	<u>\$ 125,394</u>	<u>\$ (6,293)</u>

City of DePere
Summary of Proposed Wastewater Rates - 2018

Collection Fixed Charges

General Customers	
Meter Size	Quarterly Rate
.75 Inch	\$ 28.00
1 Inch	\$ 70.00
1.5 Inch	\$ 140.00
2 Inch	\$ 224.00
3 Inch	\$ 420.00
4 Inch	\$ 1,260.00

Paper Mills

Daily monitoring charges are a direct pass through from NEW Water
estimated at \$3,100 per month

Collection Volume Charge - All Customers

\$ 2.415 per 1,000 gallons

Note: Paper Mills volume charge is up to a maximum of 15% of Collection System Expenses allocated to the Flow Rate - for 2017: \$138,100

Treatment Fixed Charges

General Customers	
Meter Size	Quarterly Rate
3/4 Inch	\$ 3.30
1 Inch	\$ 8.25
1.5 Inch	\$ 16.50
2 Inch	\$ 26.40
3 Inch	\$ 49.50
4 Inch	\$ 148.50

Paper Mills

Monthly Administrative Fee \$ 1,900

Annual Fixed Charge \$ 749,008

The annual fixed charge will be allocated to the paper mills (not including Fox River Fiber) on a monthly basis based upon actual units each month

Treatment Variable Charges

General Customers

\$ 4.52 per 1,000 gallons

Paper Mills- direct pass through from NEW Water

Flow	\$0.69897/ thousand gallons
BOD	\$0.35126/ pound
TSS	\$0.28304/ pound
Phosphorus	\$0.75833/ pound
TKN	\$0.70556/ pound

City of DePere
Analysis of Collection Volume Charge with Additional Surcharge Amounts

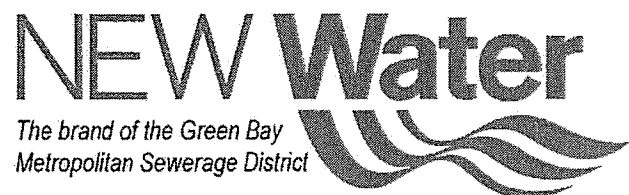
Collection Volume Charge- All Customers

Incremental revenue generated		Volume Charge		% increase in total charges to general customers
\$	-	\$	2.598 per 1,000 gallons	0.00%
\$	50,000.00	\$	2.690 per 1,000 gallons	1.00%
\$	100,000.00	\$	2.782 per 1,000 gallons	2.00%
\$	150,000.00	\$	2.874 per 1,000 gallons	3.00%
\$	200,000.00	\$	2.967 per 1,000 gallons	4.01%
\$	250,000.00	\$	3.059 per 1,000 gallons	5.01%

2018 Adopted Budget

December 6, 2017

Attachment: 2018 Adopted Budget (6499 : Consider 2017-2018 Sewer Rate Study*)



NEW Water
Green Bay Metropolitan Sewerage District
2018 Adopted Budget - December 6, 2017
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5-Year Capital Investment Plan Report

Summary of Revenues and Expenses Legends

NEW Water
Green Bay Metropolitan Sewerage District
2018 Adopted Budget - December 6, 2017
DATES AND EVENTS

Thursday, July 27, 2017	First Discussion of 2018 Budget with Commission
August 2017	2018 Budget Meeting with Customers
Wednesday, August 23, 2017	2018 Budget First Budget Workshop and 2018 Tax Abatement Schedule
September 2017	2018 Budget Meeting with Customers
Wednesday, September 27, 2017	Second Budget Workshop
September & October 2017	Elected Officials Board Meetings
Wednesday, October 25, 2017	2018 Budget Third Budget Workshop as needed
Wednesday, December 6, 2017	2018 Budget Public Hearing and Adoption
	2018 Adopted Budget Distributed to Customers

NEW Water
Green Bay Metropolitan Sewerage District
2018 Adopted Budget - December 6, 2017
Municipal and Mill Rate Comparison

Municipal Rate Comparison

Parameter	2017 COS Rate (FRF Adjusted)	2018 COS Rate (FRF Adjusted)
Volume (1,000 GALS)	\$0.72126	\$0.69897
Biochemical Oxygen Demand (LBS)	\$0.41913	\$0.35126
Suspended Solids (LBS)	\$0.36651	\$0.28304
Phosphorus (LBS)	\$0.58901	\$0.75833
Total Kjeldahl Nitrogen (LBS)	\$0.76448	\$0.70556
Fixed Charge	\$0.78834	\$0.93605
Total Combined Rate (1,000 GALS)	\$3.19780	\$3.06315

Procter & Gamble Rate Comparison

Parameter	2017 COS Rate (FRF Adjusted)	2018 COS Rate (FRF Adjusted)
Volume (1,000 GALS)	\$0.58553	\$0.58847
Biochemical Oxygen Demand (LBS)	\$0.26840	\$0.28878
Suspended Solids (LBS)	\$0.20301	\$0.22148
Phosphorus (LBS)	\$0.43617	\$0.69239
Total Kjeldahl Nitrogen (LBS)	\$0.64142	\$0.64105

Fox River Fiber Rate Comparison - Excluding Fixed Charge

Parameter	2017 COS Rate (FRF Adjusted)	2018 COS Rate (FRF Adjusted)
Volume (1,000 GALS)	\$0.53436	\$0.44504
Biochemical Oxygen Demand (LBS)	\$0.40685	\$0.33742
Suspended Solids (LBS)	\$0.35735	\$0.27266
Phosphorus (LBS)	\$0.56875	\$0.72553
Total Kjeldahl Nitrogen (LBS)	\$0.73482	\$0.67474

Note: The Fixed Charge to be billed by City of De Pere.

Attachment: 2018 Adopted Budget (6499 : Consider 2017-2018 Sewer Rate Study*)

NEW Water
Green Bay Metropolitan Sewerage District
2018 Adopted Budget - December 6, 2017
Summary of Revenues and Expenses

	2016 Budget	2016 Actual	2017 Budget	% of Overall Expenses	Projected 2017 Year-End	2018 Budget	% of Overall Expenses	2018 Budget Favorable/ (Unfavorable) Variance	% Variance
Revenues									
Municipal User Fees	\$32,499,871	\$ 33,927,996	\$ 33,599,315	85.9%	\$ 36,146,814	\$ 34,221,844	85.7%	\$ 622,529	1.9%
Mill User Fees	1,268,082	1,275,812	1,360,778	3.5%	1,404,238	1,441,121	3.6%	80,343	5.9%
Mill Direct Charges	110,809	140,042	233,462	0.6%	166,712	109,756	0.3%	(123,706)	-53.0%
Mill Capital Charges	1,232,508	1,232,508	1,044,650	2.7%	1,044,650	1,037,677	2.6%	(6,973)	-0.7%
General Reserve Interest	4,447	13,921	4,682	0.0%	38,574	2,175	0.0%	(2,507)	-53.5%
Other Revenues	844,152	843,887	769,457	2.0%	961,578	767,024	1.9%	(2,433)	-0.3%
	\$ 35,959,870	\$ 37,434,167	\$ 37,012,344	94.6%	\$ 39,762,566	\$ 37,579,596	94.2%	\$ 567,252	1.5%
DEBT and ICR Reserve Transfers	2,107,863	2,107,863	2,095,257	5.4%	2,095,257	2,334,123	5.8%	238,866	11.4%
Transfer From Rate Stabilization Fund	-	-	-	-	-	-	-	-	0.0%
General Fund Transfers	-	(1,955,128)	-	-	(4,136,268)	-	-	-	0.0%
	\$ 2,107,862	\$ 152,735	\$ 2,095,257	5.36%	\$ (2,041,011)	\$ 2,334,123	5.85%	\$ 238,866	11.4%
Total Revenues	\$ 38,067,732	\$ 37,586,902	\$ 39,107,601	100.0%	\$ 37,721,555	\$ 39,913,719	100.0%	\$ 806,118	2.1%
Expenses									
Salaries & Benefits	\$ 9,739,319	\$ 10,303,254	\$ 10,236,902	26.2%	\$ 9,578,176	\$ 10,401,955	26.1%	\$ (165,053)	-1.6%
Power	2,396,434	2,322,538	2,409,473	6.0%	2,410,034	1,923,964	4.8%	485,509	20.2%
Contracted Services	2,372,322	2,111,795	2,788,143	7.0%	2,281,668	3,588,058	9.0%	(799,915)	-28.7%
Maintenance & Repairs	1,580,896	1,561,665	1,582,415	4.0%	1,528,118	1,942,867	4.9%	(360,452)	-22.8%
Chemicals	564,123	557,429	548,890	1.4%	539,810	945,239	2.4%	(396,349)	-72.2%
Natural Gas & Fuel Oil	1,079,183	908,605	961,831	2.4%	937,727	487,404	1.2%	474,527	49.3%
Solid Waste Disposal	256,315	173,739	211,325	0.5%	187,875	180,686	0.5%	30,639	14.5%
Interceptor System (1)	514,560	428,684	652,855	1.6%	1,435,429	690,490	1.7%	(37,635)	-5.8%
Office & Administrative	476,555	451,045	529,641	1.3%	515,091	631,146	1.6%	(101,505)	-19.2%
Insurance	202,995	232,200	237,593	0.6%	239,037	250,375	0.6%	(12,782)	-5.4%
Supplies	130,626	189,145	149,838	0.4%	185,199	220,187	0.6%	(70,349)	-47.0%
Employee Training & Development	123,078	114,624	152,673	0.4%	144,211	175,094	0.4%	(22,421)	-14.7%
Travel and Meetings	71,343	61,578	80,868	0.2%	63,870	75,815	0.2%	5,053	6.2%
DNR Environmental Fees	145,000	143,118	146,000	0.4%	117,501	136,000	0.3%	10,000	6.8%
Total O & M Expenses	\$ 19,652,749	\$ 19,559,418	\$ 20,686,547	52.4%	\$ 20,163,746	\$ 21,649,280	54.2%	\$ (960,733)	-4.6%
Debt Service (2)	\$ 10,993,983	\$ 10,993,983	\$ 16,457,706	42.1%	\$ 16,457,706	\$ 15,253,439	38.2%	\$ 1,204,267	7.3%
Annual Capital	1,971,000	1,583,501	1,961,348	5.0%	1,100,103	3,011,000	7.5%	(1,049,652)	-53.5%
R2E2 Construction (Rate Stabilization)	5,450,000	5,450,000	-	0.0%	-	-	0.0%	-	0.0%
Total Debt Service, Annual Capital & Rate Stabilization	\$ 18,414,983	\$ 18,027,484	\$ 18,419,054	47.1%	\$ 17,557,809	\$ 18,264,439	45.8%	\$ 154,615	0.8%
Total Expenses	\$ 38,067,732	\$ 37,586,902	\$ 39,107,601	100.0%	\$ 37,721,555	\$ 39,913,719	100.0%	\$ (806,118)	-2.1%

Notes:

- (1) Interceptor System includes all expenses related to Interceptors, Meter and Lift Stations, including chemicals, power, phones, pretreatment program, and water.
(2) Debt Service for 2018 reflects collection and payments for 2019 Debt Payments.

NEW Water
Green Bay Metropolitan Sewerage District
2018 Adopted Budget - December 6, 2017
Flow and Load Projections - with FRF Adjustment

	1,000 gal	VOLUME	BOD	TSS	PHOS	TKN	Fixed Charge	65.0%	
	Gallons	Amount	Pounds	Amount	Pounds	Amount	Pounds	Amount	Total Amount
City of Green Bay	4,900,000	\$ 3,425,789	7,908,168	\$ 2,778,103	7,045,361	\$ 1,994,192	187,671	\$ 142,327	\$ 14,454,434
City of De Pere	1,325,000	926,361	3,685,004	1,294,525	2,277,122	644,540	26,966	20,451	4,488,162
Fox River Fiber	310,000	137,962	1,138,072	384,011	700,072	190,879	20,232	14,679	1,441,655
Village of Allouez	738,000	515,966	706,269	248,109	992,515	280,932	21,085	15,991	1,784,148
Village of Ashwaubenon	1,432,500	1,001,519	2,081,630	731,267	2,480,799	702,191	55,612	42,175	4,135,024
Village of Bellevue	635,000	443,954	812,282	285,351	840,005	237,764	22,672	17,194	1,719,315
Village of Hobart	182,000	127,244	272,027	95,562	342,932	97,067	7,643	5,796	579,416
Village of Howard	870,000	608,252	773,692	271,794	1,753,448	496,314	24,567	18,631	2,500,257
Village of Luxemburg	170,000	118,854	47,780	16,785	45,104	12,767	1,988	1,508	234,408
Village of Pulaski	195,000	136,332	40,940	14,382	50,688	14,347	8,772	6,653	342,869
Village of Suamico	192,000	134,235	392,833	138,000	440,253	124,614	10,453	7,927	708,374
Town of Ledgeview Sanitary District #2	167,000	116,756	224,608	78,904	256,715	72,663	7,537	5,716	500,436
Town of Lawrence - Utility District	102,000	71,312	197,548	69,398	314,205	88,936	5,743	4,355	420,176
Pittsfield Sanitary District	12,600	8,809	15,690	5,512	24,831	7,028	467	354	37,616
Town of Scott Sanitary District #1	57,500	40,201	71,260	25,033	112,776	31,921	2,119	1,607	171,078
Dyckesville Sanitary District	29,000	20,275	35,412	12,440	56,043	15,863	1,053	799	85,402
New Franken Sanitary District	14,784	10,336	18,414	6,469	29,142	8,249	548	416	44,143
Royal Scott Sanitary District	29,000	20,275	35,182	12,359	61,570	17,427	1,136	862	88,780
Bayshore Sanitary District	22,250	15,556	29,419	10,335	46,559	13,179	875	664	69,278
Hauled Waste	31,090	48,646	311,500	158,174	425,000	161,737	6,965	6,233	416,872
Total Municipal	11,414,724	\$ 7,928,635	18,797,730	\$ 6,636,513	18,295,140	\$ 5,212,610	414,104	\$ 314,335	\$ 34,221,844
Procter & Gamble	1,550,000	\$ 912,128	500,000	\$ 144,389	1,600,000	\$ 354,373	2,000	\$ 1,385	\$ 1,441,121
Fox River Fiber-Direct Bill	0	-	0	-	0	-	0	-	-
Total Mill	1,550,000	\$ 912,128	500,000	\$ 144,389	1,600,000	\$ 354,373	2,000	\$ 1,385	\$ 1,441,121
Grand Total	12,964,724		19,297,730		19,895,140		416,104	3,243,003	
Units									
Costs		\$ 8,840,763		\$ 6,780,902		\$ 5,566,983		\$ 315,720	\$ 35,662,965

NEW Water
Green Bay Metropolitan Sewerage District
2018 Adopted Budget - December 6, 2017
User Fees by Source

	2018 Budget	2017 Budget	2016 Actual	2015 Actual	2014 Actual
City of Green Bay	\$14,454,434	\$13,663,407	\$13,827,312	\$12,487,909	\$11,665,027
City of De Pere	4,488,162	4,962,153	5,037,348	4,977,851	5,936,369
Fox River Fiber *	1,441,655	1,585,824	1,084,874	1,391,549	N/A
Village of Allouez	1,784,148	1,856,262	1,749,897	1,707,690	1,680,020
Village of Ashwaubenon	4,135,024	4,059,492	3,977,249	3,739,334	3,550,124
Village of Bellevue	1,719,315	1,699,626	1,593,290	1,637,450	1,508,969
Village of Hobart	579,416	470,722	459,957	383,540	317,342
Village of Howard	2,500,257	2,366,053	2,408,423	1,992,062	1,953,137
Village of Luxemburg	234,408	213,126	174,364	159,572	202,835
Village of Pulaski	342,869	328,416	317,468	281,687	299,117
Village of Suamico	708,374	710,252	669,926	668,187	641,215
Town of Ledgeview Sanitary District #2	500,436	480,081	469,136	565,832	522,144
Town of Lawrence - Utility District	420,176	359,804	374,940	311,614	295,328
Pittsfield Sanitary District	37,616	37,351	38,741	39,288	35,568
Town of Scott Sanitary District #1	171,078	170,733	178,443	181,977	198,283
Dyckesville Sanitary District	85,402	85,251	87,100	67,928	69,362
New Franken Sanitary District	44,143	43,353	45,153	46,422	43,026
Royal Scott Sanitary District	88,780	81,494	84,184	75,002	89,538
Bayshore Sanitary District	69,278	70,618	70,015	54,530	58,437
Hauled Waste **	416,872	355,296	1,280,178	2,485,872	1,970,099
Total Municipal	\$34,221,844	\$33,599,315	\$33,927,998	\$33,255,295	\$31,035,940
Procter & Gamble	1,441,121	1,360,778	1,275,813	1,149,433	1,249,018
Total Mill	\$1,441,121	\$1,360,778	\$1,275,813	\$1,149,433	\$1,249,018
Total User Fees	\$35,662,965	\$34,960,093	\$35,203,811	\$34,404,729	\$32,284,958

* Fox River Fiber Units and Cost were included in 2014 Budget and prior with City of De Pere.

** Hauled Waste for 2014, 2015, & 2016 was significantly higher due to special projects with the three cheese facilities.

Attachment: 2018 Adopted Budget (6499 : Consider 2017-2018 Sewer Rate Study*)

NEW Water
Green Bay Metropolitan Sewerage District
2018 Adopted Budget - December 6, 2017
Municipal Cost of Service

	<u>Total</u>	<u>VOLUME</u> 1,000 gal	<u>BOD</u> pounds	<u>TSS</u> pounds	<u>PHOS</u> pounds	<u>TKN</u> pounds	<u>Fixed Charge</u> N/A
Unit Value Units (2)		11,383,634	18,486,230	17,870,140	407,139	3,149,003	11,383,634
Cost of Service Municipal							
Operating Cost	\$ 19,053,747	\$ 7,458,069	\$ 5,337,807	\$ 3,957,531	\$ 281,874	\$ 2,018,466	\$ -
Pretreatment Cost Allocation	241,163	0	118,531	79,088	5,196	38,347	0
Capital Cost (2)	6,122,406	408,019	343,098	220,425	6,421	135,454	5,008,989
Solids Project	8,388,408	14,115	679,165	793,998	14,622	23,611	6,862,897
Total Cost	\$ 33,805,724	\$ 7,880,203	\$ 6,478,601	\$ 5,051,042	\$ 308,114	\$ 2,215,879	\$ 11,871,886
Unit Operating Cost		\$0.65516	\$0.29516	\$0.22589	\$0.70509	\$0.65316	\$0.00000
Unit Capital Cost		\$0.03708	\$0.05530	\$0.05677	\$0.05169	\$0.05051	\$0.93605
Unit Combined Cost (1)	\$3.05349	\$0.69224	\$0.35046	\$0.28265	\$0.75678	\$0.70368	\$0.93605
Fox River Fiber (FRF) Adjustment (3)	\$0.00966	\$0.00673	\$0.00080	\$0.00039	\$0.00155	\$0.00188	\$0.00000
Adjusted Unit Combined Cost	\$3.06315	\$0.69897	\$0.35126	\$0.28304	\$0.75833	\$0.70556	\$0.93605

(1) Combined rate based on a standard parts/million.

(2) Excludes Hauled Waste flows and loads.

(3) FRF Adjustment removes interceptor costs.

GBMSD MUNICIPAL BUDGET RATE HISTORY	UNIT COMBINED COST (1)	VOLUME	BOD	SS	PHOS	TKN	Fixed Charge
2017	\$3.19780	\$0.72126	\$0.41913	\$0.36651	\$0.58901	\$0.76448	\$0.78834
2016	\$3.07421	\$0.79357	\$0.43068	\$0.41292	\$0.60597	\$0.64043	\$0.54580
2015	\$2.89731	\$0.80448	\$0.39331	\$0.34822	\$0.56768	\$0.65358	\$0.52659
2014	\$2.63618	\$0.76333	\$0.33466	\$0.29867	\$0.62124	\$0.68741	\$0.46763

Attachment: 2018 Adopted Budget (6499 : Consider 2017-2018 Sewer Rate Study*)

NEW Water
Green Bay Metropolitan Sewerage District
2018 Adopted Budget - December 6, 2017
Hauled Waste Cost of Service

	<u>Total</u>	<u>VOLUME</u>	<u>BOD</u>	<u>TSS</u>	<u>PHOS</u>	<u>TKN</u>	<u>Fixed Charge</u>
Unit Value		1,000 gal	pounds	pounds	pounds	pounds	N/A
Units		31,090	311,500	425,000	6,965	49,000	0
Cost of Service							
Operating Cost	\$240,687	\$20,369	\$89,954	\$94,130	\$4,823	\$31,411	\$0
Pretreatment Cost Allocation	0	0	0	0	0	0	0
Capital Cost	74,018	27,124	22,809	14,654	427	9,005	0
Solids Project	101,414	938	45,150	52,784	972	1,570	0
Direct Charges	0	0	0	0	0	0	0
FRF Adjustment	753	215	262	169	11	97	0
Total Cost	\$416,872	\$48,646	\$158,174	\$161,737	\$6,233	\$42,083	\$0

Attachment: 2018 Adopted Budget (6499 : Consider 2017-2018 Sewer Rate Study*)

NEW Water
Green Bay Metropolitan Sewerage District
2018 Adopted Budget - December 6, 2017
Procter & Gamble Cost of Service

	<u>Total</u>	<u>VOLUME</u>	<u>BOD</u>	<u>TSS</u>	<u>PHOS</u>	<u>TKN</u>	<u>Capital Charge</u>
Unit Value		1,000 gal	pounds	pounds	pounds	pounds	N/A
Units		1,550,000	500,000	1,600,000	2,000	45,000	1,550,000
Cost of Service							
Operating Cost	\$1,441,121	\$912,128	\$144,389	\$354,373	\$1,385	\$28,847	\$0
Pretreatment Cost Allocation	0	0	0	0	0	0	0
Capital Cost	379,586	0	0	0	0	0	379,586
Solids Project	658,090	0	0	0	0	0	658,090
Direct Charges	68,238	0	0	0	0	0	0
Total Cost	\$2,547,036	\$912,128	\$144,389	\$354,373	\$1,385	\$28,847	\$1,037,677
Unit Cost		\$0.58847	\$0.28878	\$0.22148	\$0.69239	\$0.64105	\$0.00000
Unit Capital Cost		\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.669
Unit Combined Cost		\$0.58847	\$0.28878	\$0.22148	\$0.69239	\$0.64105	\$0.66947

BUDGET RATE HISTORY	VOLUME	BOD	TSS	PHOS	TKN
2017	\$0.58553	\$0.26840	\$0.20301	\$0.43617	\$0.64104
2016	\$0.05342	\$0.25789	\$0.18371	\$0.38906	\$0.49819
2015	\$0.52549	\$0.26270	\$0.19420	\$0.40750	\$0.50956
2014	\$0.51836	\$0.24896	\$0.19362	\$0.50636	\$0.56970

Attachment: 2018 Adopted Budget (6499 : Consider 2017-2018 Sewer Rate Study*)

NEW Water
Green Bay Metropolitan Sewerage District
2018 Adopted Budget - December 6, 2017
Fox River Fiber Cost of Service

	<u>Total</u>	<u>VOLUME</u>	<u>BOD</u>	<u>TSS</u>	<u>PHOS</u>	<u>TKN</u>	<u>Fixed Charge</u>
Unit Value		1,000 gal	pounds	pounds	pounds	pounds	N/A
Units		310,000	1,138,072	700,072	20,232	204,572	-
Total Municipal Units		11,383,634	18,486,230	17,870,140	407,139	3,149,003	-
Cost of Service							
Operating Cost	\$ 831,885	\$ 203,099	\$ 328,613	\$ 155,038	\$ 14,007	\$ 131,128	\$ -
Pretreatment Cost Allocation	13,145	-	7,297	3,098	258	2,491	-
Capital Cost	701,640	11,496	62,934	39,741	1,046	10,334	576,090
Solids Project	-	-	-	-	-	-	-
Subtotal Cost of Service	\$ 1,546,669	\$ 214,594	\$ 398,844	\$ 197,877	\$ 15,311	\$ 143,952	\$ 576,090
Direct Charges	41,526	-	-	-	-	-	-
Less FRF Adjustment	(105,014)	(76,633)	(14,832)	(6,998)	(632)	(5,919)	-
Total Cost	\$ 1,483,182	\$ 137,962	\$ 384,011	\$ 190,879	\$ 14,679	\$ 138,034	\$ 576,090
Unit Cost		\$0.69224	\$0.35046	\$0.28265	\$0.75678	\$0.70368	\$0.04853
FRF Adjustment		(0.2472)	(0.0130)	(0.0100)	(0.0312)	(0.0289)	0.0000
Unit Cost (with FRF Adjustment)		\$0.44504	\$0.33742	\$0.27266	\$0.72553	\$0.67474	\$0.04853

BUDGET RATE HISTORY	VOLUME	BOD	TSS	PHOS	TKN	Fixed Charge
2017	\$0.53436	\$0.40685	\$0.35735	\$0.56875	\$0.73482	\$0.05707
2016	\$0.63165	\$0.41777	\$0.40379	\$0.58647	\$0.61550	\$0.60376
2015	\$0.59821	\$0.38082	\$0.33967	\$0.55008	\$0.63145	\$0.52659

Attachment: 2018 Adopted Budget (6499 : Consider 2017-2018 Sewer Rate Study*)

NEW Water
GREEN BAY METROPOLITAN SEWERAGE DISTRICT
2018 Adopted Budget - December 6, 2017
Allocation of Capital and Debt Service Costs (1)

	FY2018	Allocations	
		Municipal	Procter & Gamble (1)
Debt Service			
<u>Debt Service - Municipal Only</u>			
Clean Water Fund Loans			
4198-12 West Fox River Interceptor	\$142,813	\$142,813	\$0
4198-16 East River Lift Station	132,414	132,414	0
4198-18 Scott Bayshore Interceptor	45,753	45,753	0
4198-21 East Tower Drive Interceptor	182,867	182,867	0
4345-06 De Pere Ashwaubenon Creek Interceptor	217,321	217,321	0
4198-29 Phase Two Interceptor Rehabilitation	216,259	216,259	0
4198-45 De Pere Facility East Service Area Interceptor Rehabilitation	186,870	186,870	0
East River Interceptor Rehabilitation (2018 New)	259,014	259,014	0
Other General Obligation Debt			
2008 Sewerage System Improvement Bond	\$521,102	\$521,102	0
Total Debt Service - Municipal Only (2)	\$1,904,413	\$1,904,413	\$0
Debt Service - Common to All			
<u>Clean Water Fund Loans</u>			
4198-02 Bar Screen Replacement	\$100,709	\$94,167	\$6,542
4198-09 Service Water System	64,708	60,504	4,203
4198-24 Electrical Generation Facility	208,322	194,789	13,533
4198-25 RAS/WAS Improvements	663,173	620,093	43,080
4198-27 Solids Process Improvement	352,602	329,697	22,905
4198- 32 GBF: Administration & Maintenance Building HVAC Replacement *	211,428	197,693	13,734
4198-35 Combined Treatment Facilities Projects	300,777	281,239	19,539
4198-37 Consolidation/Conveyance Project	881,330	824,079	57,251
4198-44 R2E2 Solids Management *	603,519	560,102	43,416
4198-48 DPF: UV Disinfection System Upgrade *	98,662	92,253	6,409
4345-04 De Pere Facility	257,741	240,998	16,743
4198-99 Green Bay Facility Solids Management Plan Construction (R2E2)	7,676,144	7,123,931	552,213
4198-52 GBF: Disinfection System Upgrade *	0	0	0
DPF: Primary Substation & Emergency Generator (2017 New)	337,431	315,512	21,920
GBF & DPF: Clarifier Rehabilitation and Odor Control (2018 New)	102,400	95,748	6,652
DPF: Service Water System Rehabilitation/Replacement (2018 New)	157,266	147,050	10,216
Other General Obligation Debt			
2008 Sewerage System Improvement Bond	304,079	284,326	19,753
Promissory Note to City of De Pere	160,485	150,060	10,425
Green Bay Facility Solids Management Plan - Design	868,250	805,789	62,461
Total Debt Service - Common to All (2)	\$13,349,027	\$12,418,031	\$930,996
<u>Debt Service Offsets</u>			
Georgia-Pacific - Capital Payment	(\$429,710)	(\$429,710)	\$0
4198-29 City of De Pere Rehabilitation Interceptor Ashwaubenon Creek Payment	(53,472)	(53,472)	0
Less Debt Payments Funded from ICR Reserve **	(1,210,840)	(1,210,840)	0
City of Green Bay Interceptors Payment	(292,430)	(292,430)	0
Town of Lawrence Interceptors Payment ((9th Street Seg 5 Ext., Ashw. Creek 2,3,4,6,7 and Ashw. Interceptor 2,3 & 4)	(197,077)	(197,077)	0
New Franken Sanitary District Interceptors Payment	(21,621)	(21,621)	0
Royal Scott Sanitary District #1 Interceptor Payment	(8,902)	(8,902)	0
4198-45 De Pere Eastside Interceptor Rehabilitation	(120,071)	(120,071)	0
Total Debt Service Offsets	(\$2,334,123)	(\$2,334,123)	\$0
TOTAL DEBT SERVICE	\$12,919,316	\$11,988,321	\$930,996
ANNUAL CAPITAL OUTLAY			
2018 Requests - Allocated to All	\$1,936,000	\$1,816,053	\$119,947
2018 Requests - Allocated to Municipal Only	1,075,000	1,075,000	0
TOTAL ANNUAL CAPITAL OUTLAY	\$3,011,000	\$2,891,053	\$119,947
TOTAL ANNUAL CAPITAL AND DEBT SERVICE	\$15,930,316	\$14,879,374	\$1,050,943
REVENUES AND TRANSFERS			
Interest Income	(\$2,175)	(\$2,175)	\$0
Hauled Waste Truck Fees	(\$40,517)	(\$37,885)	(\$2,632)
Miscellaneous Revenue - Capital ***	(\$163,701)	(\$153,067)	(\$10,634)
Total Non-Rate Revenues (Capital-Related)	(\$206,393)	(\$193,127)	(\$13,266)
Net Annual Capital and Debt Service	\$15,723,923	\$14,686,247	\$1,037,677

(1) Based on Revised Cost of Service Allocations from CDM Smith, Inc. June 2016 (Table 5). Debt Collection is for 2019 debt service payments.

(2) Total Debt Collected in 2018 Budget for 2019 Debt payments. Metropolitan Sewerage Districts are permitted to abate taxation by having sufficient funds available in its designated debt service fund to pay those debt obligations for the following year.

Metropolitan Sewerage Districts Subchapter I 200.13(2),(5) permits Sewerage Districts to levy a tax upon property for its performance of duties.

* Note: 2015, 2016 and 2017 Payments for Debt Service over/under collected for these projects due to timing on submitting loan.

** Note: Less Debt Payments funded from ICR Reserve.

*** Note: Miscellaneous Revenues are from Sampling & Lab Analysis from De Pere, Village of Ashwaubenon, Village of Hobart, Village of Suamico, Yacht Club, West Shore Pipeline, and ICR Leases.

Attachment: 2018 Adopted Budget (6499 : Consider 2017-2018 Sewer Rate Study*)

NEW Water
Green Bay Metropolitan Sewerage District
2018 Adopted Budget - December 6, 2017
Summary of Debt Service Schedule

Issue	Description	Original Amount	2018 Budget for 2019	Loan Date	Last Payment
			Debt Payments		
4198-16	East River Lift Station	1,924,428	132,414	10/25/2000	May 2020
4198-12	West Fox River Interceptor	2,159,850	142,813	10/25/2000	May 2020
4345-06	De Pere Ashwaubenon Creek Interceptor	3,222,103	217,321	12/31/2007	May 2020
4198-09	Service Water System	946,212	64,708	7/11/2001	May 2021
4198-02	Bar Screens Replacement	1,490,715	100,709	7/11/2001	May 2021
4198-18	Scott Bayshore Interceptor	695,592	45,753	2/27/2002	May 2021
4345-04	De Pere Facility	3,881,879	257,741	12/31/2007	May 2021
4198-27	Solids Process Improvement	5,347,693	352,602	12/8/2004	May 2024
4198-21	East Tower Drive Interceptor	2,761,526	182,867	4/13/2005	May 2024
Dec. 2007	Promissory Note to City of De Pere	2,000,000	160,485	12/28/2007	Dec 2027
Sept. 2008	2008 General Obligation - Sewerage System Improvement Bond	10,000,000	825,181	9/15/2008	May 2028
4198-25	RAS/WAS Improvements	10,460,782	663,173	3/11/2009	May 2028
4198-35	Combined Treatment Facilities Projects	4,211,341	300,777	12/9/2009	May 2029
4198-37	Consolidation/Conveyance Project	12,821,922	881,330	12/9/2009	May 2029
4198-29	Phase Two Interceptor Rehabilitation	3,421,382	216,259	11/10/2010	May 2030
4198-24	Electrical Generator Project	3,246,148	208,322	12/22/2010	May 2030
4198-32	GBF: Administration & Maintenance Building HVAC Replacement *	3,133,312	211,428	4/10/2013	May 2032
4198-45	De Pere Facility East Service Area Interceptor Rehabilitation	3,146,593	186,870	12/12/2012	May 2032
4198-48	DPF: Disinfection System Upgrade *	4,272,020	98,662	1/8/2014	May 2033
4198-44	Green Bay Facility Solids Management Plan Construction (R2E2) *	15,209,242	603,519	8/13/2014	May 2034
4198-52	GBF: Disinfection System Upgrade *	1,850,000	-	12/23/2015	May 2035
4198-99	Green Bay Facility Solids Management Plan Construction (R2E2)	122,936,166	7,676,144	10/14/2015	May 2035
July 2013	General Obligation Bond Green Bay Facility Solids Management Plan - Design (R2E2)	20,000,000	868,250	8/20/2013	May 2038
Total Existing Debt		\$242,766,677	\$14,397,327		
(New)	DPF: Primary Substation & Emergency Generator (2017 New) *	3,480,000	337,431	3/1/2018	May 2038
(New)	GBF & DPF: Clarifier Rehabilitation and Odor Control (2018 New)	12,040,000	102,400	6/30/2019	May 2039
(New)	DPF: Service Water System Rehabilitation/Replacement (2018 New)	2,320,000	157,266	6/30/2019	May 2039
(New)	East River Interceptor Rehabilitation (2018 New)	3,821,000	259,014	6/30/2019	May 2039
Total New Debt		\$21,661,000	\$856,112		
Grand Total with New Debt		\$264,427,677	\$15,253,439		

Note: * Over collected debt payment from prior years due to timing of project expenditure projection.

Attachment: 2018 Adopted Budget (6499 : Consider 2017-2018 Sewer Rate Study*)

NEW Water
Green Bay Metropolitan Sewerage District
2018 Adopted Budget - December 6, 2017
Annual Capital

Item Description	Common to All - Municipal Only Amount	
Business Services		
<u>Information Technology</u>		
GBF: HR/Payroll Software System	Common to All	\$ 50,000
GBF & DPF: Time and Attendance System	Common to All	40,000
GBF: Financial Software Replacement/Upgrade	Common to All	250,000
GBF: Campus Paging System	Common to All	125,000
Total Business Services		\$ 465,000
Operations		
<u>Maintenance</u>		
DPF: Replace roof - Service Building	Common to All	\$ 113,000
DPF: Replace roof - Blower Building No. 2	Common to All	158,000
GBF: Tunnel Unit Heater Replacement Phase 1	Common to All	50,000
DPF: Process Air Blowers - HST Upgrades Phase 2 (HST #4, 6)	Common to All	100,000
Total Operations		\$ 421,000
Technical Services		
<u>Engineering</u>		
DPF: Demolish Solids Building & MS11A	Common to All	\$ 1,000,000
Annual Manhole Rehabilitation	Municipal Only	50,000
East River Interceptor Abandoned Segments	Municipal Only	715,000
Total Engineering		\$ 1,765,000
<u>Field Services</u>		
Lift Station alarm notification system	Municipal Only	\$ 250,000
ERLS - Ozone unit replacement	Municipal Only	60,000
Total Field Services		\$ 310,000
Total Technical Services		\$ 2,075,000
Environmental Programs		
<u>Laboratory</u>		
Ion Chromatography	Common to All	\$ 50,000
Total Laboratory		\$ 50,000
Total Environmental Programs		\$ 50,000
Total Annual Capital Items		\$ 3,011,000

Attachment: 2018 Adopted Budget (6499 : Consider 2017-2018 Sewer Rate Study*)

NEW Water
Green Bay Metropolitan Sewerage District
2018 Adopted Budget - December 6, 2017
Allocation of Operation and Maintenance Costs

Expenses are first allocated to cost components (Flow, BOD, TSS, PHOS, TKN) and then allocated to Municipal and Mill customers based on projected annual wastewater flows and loadings.

ITEM	Total	Common to All					Municipal Only		Mill Only		
		Flow	BOD	TSS	PHOS	TKN	Flow	Industry	Flow	Direct	
Salaries & Benefits											
Laboratory & Research & Environmental Services											
Operational Testing	\$ 575,847	\$ 80,619	\$ 69,102	\$ 51,826	\$ 34,551	\$ 40,309	\$ 120,928	\$ 138,203	\$ -	\$ 40,309	
Water Quality Testing	773,771	773,771	0	0	0	0	0	0	0	0	
Total Laboratory Services	\$ 1,349,618	\$ 854,389	\$ 69,102	\$ 51,826	\$ 34,551	\$ 40,309	\$ 120,928	\$ 138,203	\$ -	\$ 40,309	
Treatment											
Pump Station	\$ 115,918	\$ 115,918	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Primary Treatment	155,749	155,749	0	0	0	0	0	0	0	0	
Grit Removal	20,284	0	0	20,284	0	0	0	0	0	0	
Aeration	223,435	0	111,718	0	0	111,718	0	0	0	0	
Final & Chlorine Contact Basins	199,157	199,157	0	0	0	0	0	0	0	0	
Filtration	29,677	29,677	0	0	0	0	0	0	0	0	
Primary Thickeners	77,372	1,934	10,190	62,927	1,934	387	0	0	0	0	
Waste Activated Sludge Thickeners	165,798	0	98,086	64,396	0	3,316	0	0	0	0	
Dewatering - Belt Presses/Incineration	431,074	4,698	168,606	247,270	4,698	5,803	0	0	0	0	
Primary Sludge	187,904	4,698	24,747	152,822	4,698	940	0	0	0	0	
Secondary Sludge	243,170	0	143,859	94,447	0	4,863	0	0	0	0	
Incineration	516,485	5,878	197,416	300,510	5,878	6,803	0	0	0	0	
Primary Sludge	235,131	5,878	30,967	191,232	5,878	1,176	0	0	0	0	
Secondary Sludge	281,354	0	166,449	109,278	0	5,627	0	0	0	0	
Digestion	239,151	2,722	91,410	139,147	2,722	3,150	0	0	0	0	
Struvite Harvesting	157,759	898	30,150	45,895	79,777	1,039	0	0	0	0	
Power Generation	200,967	2,287	76,816	116,930	2,287	2,647	0	0	0	0	
Solids, General	226,450	2,462	88,688	129,787	2,462	3,051	0	0	0	0	
Total Treatment	\$ 2,759,278	\$ 521,381	\$ 873,080	\$ 1,127,146	\$ 99,759	\$ 137,913	\$ -	\$ -	\$ -	\$ -	
Maintenance/Engineering											
Maintenance	\$ 2,446,724	\$ 767,752	\$ 704,240	\$ 448,128	\$ 16,372	\$ 337,004	\$ 127,230	\$ -	\$ 45,998	\$ -	
Engineering	811,048	254,497	233,444	148,547	5,427	111,711	42,174	0	15,248	0	
Total All Above	\$ 7,366,668	\$ 2,398,019	\$ 1,879,866	\$ 1,775,647	\$ 166,109	\$ 626,937	\$ 290,332	\$ 138,203	\$ 61,246	\$ 40,309	
Business Services & Information Systems	\$ 1,974,313	\$ 654,972	\$ 513,448	\$ 484,983	\$ 42,638	\$ 171,235	\$ 79,298	\$ -	\$ 11,804	\$ 15,934	
Total Salaries & Benefit Costs	\$ 9,340,981	\$ 3,052,991	\$ 2,393,314	\$ 2,280,630	\$ 198,747	\$ 798,172	\$ 369,631	\$ 138,203	\$ 73,050	\$ 56,243	
Power											
Metro Pump	\$ 336,198	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 336,198	\$ -	\$ -	\$ -	
Mill Pump	21,770	0	0	0	0	0	0	0	21,770	0	
Secondary Effluent Pump	22,570	22,570	0	0	0	0	0	0	0	0	
Process Air Compressors	829,954	0	539,470	0	0	290,484	0	0	0	0	
Solids Building	387,458	3,875	157,943	216,341	3,875	5,424	0	0	0	0	
Primary Sludge (40)	154,983	3,875	20,411	126,048	3,875	775	0	0	0	0	
Secondary Sludge (60)	232,475	0	137,532	90,293	0	4,649	0	0	0	0	
All Other Plant	326,014	102,299	93,837	59,711	2,182	44,904	16,953	0	6,129	0	
Total Power	\$ 1,923,964	\$ 128,744	\$ 791,250	\$ 276,052	\$ 6,056	\$ 340,812	\$ 353,151	\$ -	\$ 27,899	\$ -	
Fuel											
Fuel - Diesel for Generators	\$ 33,000	\$ 33,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Building	156,954	49,250	45,176	28,747	1,050	21,618	8,162	0	2,951	0	
Incineration & Process	297,450	2,975	121,253	166,084	2,975	4,164	0	0	0	0	
Primary Sludge (40)	118,980	2,975	15,670	98,766	2,975	595	0	0	0	0	
Secondary Sludge (60)	178,470	0	105,583	69,318	0	3,568	0	0	0	0	
Total Fuel	\$ 467,404	\$ 85,225	\$ 166,429	\$ 194,831	\$ 4,025	\$ 25,783	\$ 8,162	\$ -	\$ 2,951	\$ -	

NEW Water
Green Bay Metropolitan Sewerage District
2018 Adopted Budget - December 6, 2017
Allocation of Operation and Maintenance Costs

Expenses are first allocated to cost components (Flow, BOD, TSS, PHOS, TKN) and then allocated to Municipal and Mill customers based on projected annual wastewater flows and loadings.

ITEM	Total	Common to All					Municipal Only		Mill Only	
		Flow	BOD	TSS	PHOS	TKN	Flow	Industry	Flow	Direct
Chemicals										
Sodium Hypochlorite	\$ 92,630	\$ 92,630	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Gravity Belt Polymer	69,954	0	41,385	27,170	0	1,399	0	0	0	0
Gravity Thickener Polymer	0	0	0	0	0	0	0	0	0	0
Belt Press Polymer	323,774	3,238	131,983	180,782	3,238	4,533	0	0	0	0
Primary Sludge (40)	129,510	3,238	17,056	105,330	3,238	648	0	0	0	0
Secondary Sludge (60)	194,264	0	114,927	75,452	0	3,885	0	0	0	0
Lime and Clay	15,662	157	6,384	8,745	157	219	0	0	0	0
Primary Sludge (40)	6,265	157	825	5,095	157	31	0	0	0	0
Secondary Sludge (60)	9,397	0	5,559	3,650	0	188	0	0	0	0
Sodium Bisulfite	54,200	54,200	0	0	0	0	0	0	0	0
Ferric Chloride	26,630	13,315	0	0	13,315	0	0	0	0	0
Odor Control	10,000	2,945	2,924	2,029	125	1,314	487	0	176	0
Magnesium Chloride	94,304	537	18,023	27,435	47,689	621	0	0	0	0
Sodium Hydroxide – Air Pollution	31,959	364	12,216	18,595	364	421	0	0	0	0
Sodium Hydroxide – Nutrient Removal	47,250	269	9,030	13,746	23,894	311	0	0	0	0
Activated Carbon	0	0	0	0	0	0	0	0	0	0
Aqua Ammonia	93,044	1,059	35,564	54,136	1,059	1,226	0	0	0	0
Other Chemicals	85,832	85,832	0	0	0	0	0	0	0	0
Total Chemicals	\$ 945,239	\$ 254,544	\$ 257,510	\$ 332,638	\$ 89,840	\$ 10,044	\$ 487	\$ -	\$ 176	\$ -
Maintenance & Repairs										
Maintenance & Repairs	\$ 1,907,428	\$ 598,528	\$ 549,014	\$ 349,354	\$ 12,764	\$ 262,723	\$ 99,186	\$ -	\$ 35,860	\$ -
All Other Expenses										
Solid Waste	\$ 180,686	\$ 2,119	\$ 67,904	\$ 106,201	\$ 2,119	\$ 2,342	\$ -	\$ -	\$ -	\$ -
Primary Sludge (40)	84,778	2,119	11,165	68,950	2,119	424	0	0	0	0
Secondary Sludge (60)	95,908	0	56,739	37,251	0	1,918	0	0	0	0
DNR Environmental Fees	136,000	993	45,765	48,304	30,710	10,209	0	0	0	0
Other Miscellaneous	4,956,614	1,555,325	1,426,661	907,825	33,167	682,708	257,744	0	93,184	0
Biogas Treatment	19,500	222	7,463	11,346	222	257	0	0	0	0
Total All Other	\$ 5,292,800	\$ 1,558,659	\$ 1,547,803	\$ 1,073,676	\$ 86,218	\$ 695,516	\$ 257,744	\$ -	\$ 93,184	\$ -
Total Treatment Plant O & M	\$ 19,897,816	\$ 5,678,690	\$ 5,705,320	\$ 4,487,180	\$ 377,649	\$ 2,133,050	\$ 1,088,360	\$ 138,203	\$ 233,120	\$ 56,243
Field Services O & M										
Pretreatment	\$ 215,565	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 215,565	\$ -	\$ -
Municipal Interceptors	316,033	0	0	0	0	0	316,033	0	0	0
Mill Interceptors	2,295	0	0	0	0	0	0	0	2,295	0
Fox River Fiber Force Main	20,154	0	0	0	0	0	0	0	0	20,154
Municipal Metering Stations	341,059	0	0	0	0	0	341,059	0	0	0
Mill Metering Stations	20,364	0	0	0	0	0	0	0	0	20,364
Municipal Lift Stations	410,452	0	0	0	0	0	410,452	0	0	0
Subtotal	\$ 1,325,922	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,067,544	\$ 215,565	\$ 2,295	\$ 40,518
All Other (Field Services Salaries after distribution)	425,542	0	0	0	0	0	342,618	69,184	737	13,004
Total Interceptor System O & M	\$ 1,751,464	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,410,162	\$ 284,749	\$ 3,032	\$ 53,522
Total O & M Costs	\$ 21,649,280	\$ 5,678,690	\$ 5,705,320	\$ 4,487,180	\$ 377,649	\$ 2,133,050	\$ 2,498,522	\$ 422,952	\$ 236,152	\$ 109,765
Distribution to Participants										
MUNICIPAL	\$ 20,084,343	\$ 4,999,773	\$ 5,557,496	\$ 4,126,314	\$ 375,834	\$ 2,103,452	\$ 2,498,522	\$ 422,952	\$ -	\$ -
FOX RIVER FIBER	41,526	0	0	0	0	0	0	0	0	41,526
PROCTER & GAMBLE	1,523,411	676,917	147,824	380,866	1,815	29,598	0	0	236,152	88,238
Total	\$ 21,649,280	\$ 5,678,690	\$ 5,705,320	\$ 4,487,180	\$ 377,649	\$ 2,133,050	\$ 2,498,522	\$ 422,952	\$ 236,152	\$ 109,765

NEW Water
Green Bay Metropolitan Sewerage District
2018 Adopted Budget - December 6, 2017
Interceptor System O & M

Account Name	Maintenance	Field Services	Procter & Gamble Meter Station	Procter & Gamble Interceptor	Fox River Fiber Force Main	Total
Salaries - Procter & Gamble (P&G) Interceptor	\$ -	\$ 1,142		\$ 1,142		\$ 1,142
Benefits - P&G Interceptor	-	403		403		403
Salaries - P&G Meter Station	2,945	10,279	13,224			13,224
Benefits - P&G Meter Station	1,040	3,630	4,670			4,670
Salaries - Fox River Fiber - Force Main	-	4,569			4,569	4,569
Benefits - Fox River Fiber - Force Main	-	1,613			1,613	1,613
Salaries - Fox River Fiber - Meter Station	1,000	7,995			8,995	8,995
Benefits - Fox River Fiber - Meter Station	353	2,823			3,176	3,176
Repair & Maintenance (R & M) - P&G Interceptor			-	750		750
R & M - P&G Meter Station			1,030			1,030
Phones - P&G			1,440			1,440
Power - P&G			-			-
R & M - Force Main					1,606	1,606
R & M - Meter Station					195	195
Chemicals					-	-
Total	\$ 5,338	\$ 32,454	\$ 20,364	\$ 2,295	\$ 20,154	\$ 42,813

Account Name	Maintenance	Field Services	GBMSD Meter Stations	GBMSD Interceptors	Lift Station	Pretreatment
Salaries - Pretreatment	\$ -	\$ 147,143				\$ 147,143
Salaries - GBMSD Interceptors	3,687	85,203		88,890		
Salaries - GBMSD Meter Stations	-	89,086	89,086			
Salaries - East Bayshore Lift Stations	26,150	38,376			64,526	
Salaries - East River Lift Station	13,231	13,706			26,937	
Salaries - Old Plank Lift Station	3,844	7,081			10,925	
Salaries - Interplant Force Main	-	11,878		11,878		
Salaries - Chemical Feed Building	-	2,284	2,284			
Benefits - Pretreatment	-	51,962				51,962
Benefits - GBMSD Interceptors	1,302	30,088		31,390		
Benefits - GBMSD Meter Stations	-	31,460	31,460			
Benefits - East Bayshore Lift Stations	9,235	13,552			22,787	
Benefits - East River Lift Station	4,672	4,840			9,512	
Benefits - Old Plank Lift Station	1,357	2,501			3,858	
Benefits - Interplant Force Main	-	4,195		4,195		
Benefits - Chemical Feed Building	-	807	807			
Pretreatment Program						16,460
R & M - East Bayshore System Lift Stations					63,950	
R & M - East Bayshore Force Main					1,660	
R & M - East River Lift Station					62,700	
R & M - GBMSD Interceptors - Field Services				56,155		
R & M - GBMSD Interceptors - Engineering				120,000		
R & M - Old Plank Lift Station					4,307	
R & M - Interplant Force Main				3,525		
R & M - GBMSD Meter Stations			161,730			
R & M - Chemical Feed Building			1,432			
Phones - Meter/Lift Stations			36,860			
Phones - Chemical Feed Building			-			
Power - Meter Stations			16,000			
Power - Chemical Feed Building			1,400			
Power - Old Plank Lift Station					1,550	
Power - East Bayshore Lift Stations					25,500	
Power - East River Lift Station					33,000	
Water - East River Lift Station					1,500	
Chemicals - Old Plank Lift Station					4,500	
Chemicals - De Pere Conveyance					47,320	
Chemicals - Chemical Feed Building					-	
Chemicals - Bayshore Interceptor					25,920	
Total			\$ 341,059	\$ 316,033	\$ 410,452	\$ 215,565

Attachment: 2018 Adopted Budget (6499 : Consider 2017-2018 Sewer Rate Study*)

NEW Water
Green Bay Metropolitan Sewerage District
2018 Adopted Budget - December 6, 2017
Salaries and Benefits before Distribution

Description	Commission	Business Services	Laboratory & Research	Treatment	Maintenance	Engineering	Information Technology	Field Services	Environmental Programs	Total
Gross Salaries	\$ 2,500	\$ 1,040,279	\$ 530,009	\$ 1,973,822	\$ 1,794,952	\$ 623,322	\$ 438,374	\$ 723,558	\$ 489,428	\$ 7,616,244
Long Term Disability	-	5,598	3,277	11,543	10,282	4,083	3,174	4,178	2,856	44,991
Dental Insurance	-	9,173	7,040	20,426	21,586	6,738	5,269	6,140	1,823	78,195
Health Insurance	-	164,876	116,991	340,610	369,236	69,603	73,057	131,801	33,074	1,299,248
Life Insurance	-	3,518	853	5,731	5,965	2,431	2,415	1,968	1,289	24,170
Wisconsin Retirement	-	66,667	34,130	131,867	116,530	43,163	33,425	46,959	30,013	502,754
FICA & Medicare	191	75,929	40,546	156,513	137,314	50,316	38,842	55,352	37,442	592,445
Worker's Compensation	5	6,797	13,992	52,964	47,387	11,392	1,066	19,102	4,867	157,572
Uniforms	-	-	1,988	12,480	12,288	-	-	3,100	-	29,856
Employee Assistance	-	3,158	-	-	-	-	-	-	-	3,158
Wellness Program	-	-	-	53,322	-	-	-	-	-	53,322
Totals	\$ 2,696	\$ 1,375,995	\$ 748,826	\$ 2,759,278	\$ 2,515,540	\$ 811,048	\$ 595,622	\$ 992,158	\$ 600,792	\$ 10,401,956

Note: Engineering, Treatment, and Information Technology Salaries were decreased by \$191K for re-allocation of salaries to Solids Management Capital Loan Amount.

Green Bay Metropolitan Sewerage District
2018 Adopted Budget - December 6, 2017
Salaries and Benefits after Distribution to Interceptors & Meter Stations

Description	Commission	Business Services	Laboratory Services	Treatment	Maintenance	Engineering	Information Technology	Field Services	Environmental Programs	Total
Gross Salaries	\$ 2,500	\$ 1,040,279	\$ 530,009	\$ 1,973,822	\$ 1,744,095	\$ 623,322	\$ 438,374	\$ 304,816	\$ 489,428	\$ 7,146,645
Long Term Disability	-	5,598	3,277	11,543	9,981	4,083	3,174	1,704	2,856	42,216
Dental Insurance	-	9,173	7,040	20,426	21,064	6,738	5,269	1,841	1,823	73,374
Health Insurance	-	164,876	116,991	340,610	360,560	69,603	73,057	60,368	33,074	1,219,139
Life Insurance	-	3,518	853	5,731	5,804	2,431	2,415	639	1,289	22,680
Wisconsin Retirement	-	66,667	34,130	131,867	113,173	43,163	33,425	4,573	30,013	457,011
FICA & Medicare	191	75,929	40,546	156,513	133,423	50,316	38,842	34,924	37,442	568,127
Worker's Compensation	5	6,797	13,992	52,964	46,335	11,392	1,066	13,577	4,867	150,995
Uniforms	-	-	1,988	12,480	12,288	-	-	3,100	-	29,856
Employee Assistance	-	3,158	-	-	-	-	-	-	-	3,158
Wellness Program	-	-	-	53,322	-	-	-	-	-	53,322
Totals	\$ 2,696	\$ 1,375,995	\$ 748,826	\$ 2,759,278	\$ 2,446,724	\$ 811,048	\$ 595,622	\$ 425,542	\$ 600,792	\$ 9,766,523

Note: Engineering, Treatment, and Information Technology Salaries were decreased by \$191K for re-allocation of salaries to Solids Management Capital Loan Amount.

NEW Water
Green Bay Metropolitan Sewerage District
2018 Adopted Budget - December 6, 2017
Employees Headcount Report

DIVISIONS AND DEPARTMENTS	DEPARTMENT	2017 BUDGET HEADCOUNT	2018 BUDGET HEADCOUNT
Business Services including Non-Departmental *		13	13
Laboratory & Research		8	8
Treatment including Health and Safety		25	25
Maintenance		24	24
Engineering		7	7
Information Technology		6	6
Field Services		9	9
Watershed Management		4	4
Regulatory Compliance		1	1
Total Headcount without Commissioners **		97	97
Commissioners		5	5

New Positions

Notes:

* Non-Departmental Division includes Executive Director & Human Resources

** Total Full-Time and Part-Time positions

Divisions and Departments classification for referencing

<u>BUSINESS SERVICES</u>	<u>TECHNICAL SERVICES</u>	<u>OPERATIONS</u>	<u>ENVIRONMENTAL PROGRAMS</u>	<u>NON-DEPARTMENTAL</u>
Accounting	Engineering	Maintenance	Watershed Management	Commission
Public Affairs and Education	Field Services	Treatment	Regulatory Compliance	District Wide
Information Technology		Health and Safety	Laboratory & Research	Executive Director and HR
Administrative Services			Sustainability	Procter & Gamble
				Fox River Fiber

Definition of Positions

Regular Full-time Employee – Individuals who work 40 hours per week for an extended period of time and have successfully completed a probationary period.

Regular Part-time Employee – Individuals who work less than 40 hours per week for an extended period of time.

NEW Water
Green Bay Metropolitan Sewerage District
2018 Adopted Budget - December 6, 2017
OUT-OF-AREA TRAVEL - Outside EPA Region 5 (Wisconsin, Minnesota, Illinois, Ohio, Indiana, Michigan)

Title	Division	Event
Accounting Manager	Business Services	Institute of Management Accountants (IMA) Conference, TBD
Information Technology Manager	Business Services	Microsoft Envision Conference, TBD
System Technician - GIS	Business Services	Microsoft Ignite Conference, TBD
Director of Technical Services	Technical Services	Water Environment Federation (WEFTEC) Conference, New Orleans, LA
Project Manager	Technical Services	Water Environment Federation (Residuals & Biosolids) Conference, Phoenix, AZ
Staff Engineer	Technical Services	Water Environment Federation (WEFTEC) Conference, New Orleans, LA
Director of Operations	Operations	Water Environment Federation (WEFTEC) Conference, New Orleans, LA
Treatment Manager	Operations	WEF Residuals & Biosolids Conference, Phoenix, AZ
Treatment Lead	Operations	WEF Utility Management Conference, San Antonio, TX
Executive Director	Non-Departmental	National Association of Clean Water Agencies (NACWA) Summer, Boston, MA
Executive Director	Non-Departmental	National Association of Clean Water Agencies (NACWA) Winter, Napa, CA
Executive Director	Non-Departmental	Water Environment Federation (WEFTEC) Conference, New Orleans, LA
Commissioner	Non-Departmental	National Association of Clean Water Agencies (NACWA) Summer, Boston, MA
Commissioner	Non-Departmental	National Association of Clean Water Agencies (NACWA) Winter, Napa, CA
Director of Environmental Programs	Environmental Programs	International Association of Great Lakes Research, (IAGLR), Toronto, On
Watershed Programs Manager	Environmental Programs	International Association of Great Lakes Research, (IAGLR), Toronto, On
Analytical Chemist	Environmental Programs	Pittsburg Conference of Analytical Chemistry and Applied Spectroscopy, (PITTCO), Orlando, FL
Water Resources Specialist	Environmental Programs	International Association of Great Lakes Research, (IAGLR), Toronto, On
Laboratory and Research Manager	Environmental Programs	Water Environment Federation (WEFTEC) Conference, New Orleans, LA

12/5/2017

GREEN BAY METROPOLITAN SEWERAGE DISTRICT
2018 BUDGET: 5-YEAR CAPITAL INVESTMENT PLAN

2018 Adopted Budget – December 6, 2017	2018	2019	2020	2021	2022
MAJOR CAPITAL: WASTEWATER TREATMENT FACILITIES					
GBF: Blower System Efficiency Upgrade	-	-	400,000	2,413,000	4,016,000
GBF: R2E2 Solids Management Project	17,198,000	3,135,000	-	-	-
GBF: Metro & Mill Pumping and Plant Drain Systems Upgrades	-	100,000	1,460,000	4,860,000	1,620,000
GBF: Gravity Belt Thickener Replacement	-	-	400,000	5,400,000	-
DPF: Service Water System Rehabilitation/Replacement	160,000	2,160,000	-	-	-
DPF: Primary Substation & Emergency Generator	3,760,000	1,220,000	-	-	-
GBF & DPF: Clarifier Rehabilitation	400,000	2,160,000	2,160,000	2,160,000	2,160,000
GBF: Primary Clarifier Odor Control	250,000	2,750,000	-	-	-
GBF & DPF: Headworks Upgrades	-	-	400,000	3,250,000	3,430,000
Interplant Wastewater Force Main - Phase 2	-	-	-	-	36,000
GBF Phosphorus Upgrade	-	750,000	7,628,000	7,628,000	68,649,000
DPF Phosphorus Upgrade	-	500,000	2,768,000	2,768,000	24,912,000
TOTAL WASTEWATER TREATMENT FACILITIES	21,768,000	12,775,000	15,216,000	28,479,000	104,823,000
MAJOR CAPITAL: INTERCEPTORS					
Dutchman Creek Interceptor Upgrade & Rehabilitation ** See Notes **	2,500,000	-	-	-	-
Ninth Street Interceptor Rehabilitation ** See Notes **	7,000	118,000	2,966,000	-	-
East River Interceptor Rehabilitation	155,000	3,666,000	-	-	-
West Fox River Interceptor Relay and Rehabilitation	-	-	-	-	209,000
Ninth Street Interceptor Extension - American Drive	-	-	1,250,000	-	-
Fox River Crossing Rehabilitation	-	-	67,000	1,588,000	-
East Fox River Interceptor Rehabilitation	-	-	119,000	2,815,000	-
Bayview Interceptor Replacement ** See Notes **	4,123,000	-	-	-	-
Charles Street Interceptor Upsizing ** See Notes **	1,512,000	-	-	-	-
East River Lift Station - Upsizing & Rehabilitation	-	-	-	77,000	1,823,000
East Bayshore Lift Stations - Replacement	-	-	-	35,000	520,000
TOTAL INTERCEPTORS, METER STATIONS & LIFT STATIONS	8,297,000	3,784,000	4,402,000	4,515,000	2,552,000
DEPARTMENT ANNUAL CAPITAL INVESTMENTS					
MAINTENANCE SECTION					
DPF: Replace outdated MCCs	-	-	125,000	-	-
DPF: Replace diffuser socks in aeration system (10-year rotation)	-	-	-	57,000	-
GBF: Replace Air Handling Units	-	432,000	527,000	230,000	-
DPF: Replace roof - Sludge Control Tank Building	-	-	-	79,000	-
DPF: Replace roof - Service Building	113,000	-	-	-	-
DPF: Replace roof - Blower Building No. 2	158,000	-	-	-	-
Vehicle ID# 103 Replacement	-	50,000	-	-	-
Vehicle ID# 111 Replacement	-	-	-	40,000	-
DPF: Actuated Slide Gates & Basin Drains	-	-	-	200,000	-
GBF: Air Compressor Replacement	-	-	-	400,000	-
DPF: Air Handling Unit Replacement	-	250,000	-	-	-
GBF: Power Roof Vent Replacement	-	375,000	-	-	-
DPF: Power Roof Vent Replacement	-	-	125,000	-	-
GBF: Tunnel Unit Heater Replacement Phase 1	50,000	-	-	-	-
GBF: Tunnel Unit Heater Replacement Phase 2	-	50,000	-	-	-
GBF: Tunnel Unit Heater Replacement Phase 3	-	-	50,000	-	-
DPF: Tunnel Unit Heater Replacement	-	-	-	50,000	-
GBF: Transformer Replacement Project	-	125,000	-	-	-
GBF: SW Pump Replacement	-	-	-	400,000	-

12/5/2017

**GREEN BAY METROPOLITAN SEWERAGE DISTRICT
2018 BUDGET: 5-YEAR CAPITAL INVESTMENT PLAN**

2018 Adopted Budget – December 6, 2017	2018	2019	2020	2021	2022
GBF: Basin Complex Walkway Concrete Rehabilitation	-	224,000	200,000	-	-
DPF: Process Air Blowers - HST Upgrades Phase 2 (HST #4,6)	100,000	-	-	-	-
Maintenance Section subtotal	421,000	1,506,000	1,027,000	1,456,000	-
INFORMATION TECHNOLOGY SECTION					
GBF: Fiber Optic Network Enhancement/Upgrade	-	-	-	80,000	-
GBF: Building Network Cabling Enhance/Upgrade	-	-	-	45,000	-
GBF: Replace PLC Input/Output Hardware	-	125,000	125,000	125,000	125,000
GBF: HR/Payroll Software System	50,000	-	-	-	-
GBF: & DPF: Time and Attendance System	40,000	-	-	-	-
GBF: Financial Software Replacement/Upgrade	250,000	-	-	-	-
GBF & DPF: Telephone System	-	-	125,000	-	-
GBF: Campus Paging System	125,000	-	-	-	-
GBF: eDocs, Imaging/ Management/Collaboration	-	-	-	90,000	-
Information Technology Section subtotal	465,000	125,000	250,000	340,000	125,000
ENGINEERING SECTION					
Meter Station #1 Flow Tube and Flow Meter Replacement	-	90,000	-	-	-
DPF: Demolish Solids Building & MS11A	1,000,000	-	-	-	-
ERLS: HVAC Improvements	-	300,000	-	-	-
Annual Manhole Rehabilitation	50,000	50,000	50,000	50,000	50,000
East River Interceptor Abandoned Segments	715,000	-	-	-	-
Engineering Services Section subtotal	1,765,000	440,000	50,000	50,000	50,000
WATERSHED MANAGEMENT SECTION					
Watershed Management Section subtotal	-	-	-	-	-
FIELD SERVICES SECTION					
MS-05 Flow Tube Replacement	-	100,000	-	-	-
Lift Station alarm notification system	250,000	-	-	-	-
ERLS - Grinder system	-	-	250,000	-	-
ERLS - Ozone unit replacement	60,000	-	-	-	-
Field Services Section subtotal	310,000	100,000	250,000	-	-
LABORATORY SERVICES SECTION					
Laboratory Information System	-	-	-	350,000	-
Ion Chromatography System	50,000	-	-	-	-
Laboratory Services Section subtotal	50,000	-	-	350,000	-
TOTAL ANNUAL CAPITAL INVESTMENTS	3,011,000	2,171,000	1,577,000	2,196,000	175,000
TOTAL CAPITAL INVESTMENTS	33,076,000	18,730,000	21,195,000	35,190,000	107,550,000

Notes:

Major Capital - Interceptors: Dutchman Creek Interceptor Upgrade & Rehabilitation project: Funded via \$390,719 from Debt Service Reserve and balance from Interceptor Cost Recovery Reserve.

Major Capital - Interceptors: Bayview Interceptor Replacement project anticipated to be funded from Interceptor Cost Recovery Reserve and no debt service collected.

Major Capital - Interceptors: Ninth Street Interceptor Rehabilitation project: \$100,000 overcollected in 2015 for anticipated Annual Capital project.

Major Capital - Interceptors: Charles Street Interceptor Upgrades project: To be funded through the Interceptor Cost Recovery Reserve.

This 5-year report projects costs going forward. It does not capture actual expenditures from previous years and the totals do not accurately reflect the total capital costs of projects that are in progress.

Attachment: 2018 Adopted Budget (6499 : Consider 2017-2018 Sewer Rate Study*)

Green Bay Metropolitan Sewerage District 2018 Budget – Adopted

Summary of Revenues and Expenses Legends

Revenues:

Favorable Revenue Variances: means more revenue than projected or budgeted. It is a positive occurrence to receive more revenues than anticipated.

Unfavorable Revenue Variances: means less revenue than projected or budgeted. It is usually a negative occurrence.

Municipal User Fees:	Volume, Biochemical Oxygen Demand, Suspended Solids, Phosphorus, Kjeldahl Nitrogen, Direct Charges, and Hauled Waste
Mill User Fees:	Volume, Biochemical Oxygen Demand, Suspended Solids, Phosphorus, Kjeldahl Nitrogen, Direct Charges from Procter & Gamble, and Fox River Fiber
Mill Direct Charges:	Daily Sample Pickup and Laboratory Testing, Inspection, Monitoring, Dewatering, O&M, and Diggers Hotline
Mill Capital Charges:	Capital and Debt Service Charges
General Reserve Interest:	Interest Income from General Fund Accounts (unrestrictive funds) other than Investment Accounts
Other Revenues:	Rate Stabilization Offsets, Interest Income Offsets, Hauled Waste Truck Fees, Sampling, Laboratory Analysis, Yacht Club Lease, and Interceptor Cost Recovery Leases
Rate Stabilization Reserve Transfers:	A designated expense allocated to rate stabilization funds due to prior year collection or expenses designated to be funded by this reserve
Interceptor Cost Recovery (ICR) Reserve Transfers:	GBMSD has agreements with various municipal customers in which the municipalities have agreed to reimburse GBMSD for the cost of interceptors owned by GBMSD whose capacity has been allocated to the municipalities. Annual repayments are sent to the municipalities. This transfer is to offset the debt payment of these interceptors

Green Bay Metropolitan Sewerage District 2018 Budget – Adopted

Summary of Revenues and Expenses Legends

Plant and Equipment Replacement Designated capital expenses allocated to be funded by this
Fund Reserve Transfers (PERF): reserve.

General Fund Transfers: Designated expenses allocated to be paid by this fund.

Expenses:

Favorable Expense Variances: means less expenses than budgeted or projected.

Unfavorable Expense Variances: means more expenses than budgeted or projected.

Salaries & Benefits:	Salaries, Opt-Out Incentive Payout, Health, Dental, & Life Insurances, Retirement, Social Security, Fringe Benefits, Workers Compensation, Uniforms, Employee Referral Services, Long Term Disability, Wellness, Employee Assistance, and Uniforms
Power:	All Power for the facilities
Contracted Services:	Contractors, Legal, Audits, Studies, Occupational Health, Custodial and Lawn Services, Environmental Programs, Sponsorship, Temporary Assistance, Recruitment, Consultants, Hazardous Waste Disposal, Class and Compensation, Household Hazardous Waste Disposal, Continuous Improvement/Lean, In District Sustainability, Risk Based Asset Management, Watershed Based Planning, Reg/Muni Environment Service, and Contingency
Maintenance & Repairs:	Repair and Maintenance Building and Equipments, Small Tools, Fuel for GBMSD Vehicles and Boats, Freight, Water, Fire Protection, Equipment Leases and Rentals
Chemicals:	Sodium Hypochlorite and Bisulfite, Polymer, Ferric Chloride, Lime, and Laboratory Chemicals for the facilities
Natural Gas & Fuel Oil:	Diesel, Fuel, Natural Gas for Generators, Incineration, and Heating for the facilities

Green Bay Metropolitan Sewerage District 2018 Budget – Adopted

Summary of Revenues and Expenses Legends

Solid Waste Disposal:	Material (grit, screenings, ash, and dewatered sludge) hauled from GBMSD to landfill
Interceptor System:	Repair and Maintenance of Interceptors, Lift Stations, Meter Stations, Pretreatment, Power, Chemicals, Water, and Telephones
Office & Administrative:	Publishing, Postage, Data Processing, Employee Recognition, Public Information, Portable, Telephones, Safety Shoes and Glasses, Memberships and Dues, Publications and Subscriptions, Licenses and Permits, Meeting Expenses, Bank Service Charges, Bond Issuance Cost, Community Outreach, Education & Public Outreach (EPO)
Insurances:	Automobile, Property, Boiler and Machinery, Liability, Umbrella, Commercial Crime, and Public Officials
Supplies:	Employee Security Badges, Safety & First Aid Equipment and Supplies, Small Computer Hardware and Software, Other Office Supplies, such as: Calculators, Pens, Pencils, Paper, Binders, Folders, Dividers, Tape, Batteries, Toner & Ink Cartridges etc., Cleaning/Janitorial Supplies, Building/Grounds Supplies, Shipping Supplies, etc.
Employee Training & Development:	Employee Development (Registration), Training, and Tuition Fees
Travel and Meetings:	Travel Lodging, Transportation, Meals and Mileage Expenses
DNR Environmental Fees:	Annual Environmental Fee statement from the DNR, which includes: charges from our NR101 discharge (includes a charge for all pounds of parameters that have permit limits), Hazardous Waste Disposal Fees, Air Emission Fees, and Laboratory Certification Fee. Other Fees such as Tier 2 report fees (related to hazardous material management on site) and other license or permit application fees which may arise

Green Bay Metropolitan Sewerage District
2018 Budget – Adopted
Summary of Revenues and Expenses Legends

Debt Service and Annual Capital

Debt Service:	Principal and Interest incurred for Long Term Capital projects from Clean Water Fund Loans, General Obligation Bonds, and Promissory Notes to financial institutions, such as: DNR, Associated Bank, Board of Commissioners of Public Lands, etc.
Annual Capital:	Maintenance Equipment and Interceptor repairs for less than a year expenses and completion
R2E2 Construction – Rate Stabilization:	An amount collected in advance of the debt service being due for the Solids Project (R2E2) to provide a transition to the overall rate impact on the financing for this project. The funds will be segregated and used to pay subsequent debt service on the R2E2 Project. The amount collected brings the overall 2013 rate increase to within the 9% amount estimated in the planning for R2E2 Project

Attachment: 2018 Adopted Budget (6499 : Consider 2017-2018 Sewer Rate Study*)

City of De Pere, Wisconsin

**Request For Board of Public Works Action**

MEETING DATE: December 11, 2017

DEPARTMENT: Public Works

FROM: Eric Rakers

SUBJECT: Consider Approval of the James Street Streetscape Design Services*

Background/Summary

In September 2017, the City Council approved the Request for Proposals (RFP) to seek qualified firms to submit for our streetscape design project on James Street. The project includes three phases to adequately address public engagement & facilitation as well as developing three design options to assist in selection of an appropriate design.

Phase 1 – Inventory and Analysis**Phase 2 – Conceptual Design and Design Refinement****Phase 3 – Design Development**

The City released the RFP on September 20th utilizing a number of communications channels and professional organizations including:

- Posted to City Website.
- Directly sent to firms that had expressed interest, or specialize in streetscape design.
- Posted on American Society of Landscape Architects (WI, MN) classified page.
- Posted on American Planning Association (WI, IL) classified page.
- Posted on Wisconsin League of Municipalities classified page.

In early October, the City provided responses to 16 questions submitted by 6 different firms. The questions and responses were posted on the website.

By the October 30th RFP deadline we received 7 proposals from qualified firms. Using the objectives listed in the RFP, the selection team chose 4 firms to interview. Each firm participated in a brief, in person, question and answer session to clarify any questions the selection team had while review the proposals.

The selection team reconvened to discuss the interviews and select the preferred firm. Since this is a design project, several factors were considered in an effort to choose a firm that blends best fit with best value, not just low bid as often associated with right of way construction projects. Understanding that the design that is ultimately selected impacts the final price on several of the proposals, the proposal price could increase. These increases were not reflected in some of the bids, making it difficult to determine the final cost of the design project. Our recommended firm has a clear price range defined, covering any design the City selects. A summary of costs is as follows:

Firm	Cost	Comments
GRAEF	\$39,500-\$43,500	Total design expense provided with a range from simple to complex streetscape options.
VIERBICHER	\$29,900	Design expense provided, but expenses for additional required services were not included (e.g. no electrical plan included).
SAIKI	\$39,618.00	Total design expense regardless of the streetscape option chosen.
STANTEC	\$39,325.00	Total design expense but only if the least simple streetscape option is chosen. Cost increase unknown for more complex streetscape option.

Based on their submittals and performance throughout the process, we recommend the Board of Public Works approve Graef to complete the James Street streetscape design project. Copies of the four finalist's proposals are included for your review. The proposed costs from Graef vary between \$39,500 and \$43,500, depending on the final option chosen for the streetscaping. If approved, City staff will seek Common Council approval of the contract on December 19th. The project will then begin in January 2018 as detailed in the RFP. The schedule of the project may flex based on the findings of the Cultural District Master Plan, which will be underway at the same time.

Recommendation

The budgeted amount from TID #7 in 2017 for this design is \$40,000. The selection team recommends that the Board of Public Works award the design services for the James Street Streetscape project to Graef in the amount of \$43,500. If the final cost exceeds the \$40,000, the additional funds would be allocated from the \$500,000 budgeted from TID #7 in 2018.

ATTACHMENTS:

- GRAEF (PDF)
- Saiki_Design (PDF)
- Stantec (PDF)
- Vierbicher (PDF)

October 30, 2017

Prepared for
City of De Pere, WI

PROPOSAL
James Street Streetscape
Conceptual Design &
Design Development



Attachment: GRAEF (6484 : Consider Approval of the James Street Streetscape Design Services*)



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**Section 1
Cover Letter**

Attachment: GRAEF (6484 : Consider Approval of the James Street Streetscape Design Services*)



collaborāte / formulāte / innovāte

October 30, 2017

Mr. Bill Boyle, PMP, GISP
Project Manager
335 South Broadway Street
De Pere, WI 54115

SUBJECT: James Street Streetscape Conceptual Design & Design Development

Dear Mr. Boyle,

De Pere has a living vision for its thriving community. As a hometown with a thriving walkable downtown commercial district, there is pride in local businesses and the historic preservation of architecture.

Reenvisioning James Street continues the commitment of growth and investment to maintain a vibrant downtown and engage with stakeholders. Crafting spaces that have meaning, resonate with the community, and tie together the existing design elements in the city's streetscapes is a central element of creating place and celebrating De Pere's identity. Providing multiple streetscape options, each with a slightly different approach, continue the city's tradition of public participation.

Working with cities like Muskego and Allouez, or large metropolitan areas such as Milwaukee and Chicago, GRAEF has been able to meet the variety of planning and design needs that were central to projects' aesthetic and budget success. Our team excels in working with municipalities, residents and stakeholders in creating common areas that build up loyalty and pride.

Using this experience and collaborating with City staff and stakeholders, we can meet the unique needs to reenvision James Street. Through the city's public participation, and a nod to the old James Street fountain, together we can create the next public space design in this node of downtown activity, with the historic context of the Union Hotel, the adjacencies of the Broadway commercial district, and the linkage potential to the Fox River Trail.

At first glance, the James Street fountain area seems like a small area tucked off the main corridor. While there's truth to that, there's more. The Claude Allouez bridge links the east and west side, and the Broadway-Wisconsin circulation pair on the east side with the Main-Reid one-way pair on the west. James Street links the residential area through the downtown and to the river, crossing through the study area portion of the project.

The retail in that area has entrances on both sides of the block, and with the parking lot off of Wisconsin Street, it elevates the importance of the James Street link for pedestrian connections from the Shopko/Payless/Associated Bank, Seroogy's, and the shopping and dining experiences on North and South Broadway Street. Further, James Street is an important downtown link to the Fox River Trail and all of the riverfront amenities.



Attachment: GRAEF (6484 : Consider Approval of the James Street Streetscape Design Services*)

While GRAEF excels in bringing structures and green spaces to life, we can only do that with a strong partnership where we listen first and foremost, and then lend a hand in creating meaningful and lasting spaces. We are looking forward to sharing our ideas and listening to your vision for downtown De Pere.

Sincerely,

A handwritten signature in black ink, reading "Kristan Grygiel Sanchez". The signature is fluid and cursive, with the first name "Kristan" and last name "Sanchez" clearly legible, and "Grygiel" in the middle.

Kristan Grygiel Sanchez, AICP, Assoc AIA
Project Manager
kristan.sanchez@graef-usa.com | 920-405-3821



Section 2 Statement of Qualifications

Statement of Qualifications



Areas of Expertise:

- Community Identity
- Streetscape Design
- Urban Design
- Waterfront Development
- Recreational Park and College Campus Master Planning
- Retail, Commercial, Civic and Residential Developments
- Mixed Use Land Planning
- Sustainable Design Services
- Street Lighting

The City of De Pere is looking for flexible, financially conscious, and functional design for this node of activity along the North Broadway corridor within the east side downtown district. The downtown has built momentum in an active business community, quality historic architecture, and strong community affinity from residents and visitors alike. The City is committed to providing engaging public spaces that promote economic development and community unity. To achieve these goals, the design for James Street needs to flesh out multiple options to pose to the public with a first focus on comfortable seating and foliage enhancements, and the broadest option to include a high level of quality interventions.

GRAEF is dedicated to providing a full range of streetscaping services for municipal, industrial, commercial, and governmental projects. A talented staff of landscape architects and urban designers ensure that projects are completed in an innovative and environmentally sound manner. Fortunately, GRAEF has all of those essential attributes.

The City of De Pere and GRAEF, together, can strengthen:

Community Identity: GRAEF landscape architects, urban designers, and planners have significant experience working with municipalities to establish community identity in order to create a true sense of place. This can be achieved through a variety of different measures such as gateway compositions, thematic signage monuments, vertical identifiers, plazas, bridge and overpass structure design and connections to adjacent natural amenities such as parks, open spaces and river corridors.

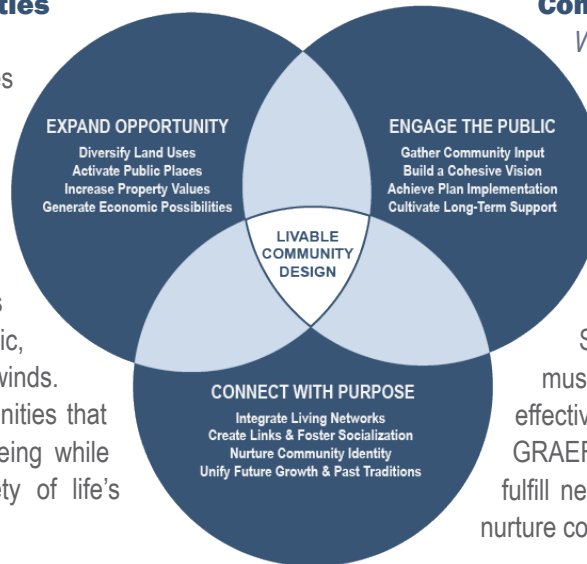
Streetscape Design: Because of our fully integrated, inter-disciplinary, approach to design, we have the expertise to provide a high level of design expertise related to the design of public spaces, and the planning expertise to guide the planning process within the greater community. Further, with our expertise in engineering and transportation design, our team brings a full complement of professionals to the table along the way to ensure the project can move from conception to installation within set budgetary considerations.

Urban Design + Development

Design Livable Communities

What is a livable community?

A livable community provides diverse paths for cultural, financial, and ecological fulfillment. A livable community balances conservation of the old with development of the new. A livable community adapts to the ever-changing economic, social, and environmental winds. GRAEF designs livable communities that expand opportunity and well-being while responding to the great variety of life's needs.



Connect with Purpose

What does it mean to connect with purpose? Purposeful connections

create integrated networks of live, work, and play opportunities. Purposeful connections create meaningful places for people to interact, as opposed to vacant plazas and symbolic green spaces.

Streetscape and landscape design must respect the context, function effectively, and generate positive activity. GRAEF designs circulation systems that fulfill needed links, foster socialization, and nurture communities.

Expand Social + Economic Opportunity

How can urban design expand opportunity? A well-designed community unlocks the latent social and economic potential of its residents by providing avenues for their manifestation. Designing a diversity of land uses allows for a variety of economic opportunities, thereby creating long-term resilience. Designing a safe and well-connected street network allows for a variety of travel modes, thereby creating social benefits. Many times the economic and social advantages of a well-designed community go hand in hand: a well-designed corridor is attractive, easy to use, and profitable. GRAEF creates designs that integrate aesthetic expertise with the ability to add social and economic value.

Respect What Is + What Will Be

What is better, old or new? Well-designed, livable communities will have a mixture of both. Good urban design simultaneously builds on a community's traditions, while affording new socioeconomic directions for change. Planning a community design requires a thorough understanding of the past, present, and future conditions. The rights of existing property owners must be honored while creating new opportunities for the future. GRAEF generates plans that reflect and respect the varied identities of a community's past, present, and future.

Engage the Public

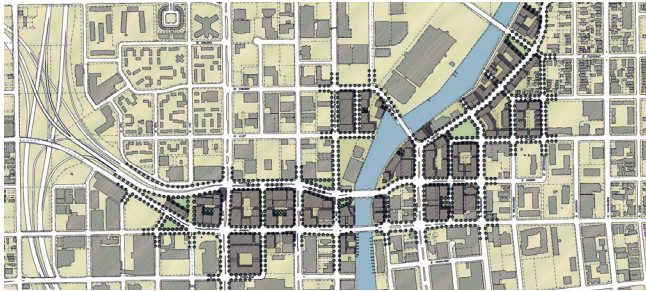
Who sits at the table? A key to the success of any urban design is strong public support. To generate strong public support, planning processes must actively reach into the community to create opportunities for public participation. The greater the participation, the richer the understanding of the problems and opportunities, and the higher the probability of implementation. GRAEF employs public participation efforts to inform the planning processes and generate long-lasting support for the design concepts produced.

Fulfill the Vision

How do we get there? The community vision created by an urban design should be matched by a strong strategy for implementation. Many visions cannot be realized, simply because their proponents do not acknowledge market constraints, regulatory procedures, or political values. GRAEF develops desirable and achievable visions for urban design that balance pragmatism with long-term aspirations.

Urban Design + Development

Example Projects



Park East Corridor



Bayshore Town Center



East Capitol Drive – Oak Leaf Trail



Northwest Side Neighborhood



City Homes

Park East Corridor Redevelopment, Milwaukee | Created master plan and form-based code to replace a former interstate freeway. GRAEF prepared the first new urban design project on a complex triangular infill site, which has become a hallmark of small-scale, finer grained revitalization in the area. The plan and code received a national award from the Congress for the New Urbanism.

Bayshore Town Center, Glendale | Designed streetscape, infrastructure, public places, and visual character of new retail center. A key feature is the plaza, which includes an interactive water play feature within the town square.

East Capitol Drive, Shorewood | Designed the new gateway bridge to the village as part of the overall reconstruction of a major arterial. The new landmark integrates the Oak Leaf Trail with landscape features linked to sustainable management.

Northwest Side Neighborhood Plan, Milwaukee | This plan was part of the City's overall system of neighborhood plans. Catalytic projects involved residential improvements and options for larger-scale commercial reinvestment along major business arterials. The plan won a state award from the APA.

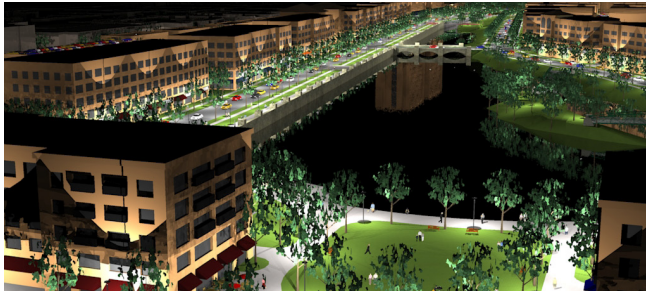
City Homes, Milwaukee | A successful effort in mixing moderate income housing into areas with substantially lower home values. Based largely on the neighborhood design quality, the units were sold within one year rather than the 12-year absorption predicted by the development community. The project was a model for the City's future Target Investment Neighborhood (TIN) program.

Fond du Lac and North Avenue Neighborhood Plan, Milwaukee | This plan set the standard for many of the City's other area plans. It included several catalytic urban infill projects related to housing, infrastructure, and economic development. Since adoption, many of these projects have been implemented. The plan won a state award, as well as a regional award, from the American Planning Association.

West Burleigh Street, Milwaukee | GRAEF designed an overall corridor plan for the street as well as a detailed park plan (now known as Sister Gengler Square) to stimulate neighborhood improvements. This project integrates new public places with neighborhood commercial and residential growth.

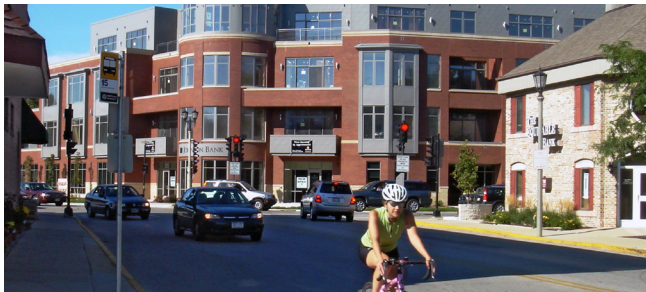
Urban Design + Development

Example Projects



Milwaukee Mile Redevelopment

Six Points Farmers' Market Plan and Redevelopment Plan, West Allis | Created and helped implement several redevelopment projects and helped establish 11 new redevelopment concepts—most notably for the Milwaukee Mile. These concepts create major redevelopment to guide future investment. This image shows redevelopment potential with new destination uses. The project includes mixed uses, has links to transit and bicycle trails, and has interior block parking areas. The major environmental feature is a new “riverwalk” created by daylighting the underground river.



Silver Spring Drive

Silver Spring Drive Plan and Streetscape, Whitefish Bay |

As part of an overall master plan strategy, identified key sites for landmark infill projects. A new mixed-use infill building was developed in accordance with GRAEF's design guidelines. GRAEF also designed and implemented a new “green” streetscape with traffic-calming and natural environmental features.



Enterprise Lofts

Enterprise Lofts, Milwaukee | Prepared a successful development concept integrating different forms of rental and owner housing. This mixed-use building borders Milwaukee's downtown and the Park East master plan created by our design team. A key aspect was integrating a variety of business mixed-use facilities that would support live-work units in an apartment-style structure.



Beerline Riverfront Housing

Beerline Riverfront Housing, Milwaukee | When Milwaukee adopted new guidelines for the riverfront Beerline project, GRAEF helped create several major projects along the waterfront, such as new townhouses, commercial development, and public recreational opportunities. GRAEF's engineers also helped implement this critical waterfront project.



Kinnickinnic River Neighborhood

Grafton Lumberyard, Grafton | GRAEF designed 10 infill strategies for redeveloping this complex former industrial site. Constraints included traffic, complex property ownership patterns, limited market opportunities, and integration with other district plans.

Kinnickinnic River Neighborhood Planning, Milwaukee |

Under guidance from the Sixteenth Street Community Health Center, prepared neighborhood planning concepts to extend new Kinnickinnic Riverfront improvements into the surrounding neighborhood. Design included infill developments and street sections to create “green” streets and commercial activity.



**Section 3
Project Team**

Kristan Grygiel Sanchez AICP, Assoc AIA Project Manager



Professional Certification

American Institute of
Certified Planners

Education

Master of Urban Planning,
University of Wisconsin-
Milwaukee

Master of Architecture,
University of Wisconsin-
Milwaukee

B.S. Architectural Studies,
University of Wisconsin-
Milwaukee

Affiliations

American Planning
Association - Wisconsin,
Board Member, VP-Awards,
2016-Present

American Institute of
Architects

Kristan is a planner and project manager with 20 years of experience in the public and private sectors. She has worked in planning, economic development, urban design, and architecture on projects throughout the US, most recently focused on economic development, brownfield, and redevelopment projects while serving as the Community Development Director for the Village of Ashwaubenon.

Comprehensive, Master, & Strategic Planning

Kristan has served as a consultant planner and as the internal staff project manager for multiple successful plans of various scales – from comprehensive community-wide plans to specific neighborhood area plans and transit-oriented development studies. The process includes engaging the community stakeholders, elected officials and professional staff to understand both the vision and the realities of the political and economic climate to best set the framework for continued use of the plan and implementation over the coming years. As the director of development for Ashwaubenon, Kristan held a primary leadership role in guiding the process, approvals, and ordinances for the complex, 34-acre, \$130 million Titledown Development. Kristan has provided master planning services for the Village of Ashwaubenon; for projects on the Gulf coast of Mississippi following Hurricane Katrina; and for communities throughout Chicagoland.

Urban Design

Kristan has developed property test fits, designed streetscapes and wayfinding systems, and led area plans centered on mixed-use developments and transit. A background in both architecture and planning gives her the skills and expertise to work at multiple scales to consider how buildings fit on sites and how those buildings interact with the surrounding street context. While with Ashwaubenon, she generated multiple site development plans for a 6-acre multi-family residential redevelopment area, taking into account the necessary valuation goals of the area (approximately \$40 million), the costs in the land, and the building parameters of developers to come to two viable options and, ultimately, a chosen alternative that met both the village's vision with the developer's proforma needs.

Economic Development

Kristan's work in economic development brings together the vision of the community with the market opportunities and development climate. Having a background working directly for development teams and on staff at a municipality, her work begins with the physical property or area location, which includes the property rights and regulations that form the basis of the zoning envelope and informs any potential development proforma. She has successfully negotiated the acquisition and sale of multiple properties for the purposes of redevelopment, including brownfield and riverfront sites. In addition, her background in development deals include structuring and negotiating development agreements and incentives within TIF districts, and has both established and amended TIF districts in order to facilitate continued progress and investment within focus areas, resulting in growth through numerous large-scale and complex projects.

Erik R. Schmitt PLA, CDT
Landscape Architect | Associate



Registration

Registered Landscape Architect – WI

Certification

Certified Document Technologist

Education

B.S., Landscape Architecture, 1996
University of Wisconsin-Madison,
Madison, WI

B.S., Horticulture, 1996, University
of Wisconsin-Madison, Madison, WI

Erik has worked for more than 20 years in landscape design and is an Associate at GRAEF. He has a wide range of project experience featuring a variety of scales: community identity, project visioning, streetscape design, urban plaza design, intimate scale pedestrian spaces, parks and open spaces, community elements, mixed-use developments, business parks, corporate campus design, master planned community water parks, and large scale land use planning. Erik has extensive experience working with private and public client groups regarding project planning, design, project approvals and construction.

Janesville Road Streetscape and Landscape Improvements – Moorland Rd to College Ave, City of Muskego, WI – Project Landscape Architect: Lead designer for approximately one mile of roadway through Muskego's central business district. Provided community visioning services in order to develop a new "Contemporary Lake Community" identity for Muskego and provided streetscape design services from Schematic Design through Construction Documents for the roadway reconstruction. Project highlights include custom City identity signage monuments, accent pavers at key intersections & roadway medians, new thematic roadway lighting with streetscape banners & custom metal cut-outs, and generous use of multi-seasonal landscaping.

Capitol Drive Streetscape, Shorewood, WI – Project Landscape Architect: For the replacement of about 2 miles of roadway from Estabrook Park to Lake Drive in the Village of Shorewood. As part of the roadway replacement we developed a streetscape plan to reflect the historical significance of the community while improving safety, aesthetics and accessibility of this urban corridor. Some major challenges of the project include traffic calming, coordination with several adjacent schools and the replacement of the Oak Leaf Trail Bicycle/Pedestrian Path Bridge.

Drexel Town Square, Oak Creek, WI – Project Landscape Architect: Large 85-acre redevelopment on the former industrial Delphi site. GRAEF has helped plan the project, gain public support, develop successful grants for funding, initiate design for sustainable infrastructure and design the infrastructure. The Wisconsin Economic Development Corporation (WEDC) awarded \$1.1 million in BEBR funds to clean up the site and prepare it for new development. GRAEF has been at the hub of this complex process, ensuring that site development is coordinated with all applicable federal, state, and local requirements. Drexel Town Square will serve as Oak Creek's new town center and a focal point for economic activity, environmental practices, and social stimulation.

University of Wisconsin-Madison, Union South, Madison, WI – Project Landscape Architect: This project was for the replacement of Union South at the University of Wisconsin. The project involves providing site development, programming, master planning, design development, and construction documents for the development of a replacement campus student center and exterior plazas and event spaces that is designed to receive a Platinum LEED rating. The project is in the programming phase of design.

Craig Huebner AICP

Urban Designer



Education

Master of Architecture, 2012
 Master of Urban Planning, 2012
 Certificate in Real Estate
 Development, 2012
 University of Wisconsin-Milwaukee,
 Milwaukee, WI
 B.S., Architectural Studies, 2009
 Certificate in Urban Planning, 2009
 University of Wisconsin-Milwaukee,
 Milwaukee, WI

Professional Certifications

American Institute of Certified
 Planners

Professional Affiliations

American Planning Association
 APA-Wisconsin Chapter

Awards

2nd Place – 2012 Emerging
 Professionals Design Competition
 (AIA Milwaukee)
 2012 APA-WI Student Planning
 Project Award (WAPA)
 1st Place – Brighten the Passage
 Design Competition (City of
 Milwaukee & Historic Third Ward)
 2012 SARUP Special Recognition
 Award for Outstanding
 Involvement with the Milwaukee
 Community

Craig's academic background is in both architecture and urban planning, and he has several years of experience working in both fields. His work experience includes neighborhood master planning, commercial redevelopment, streetscape corridor planning/design, site plan review, urban design, site and building design, park and open space planning, and design guidelines.

Streetscape Design

Craig has worked on a number of streetscape planning projects. Each project included extensive existing conditions research and focused on promoting economic development through physical design solutions. Responsibilities included stakeholder interviews, branding possibilities, amenity selection and conceptual landscape design.

Project examples include:

City of Waukesha - Downtown Street Master Plan
 City of Milwaukee - Fond du Lac Avenue Corridor
 City of Milwaukee - Bronzeville Streetscape

Urban Design & Property Development

Craig's experience in urban design includes developing design strategies for a variety of commercial corridors and specific properties as well as writing design guidelines. This includes meeting with a variety of stakeholders, suggesting design alternatives, and performing zoning and land use analyses. He has also conducted detailed site analyses, including parking lot configurations and site design possibilities for City-owned parcels.

Public Participation

Craig's experience in public participation includes the creation and facilitation of outreach materials for a variety of public and private stakeholders, image preference surveys, resident and business surveys, and the outcomes.

Project examples include:

Layton Boulevard West Neighbors
 Riverworks Business Improvement District
 City of Milwaukee

Neighborhood Planning

Craig has assisted with the development of several neighborhood plans within the Milwaukee area. Duties on these projects included preparation of public outreach and educational materials, statistical analysis, and research into historical and existing conditions. Craig also prepares many of the critical diagrams, illustrations and computer visualizations used to depict projects.

Project examples include:

Layton Boulevard West Neighbors
 Riverworks Business Improvement District

Lawrence P. Witzling PhD, AIA, PLA
Principal



Registrations

Registered Architect – WI
Registered Landscape Architect – WI

Education

Ph.D., City and Regional Planning,
1976, Cornell University, Ithaca, NY
Bachelor of Architecture, 1967,
Cooper Union, Manhattan, NY

Affiliations

American Institute of Architects
American Society of Landscape
Architects
ASLA – Wisconsin Chapter
American Planning Association
APA – Wisconsin Chapter
Congress for the New Urbanism

Larry has over 35 years of experience in urban design, land use planning and architecture. His design work has won national awards for urban design from Progressive Architecture, the American Institute of Architects, and the Congress for the New Urbanism. Prior to GRAEF, Larry was President of Planning & Design Institute, Inc. (PDI), a firm he founded in 1988.

Urban Design & Redevelopment

Larry has been involved in urban design and development projects for over three decades, garnering several national awards for his work from Progressive Architecture, the Congress for the New Urbanism, and the American Institute of Architects. These projects range from downtown and district plans to the design of unique public places. His work is characterized by respect for the local context and a concern for blending traditional and time-tested concepts with innovative approaches matching today's needs. His work includes both public and private sector projects including conservation subdivisions, district and neighborhood plans, mixed-use development, pattern books, form-based and hybrid codes, regulating plans, and entitlement procedures. His expertise includes developing initial concepts, as well as assisting throughout the implementation process. His work includes a variety of methods and techniques for public involvement including personal interviews, physical models, interactive computerizations, and traditional displays, publications, and studies.

Municipal Planning & Design

Larry has been involved in urban design and development concepts for traditional neighborhoods and districts for almost thirty years. His public sector work includes land use and smart growth plans, park and open space design, town centers, revitalization of older retail areas, preparation of ordinances and guidelines, boundary agreements, ongoing plan reviews, and other aspects of urban planning. His work also includes extensive contact with the general public through workshops, design charrettes, surveys, interviews, and open house presentations. His private sector work includes plans for conservation subdivisions, mixed-use developments, townhouses and multi-family development, presentations before local agencies, and supervision of development applications and submissions. He has served on several regional committees developing standards for subdivision ordinances and land use plans.

Planning for Sustainable Communities

Larry has been involved in issues regarding sustainability for more than a decade. He has worked on neighborhood sustainability issues in Racine, Kenosha, and Milwaukee. He has co-authored papers on sustainability and delivered presentations at professional conferences on this subject and he has authored guidebooks including the Planning and Administration of Design Competitions and Presenting Statistics. He was a featured speaker at a tri-state regional conference on sustainable housing design held at Wingspread (part of the Johnson Foundation Conference Center in Racine, WI). In addition he has taught continuing education classes on sustainable development.

Joseph F. Pepitone Jr. PLA, LEED AP
Senior Landscape Architect | Principal



Professional Registration
Registered Landscape Architect –
WI, CA
CLARB National Certification

Education
B.S., Landscape Architecture, 1986
University of Wisconsin-Madison,
Madison, WI

Professional Affiliations
American Society of Landscape
Architecture
Council of Landscape Architects
Review Board
Society for College and University
Planning
American Sports Builders
Association

Professional Certification
LEED® Accredited Professional

Joe is a licensed landscape architect who brings 30 years of professional experience in project management expertise, landscape architectural design and planning to GRAEF and has won numerous design awards for his work. Joe has been involved in master planning and design for corporate office, industrial, commercial/retail, recreational facilities, urban design, multi-family residential, senior housing, healthcare and educational campuses of all sizes. His expertise includes master planning to incorporate building(s) and site program elements in a functional and cohesive manner. His thorough knowledge of all aspects of site development allow him to provide complete and thorough documentation which includes site planning, detailed design, landscape design and details, planting design, construction documentation, specifications and on-site construction administration.

I-794 Lakefront Gateway, Milwaukee County, WI – Project Landscape Architect:

Designed concepts for improvements to roadway infrastructure east of Lincoln Memorial Drive, enhancements to Urban Park, and creation of four concepts for the Gateway Plaza, an area bordered by Lincoln Memorial Drive, Michigan Street, Art Museum Drive, and East Clybourn Street. Streetscape designs include pervious pavers in the terrace and parking areas; planters; decorative stone mulch; biofiltration areas; and landscaped medians to highlight the boulevards along each roadway. Landscape design includes shade trees, ornamental trees, limestone boulders, ornamental grasses and perennials. Careful attention was given to the selection of plants and trees that have minimal maintenance and can survive the salt that is prevalent in an urban environment.

O'Donnell Park Sculpture Garden, Milwaukee, WI – Project Landscape Architect:

Designed the landscape architecture plans for this urban park and pavilion, including a sculpture garden on top of a 1,250-car parking structure

Main Street (Highway Z) Streetscape, Village of Twin Lakes, WI – Landscape Architect:

Developed conceptual streetscape treatments for Main Street and worked with the Village's Streetscape Design Committee to select final design concepts and streetscape palette including; new street lighting, decorative paving, plantings and street furnishings. Prepared landscape construction documents and specifications to WISDOT standards for Main Street reconstruction (partially funded through ARRA). Final design includes enhanced pedestrian amenities, additional parking, and on-site storm water management through the use of permeable pavement.

Door County YMCA Master Plan, Sturgeon Bay, WI – Landscape Architect:

Provided landscape architecture design services and planning for the development of an outdoor recreation area within the existing open space areas adjacent to the YMCA. Proposed site improvements included an outdoor amphitheater, sport court, youth soccer fields, fitness/nature path through the site along with landscaping to compliment and screen the adjacent residential neighborhood and highway.

Patrick Skalecki PE, CDT, LEED AP

Senior Civil Engineer | Principal | Principal In Charge

**Registrations**Professional Engineer – WI, IL, IN,
IA, MI, MN, ID**Certifications**Construction Specifications
Institute – Construction Document
Technologist
LEED Accredited Professional**Professional Affiliations**American Society of Civil Engineers
American Public Works Association**Education**B.S., Civil Engineering, 1992
University of Wisconsin-Platteville,
Platteville, WI

Over the past 23 years in the engineering industry, Pat has developed extensive knowledge along with technical and managerial skills in public infrastructure and site engineering. He has been involved in projects from idea to grand openings. This depth of knowledge and experience helps clients evaluate project scope and budget early on in the process. He is skilled in public presentation and delivery needed to build consensus among stakeholders. During design, he uses his abilities in hydraulic modeling, hydrologic studies, municipal utility design, stormwater management and system design, roadway design, complete site development, parking lot design and associated construction engineering to realize the vision of the clients into a successful project.

Gateway Plaza Park, City of Neenah, WI - Project Manager: GRAEF provided Master Planning services and then full civil design, structural design, and landscape architecture for this centerpiece of the revitalized west end of downtown Neenah. This park serves as a transition from the natural park site environment of Arrowhead Park to the built urban downtown. It is the termination point of the paved bicycle/pedestrian lakeside trail access to downtown. It provides a location for small gatherings, has several landscaped seating “rooms” with benches, and includes an interactive musical interest piece within the paver plaza.

Kaukauna Hydro Park - Kaukauna Utilities/City of Kaukauna, Kaukauna, WI

This park incorporated specific historic elements as outlined in the final Historic Resources Management Plan to commemorate and educate on the historical significance of the hydroelectric power in the area’s settlement. GRAEF worked interactively with KU, City, and general public representatives to develop a schematic master plan for the park. This effort included several stake-holder workshops to obtain public input for the park. Portions of the existing canal limestone wall were left in place and exposed as a nod to the historical use of the space. A viewing area was provided for the new powerhouse and remaining canal. A large turbine impeller was a centerpiece of the design. Also, historic educational nodes were integrated with an outdoor performance area.

Herb & Dolly Smith Park, City of Neenah, WI - Project Manager: GRAEF was a critical member of the Master Planning team in 2008 and then was retained by the City of Neenah for full design, bidding and construction oversight of the project completed in 2013. Highlights of the park include a shelter with restrooms and open-air picnic space, walking paths with wildlife viewing areas, and a canoe and kayak launch. In addition, the park serves as a central point of interest for a paved bicycle and pedestrian path connecting the Menasha Trestle Trail to the heart of downtown Neenah. The project included a 390-foot long timber boardwalk across Little Lake Butte des Morts at the mouth of the Neenah Slough.

Andrew K. Schultz P.E.
Project Engineer



Professional Registration
Professional Engineer - WI

Education
B.S., Civil Engineering, 2006
University of Wisconsin-Platteville,
Platteville, WI

Professional Affiliations
American Society of Civil
Engineers, ASCE
Institute of Transportation
Engineers, ITE

Andrew joined GRAEF in June of 2006 and has worked on transportation and municipal design projects for the company. His responsibilities include design, plan preparation, and field inspection.

USH 141/STH 29 and CTH JJ/Verlin Road Intersection Improvement - Performed design and plan preparation for the conversion of the intersection from a signalized intersection to a multi-lane roundabout. Also included in this project is an adjacent section of CTH JJ to be milled and overlaid.

Military Avenue Reconstruction - This project involved the reconstruction of a major arterial street located within a primary commercial shopping district. The project includes upgrades to key intersections along the 1.5 mile route. The project reconstructed the corridor with a four lane section and signalized intersections including various safety and operational improvements.

Village Center Project, Village of Howard, Wisconsin

Village Center Project covers an area of over 80 acres of developable land north of Riverview Drive (CTH J) and west of Cardinal Lane (CTH EB). The first phase of work included the central 20 acres where the Village Square is located. GRAEF provided limited planning phase services and full design phase services. More specifically, the planning phase services included the traffic study for the immediate and full-build out scenarios and also a planning level review of the modified development layout and roadways sections. The design phase services included the preliminary layout and design of all roadways and utilities for the full build-out condition (3 phases), detailed design and preparation of bidding/construction documents for Phase I 2014 construction; identical services for the Phase II 2016 construction; upgrades to CTH CB including a roundabout; and site design for 2 interior building developments in 2016 and 2017.

USH 41, Breezewood Lane to USH 15, Outagamie & Winnebago Counties - Design Engineer for the pavement evaluations and bridge work along USH 41 from USH 15 to Breezewood Lane. The project reviewed the existing pavement sections to determine pavement areas or pavement joints that need replacement to improve the existing riding surface and extend the life of the pavement. Traffic Control was another integral part of this project. Traffic is required to be maintained on two lanes at all times while maintaining safe construction zones. The bridge rehabilitation portion of this project included 22 Bridge Deck Repairs, 2 epoxy overlays to improve skid resistance, 8 Expansion joint repairs, and 17 Bridge Approach slab replacements.

STH 42, Door County - This four mile segment transitions from an urban roadway section at the southern limits to a high speed rural section on the north. The project primarily consisted of milling and overlaying the existing asphaltic pavement, beam guard replacement, spot curb and gutter replacement, inlet replacement, storm sewer structure adjustments, roadside ditch grading for drainage improvements, along with intersection evaluations.



Section 4
Scope of Services & Tasks

Scope of Services & Tasks

GRAEF understands that in projects such as this, the context and the community are extremely important. Downtowns are made up of the overall impression – the landmark buildings, the collection of shops and destinations, the visual look and feel of the corridors – but just as important are the finer grain and fabric of the human-scale places and pieces of the public realm. The downtown – both east and west, linked by the bridge – has an impressive collection of eateries, shops and offices, and even boasts the eclectic advantage of a top-rated liberal arts college.

The east side connects to the Fox River Trail, and James Street is one of the east-west downtown connections that connects the residential area to the trail. While the primary pedestrian connection across the locks is a block north at William Street, the terminus of James Street is the locks and there is a visual connection to the historic lock keeper's house. While James Street at the fountain is a node of activity in itself, these larger connections weave into the thought and approach of the GRAEF team.

As outlined in the Request for Proposals, the scope of services is comprised of six primary tasks:

1. Assessment, Analysis, and Preliminary Design
2. Kick-off with City Staff and Meet with Stakeholder Group
3. Design Concepts
4. Presentation of Concepts to the Public & Common Council
5. Refinement and Final Concept Design
6. Design Development & Documentation

In addition to the scope as outlined in the RFP, the GRAEF team proposes the following additional items and clarifications:

Analysis

Given the context within the downtown and history of the fountain and the locks design, tying into the City's on-going visioning and branding initiative would be ideal. We will maintain the City's preferred schedule but would dovetail our work with the visioning team's findings to the greatest degree possible. In addition to the initial research and introduction call or in-person meeting with City staff (City's discretion), the team will schedule a call with City staff and/or the visioning team specifically to discuss that initiative and the project progress to date.

Stakeholder Dialog

The stakeholder group dialog is critical to the success of the project. This group will provide the initial design direction of the project. The GRAEF team proposes to facilitate the discussion with the stakeholders and City staff, but also provide a follow up summary of the findings and expand upon that by providing the implications to the design direction provided. This may come in the format of a collection of preferred images and places that have the illustrated design or design elements – this can be distributed as widely as preferred by the City. This type of precedent study may be a useful tool to continue the dialog with the City as the GRAEF team works through the initial concept design ideas.

Concepts

The site itself is one that is ingrained in the memory of residents and visitors. Alongside the iconic Union Hotel, it has the special nature of a pocket park combined with a link between the commercial and parking areas to the primary North Broadway Street corridor. The original fountain has been in place for such a period of time that it has created a sense of nostalgia despite other limiting factors, such as: circulation, visibility, and gathering space. The concepts will explore the place and the linkage within the greater corridor. The team suggests the addition of a concept review meeting after the initial submittal with the GRAEF project manager and City staff to facilitate any revisions prior to the submittal of the deliverables.

Scope of Services & Tasks

When public understanding and buy-in are paramount to the success of the project, the GRAEF team can add value through our expertise in creating 3D models of proposed site designs that can be translated into virtual reality (VR) experiences for our clients. While this falls outside of the base scope and fee, it is a service that can be added for the public presentation of the concepts, at the City's choice.

This VR experience can be shown through a variety of methods. The team can bring one of our mobile headsets to the client. This gives our clients and the public the most immersive experience into the proposed site design, where the user is placed into the 3D model providing a sense of depth and perspective. The other option is to upload 360 degree panoramic images to a website, which can be viewed with any digital device. While this option does not allow one to put on a headset and have an immersed experience, it does allow for widespread access to the proposed site design.

To accomplish this process a proposed design must be agreed upon between GRAEF and its client. We can then model the proposed design using 3D modeling software. From here, the 3D model is placed into a VR rendering program to enable the user to become immersed into the model. The base model and rendering of the first concept would be in the range of \$3,000-\$4,000, depending on the complexity of the chosen design. Additional concepts can be modeled for an additional fee. This could also be considered for the final chosen design.

Refinement

In addition to the review and integration of the public comments into the preferred design alternative, the design team will facilitate a discussion with City staff and the stakeholder group regarding the visual preference survey, precedent study, and the final concept design.

Design Development

A critical step to the bricks and mortar realization of the vision and concept is accurate and thorough design documents, in the form of drawings and specifications. A plan that does not transition to the built environment is only a plan. Our in-house staff of landscape architects, civil and transportation engineers, and structural engineers can help make it a reality. By offering all of these services internally, coordination of drawings becomes seamless and maintains consistency in appearance. At this level of design, we anticipate including specifications on the drawings for a clear, simple, single location of the project requirements. While the final direction of design will be defined through the initial phases of work, we expect that some limited structural design for seat walls or a sculpture footing may be needed. Performance irrigation design, material call-outs, and appropriate details provides the design development level of information needed for accurate pricing, with future product selection and fully developed specifications ready to proceed during construction document preparation.

Throughout the scope of the project our team will bring our full expertise to the table to bring innovate, engaging designs for this unique place in downtown De Pere. We look forward to working with your team to reimagine this node as it relates to the greater visioning and branding work and the overall structure of the urban fabric of the downtown. We will bring our full understanding of the City of De Pere and its reputation as a forward-thinking, growing city poised for even greater things in the coming years.



Section 5
Design Examples & Costs

Lakefront Gateway Plaza

City of Milwaukee | Milwaukee, WI



Services Planning

Associate Landscape Architecture
Structural Engineering
Site/Civil Engineering
Traffic Engineering
Mechanical Engineering
Electrical Engineering
Plumbing Engineering

Data

\$34 Million
National Design Competition

Reference

Rocky Marcoux, Commissioner of
Dept. Of City Development
City of Milwaukee
414-286-5800
Rocky.Marcoux@milwaukee.gov

The GRAEF team was recently awarded the design of Milwaukee's Lakefront Gateway Plaza after a national design competition in which 24 firms vied for the opportunity to design a signature public plaza at the lakefront. There are three central themes that underpin the GRAEF team's design. Together, they inform a multi-dimensional design and create an iconic, richly detailed and layered urban space that will become the City of Milwaukee's waterfront jewel. The design intention is to ensure that this site becomes a primary civic space in the City in addition to its role as the Gateway to many of Milwaukee's lakefront institutions and attractions and to Lake Michigan itself.

Reconnect

Reconnection of Milwaukee's urban core and the lakefront with experiential and a more abstracted reconnection to some of Milwaukee's formative history.

Celebrate

This design celebrates many aspects of Milwaukee, which include **water** (a lifeblood of the city); **safe harbor** (along the western shores of Lake Michigan); and a **celebration** of the city and its connection to Lake Michigan.

Activate

The Gateway Plaza will be active, urban, fun, and compelling. The design intent is to achieve a year-round experience for users of all ages and develop a framework for well programmed, memorable and highly enjoyable experiences, as well as the incorporation of social and cultural aspects of Milwaukee.

Silver Spring Drive Streetscape and Resurfacing

Client: Community Development Authority of the Village of Whitefish Bay | Whitefish Bay, WI



Services

Landscape Design

Streetscape Design

Utility Improvements

Roadway Improvements

Data

0.5-Mile Roadway

Phase 1 Construction Costs: \$1.2M

Phase 2 Construction Costs: \$1.6M

The Village of Whitefish Bay wished to enhance a half-mile stretch of the community's major thoroughfare. The two-phase project consisted of site utility improvements (first phase) and roadway resurfacing, intersection improvements, street lighting upgrades and streetscape enhancements (second phase).

Utility work included replacement of the water main, spot repairs to the sanitary sewer, and a new 60-inch storm sewer system. GRAEF prepared traffic control plans to reduce traffic to one-way eastbound using East Lakeview Avenue as an alternate route. Other roadway improvements included addition of two bump-out intersections to calm traffic, spot repairs of curb & gutter, base patching, sidewalk replacement, and an asphalt mill and overlay to the roadway surface. GRAEF developed a three-stage traffic control approach, which eliminated parking during construction but allowed for a single travel lane in each direction with short-term closures.

The streetscape improvements unify the aesthetic character and improve pedestrian safety within the business district. The streetscape elements consisted of retrofitting existing trees with new grates, new street trees, custom raised planters at bump-out intersections, upgrades to the existing street lighting, supplemental pedestrian lighting, landscape accent up-lighting, new brick accent paving along the entire corridor, redevelopment of the clock tower plaza, and new site furnishings such as benches, bike racks, trash receptacles, and a variety of pots for annual plants.

Claude Allouez (STH 32) Bridge

Client: WisDOT | Location: De Pere, WI



Project Data

3rd Street to Broadway
2.2 Miles
\$22.5M Construction Cost

Features

Urban Roadway Design
Traffic Analysis
Roundabout Design
Public Involvement Plan
Streetscape Plan
Traffic Engineering
Signal Design

Client Reference

Charles Karow, P.E.
Project Manager
WisDOT NE Region
920.492.5997

The Claude Allouez Bridge is the only traffic corridor connecting the east side (Broadway) and west side (Main Avenue/Reid Street) central business districts in the City of De Pere. The existing two-lane bridge was structurally deficient and operationally obsolete. Project controversy related to which alternative, a single four-lane bridge alternative or a two two-lane bridge alternative would have the least impact on the business community. As the lead consultant for WisDOT, GRAEF worked with community leaders and project stakeholders to arrive at a plan that resolved many of the community concerns. In addition to bridge design alternatives and roadway alignment, many design tasks included evaluating signalized intersections versus roundabouts at five locations and evaluating key intersections for level of service. Because of the project's controversial nature, an extensive public involvement program was planned and implemented. Specific activities included but were not limited to regular input and presentations to the City Council, focus group informational meetings and business group meetings.

The project is located in the Business District of the City of De Pere. Current traffic volumes are approximately 29,500 vpd and are anticipated to increase to a range of 35,000 to 43,000 vpd. The roadway design portion of this project included approximately 3,400 linear feet of four-lane urban roadway. The project also included design of a two-lane roundabout and two signalized intersection using video detection equipment. The scope of work specifically included managing significant historical and archaeological issues, noise issues, air quality concerns, contaminated river sediment, significant socio-economic issues, hazardous material investigations, traffic analysis and intersection design, utility coordination, railroad coordination, commercial and recreational boating issues, extensive local business involvement, community sensitive design and significant public information efforts. As part of the design process, GRAEF prepared plans for decorative and non-decorative lighting along the route.

Drexel Town Square

Client: City of Oak Creek | Oak Creek, WI



Drexel Town Square is a new mixed-use town center on the 85-acre site of the former Delphi automotive parts factory in Oak Creek. Oak Creek is an auto-dependent suburb of Milwaukee that currently lacks a 'downtown' area. Drexel Town Square will house civic, retail, office, open space, and residential uses.

Infrastructure Design | GRAEF is providing storm water management, utility design, grading, and site layout. Other services include development of site demolition, layout, grading, and utility plans for the public infrastructure, a wetland park, a town square, and streetscape design.

Awards

Sustainable Development Guide:
2013 APA-WI Award for Innovations
in Planning
2015 Eureka Award – *The Business
Journal*

Data & Services

Brownfields Grant Assistance
Public Participation
Sustainable Development Guide
Site/Civil Engineering

Reference

Michael Simmons
City Engineer
(414) 570-8200
msimmons@oakcreekwi.org

Brownfields Grant Assistance | GRAEF prepared and helped win approval for the largest grant awarded as part of Wisconsin's Blight Elimination and Brownfield Redevelopment (BEBR) program. This \$1.1 million award is being used to clean up the site and prepare it for new development.

Public Participation | GRAEF directed the initial public participation and concept design for the Town Square. The participation process included multiple public meetings and workshops intended to gather input regarding the ideal density and mix of uses on the site.

Sustainable Development Guide | With grant assistance from the MMSD, GRAEF prepared a Sustainable Development Guide to examine potential interventions on the site. The guide includes information on best practices, design considerations, costs, and the interrelationships of various techniques. The guide also outlines whether certain techniques are recommended at Drexel Town Square and shows how and where the techniques could be used, prompting discussion of cutting-edge sustainable features.

Janesville Road Streetscape and Street Lighting

Client: City of Muskego | Muskego, WI



Services

Landscape Architecture
Streetscape
Street Lighting

GRAEF landscape architects and electrical engineers worked with the City of Muskego to develop 2 miles of streetscaping for Janesville Road through the heart of the Downtown Business District. These elements are an exciting part of the overall roadway reconstruction project, which was a unique opportunity to develop and reinforce a new “lakeside community” identity for Muskego.

Awards

2015 Public Works Project of the
Year, APWA WI

Some of the key streetscape design beautification efforts include:

- Streetscaping components (street trees, accent lighting, hardscape details, etc.) concentrated in a way that reinforces the character for various areas of Muskego’s downtown
- Burial of all overhead utilities
- Addition of sidewalks along both sides of the new roadway
- Accent plantings in roadway terrace and medians
- Installation of hardscaping along medians and important intersections and crosswalks
- Custom-designed identity monuments designating key portions of the corridor
- Installation of decorative roadway lighting that accommodates thematic banners, custom metal cut-out panels, flags, and electrical installations
- Installation of new streetscape furnishings including benches, trash receptacles, and bike racks

Attachment: GRAEF (6484 : Consider Approval of the James Street Streetscape Design Services*)

Hydro Park

Client: Kaukauna Utilities | Location: Kaukauna, WI



Services Site/Civil Engineering Landscape Architecture

For 10 years, Kaukauna Utilities worked with the Federal Energy Regulatory Commission (FERC) for a new license on their upgrade to the Badger Hydro Plant with a new Powerhouse and power canal modifications in downtown Kaukauna. The hydro plant is contained in the Badger Hydro-Electric Historic District that was placed on the National Register in 1991. As part of the licensing requirements, KU was required to redevelop the old Badger facility and decommissioned area of the power canal. Part of the redevelopment was construction of community park.

This park incorporates historic elements outlined in the Historic Resources Management Plan to commemorate and educate on the historical significance of hydroelectric power in the area's settlement. For the initial phases of the project, GRAEF staff worked with KU, City, and general public representatives to develop a schematic master plan for the park. The effort included several stakeholder workshops to obtain public input for the park.

A portion of the power canal was filled and a new retaining wall constructed. Portions of the existing canal limestone wall were left in place and exposed as a nod to the historical use of the space. The design incorporated an area with views of the new powerhouse and remaining canal and a large turbine impeller that was already in the area. Also, historic educational nodes were integrated into the site design, as were an outdoor performance area, gathering spaces, and trail connections.

Attachment: GRAEF (6484 : Consider Approval of the James Street Streetscape Design Services*)

East Capitol Drive (STH 190)

Client: WisDOT/Village of Shorewood | Location: Shorewood, WI



Services

Urban Roadway Design
Public Involvement
Traffic Analysis
Traffic Signal Design
WisDOT Three Party Contract
Streetscape Plan
Structure Design
TMP Type 2 (Transportation
Management Plan)
pER

Client Reference

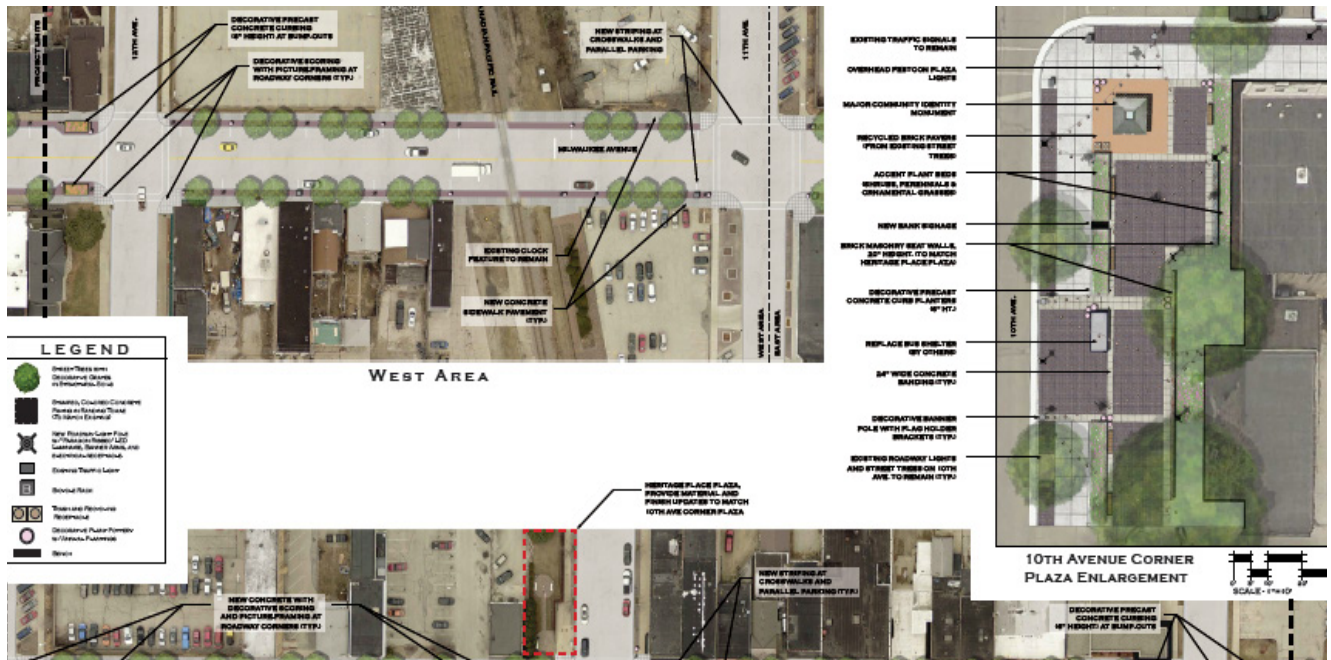
WisDOT/City of Shorewood
Chris Swartz
Village Manager
City of Shorewood
414.847.2700

GRAEF, in conjunction with the Village of Shorewood and WisDOT, completed the design process for full reconstruction of 1.2 miles of East Capitol Drive from Estabrook Parkway to Lake Drive. East Capitol Drive is a four-lane divided arterial roadway west of Oakland Avenue, which narrows to a two-lane undivided roadway east of Oakland Avenue. The posted speed limit is 30 mph west of Oakland Avenue and the existing roadway consists of two travel lanes in each direction and a 12' median from face-of-curb to face-of-curb. Parking is permitted at various locations throughout this segment of the corridor. East of Oakland Avenue, the existing roadway consists of one travel lane and one parking lane in each direction. The posted speed limit is 25 mph with a 15 mph posted school zone speed limit between Murray and Farwell Avenues. The project area has mixed land use of institutional, residential and commercial properties. There is high pedestrian activity along this corridor, along with high traffic counts, specifically in the vicinity of Shorewood High School, Atwater Elementary School, and St. Roberts School.

All pavement, curb and gutter, and sidewalk was replaced as part of the project. The median west of Oakland Avenue was increased from 12' to 18' – 28' depending on the location within the corridor. Turn lanes, horizontal alignment, and sidewalk locations were adjusted as well. Streetscaping elements and decorative street lights were incorporated into the plan of improvement. The project area includes seven signalized intersections. In addition to the roadway reconstruction, the project included replacement of the existing Oak Leaf Trail structure over Capitol Drive at the west end of the project. The new structure is a cambered truss and includes ADA accessible ramps that connect Capitol Drive to the Oak Leaf Trail. Four pocket parks were designed along the corridor to increase green space in this urban environment.

Milwaukee Ave

Client: City of South Milwaukee | Location: South Milwaukee, WI

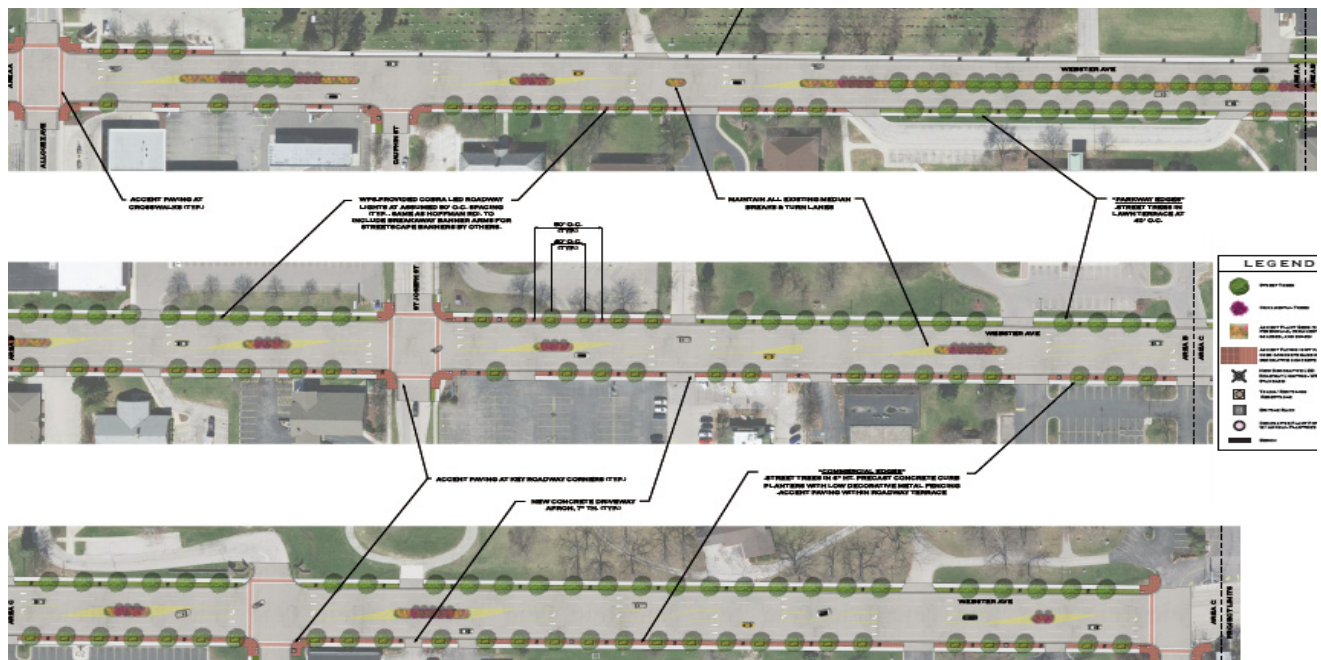


Project Cost

\$1.3M

Webster Ave

Client: City of Allouez | Location: Allouez, WI



Project Cost

\$1.9M



Section 6 References

Lakefront Gateway Plaza

Rocky Marcoux, Commissioner of
Dept. Of City Development
City of Milwaukee
414-286-5800
Rocky.Marcoux@milwaukee.gov



Drexel Town Square

Michael Simmons
City Engineer
(414) 570-8200
msimmons@oakcreekwi.org



Claude Allouez (STH 32) Bridge

Charles Karow, P.E.
Project Manager
WisDOT NE Region
920.492.5997



Attachment: GRAEF (6484 : Consider Approval of the James Street Streetscape Design Services*)



Section 7 Timeline & Fee Schedule

Timeline

Proposed Schedule James Street Streetscape Conceptual Design and Design Development		January					February				March				April				
		1	7	14	21	28	4	11	18	25	4	11	18	25	1	8	15	22	29
Phase I - Inventory and Analysis																			
1	Introductory Conference Call with City Staff																		
2	Review and Research of documents																		
3	On Site Meeting #1: Kickoff meeting with City Staff																		
4	On Site Meeting #2: Meeting with Project Stakeholder Group																		
5	Deliverables Submitted																		
Phase II - Conceptual Design and Design Refinement																			
6	Develop 3 Conceptual Design Alternatives and Budgets, Submit to City																		
7	Develop Renderings for Alternatives																		
8	City Review																		
9	Pre-meeting with City on Open House and Council Presentation																		
10	Open House/Council Meeting Presentation (March 20)																		
11	Revise Conceptual Design/Rendering into Preferred Alternative per feedback																		
12	Update Budget Estimate																		
13	Deliverables Submitted for review/approval																		
Phase III - Design Development Documents																			
14	Prepare Design Development Drawing set																		
15	Deliverables Submitted																		

Attachment: GRAEF (6484 : Consider Approval of the James Street Streetscape Design Services*)

Fee Schedule

The GRAEF team has carefully considered the outlined scope of services, the known information provided by the City, and the general components of the project, and we have developed a Total Not to Exceed Fee for the project. This Fee is based on the Project Scope of work as written in the submitted Proposal and the assumptions noted below.

Estimated Total Maximum Not to Exceed Fee (NTE): \$ 43,500.00

(Reimbursables are included in this Estimated Total Fee)

Fee Breakdown

Phase 1 and 2: \$27,500.00

Phase 3*: \$12,000.00 to \$16,000

*Phase 3 final cost is dependent on the level of complexity in the preferred conceptual design alternative

Below is an hourly fee schedule application for all Section E – Scope of Services tasks.

GRAEF Classification	GRAEF Rate
Professional (P1)	\$ 96.00
Professional (P2)	\$ 108.00
Professional (P3)	\$ 121.00
Professional (P4)	\$ 133.00
Professional (P5)	\$ 144.00
Professional (P6)	\$ 154.00
Professional (P7)	\$ 164.00
Professional (P8)	\$ 174.00
Administrative	\$ 67.00
Technician/Inspector (T1)	\$ 67.00
Technician/Inspector (T2)	\$ 84.00
Technician/Inspector (T3)	\$ 95.00
Senior Technician /Inspector (T4)	\$ 106.00
Senior Technician/Inspector (T5)	\$ 115.00
Senior Technician/Inspector (T6)	\$ 121.00

Automobile travel will be billed at the current federal rate. Expenses such as travel and supplies will be billed at actual cost. Contracted services and consultants will be billed at actual cost.



October 26, 2017

Mr. Bill Boyle
 Project Manager
 City of De Pere Economic Development and Planning Department
 355 South Broadway Street
 De Pere, WI 54115
 (digital copy by email; bboyle@mail.de-pere.org)

Dear Mr. Boyle,

Thank you for inviting us to submit this proposal for your James Street Streetscape Conceptual Design and Design Development project. We feel our team is highly qualified for your project and we're excited about the opportunity to work with you.

Julia Schilling will be our project manager. She is currently our PM for the Village in Wauwatosa, a multi-phase urban streetscape and open space project for the City of Wauwatosa. She and I are also wrapping up urban open space design for the City of Madison as part of their Monroe Street reconstruction project. I will be personally involved in this project, as Julia and I are an established in-studio team. Our resume briefs are attached.

You ask for proposed revisions to scope. We have not included scope or fee for irrigation. Based on our experience, we do not feel an irrigation system will pass the cost/benefit/maintenance and operation test in this small area which is likely to be largely hardscaped. We will explore water service location and cost for periodic maintenance, cleaning and watering in severe and establishment conditions. As you suggest, plant species will be selected for the specific conditions of this project, including a non-irrigated growing environment.

You will also find a selection of some projects that pertain to yours. We hope you will find them applicable and indicative of the quality of our work. Our approach is to treat each project as a unique situation, influenced by land, setting, community, budget; and your goals and objectives. All of our work in public settings requires in-depth public participation, but I would point to our 10-year engagement with Madison's State Street reconstruction and Peace Park; and the Village in Wauwatosa, specifically. These projects involved widespread public involvement, steering committees, oversight by elected officials, other city agencies and participation from the local Business Improvement Districts. I would also point to the work in Wauwatosa where bids for the multiphase project continue to run at or below the overall consultant's estimate to reflect on our experience with cost estimating. Additionally, our project work provides current cost data on similar project types throughout the state.

As our work on your project will end prior to final design and construction documents, I have added a few project profiles that speak to graphic product that will be part of our work for you. We have found working in 3D useful in exploring design options as well as presentation and communication. It is our intent to initiate your project in 3D for efficiency.

303 S. PATERSON
 SUITE ONE
 MADISON, WI 53703
 Phone: 608-251-3600
www.ksd-la.com

References:**Mr. Mike Steiner, P.E.**

Assistant City Engineer
 City of Wauwatosa
 7725 W. North Avenue
 Wauwatosa, WI 53213
 414-479-8974
msteiner@wauwatosa.net

Ms. Christy Bachmann, P.E.

Principal Engineer
 City of Madison
 210 Martin Luther King Jr. Blvd.
 Madison, WI 53703
 608-266-4095
cbachmann@cityofmadison.com

Mr. Deron Muehring

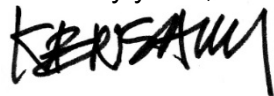
Civil Engineer
 City of Dubuque
 50 West 13th Street
 Dubuque, IA 52001
 563-589-4270
dmuehrin@cityofdubuque.org

Your request for proposal points toward an April 2018 completion, with a January 2018 start. We can commit to this schedule provided we hit the ground running with topo survey in hand as planned. This gives us +/- 30 days per phase with face to face meetings and workshops on a monthly schedule. This will be aggressive, but achievable.

I have attached a spreadsheet that outlines tasks and fee according to the process and meetings you've specified in your request for proposal, but in brief, the Inventory and Analysis phase, including an on-site input workshop, the Conceptual Design and Design Refinement phase, including the escalating alternatives strategy, the public review workshop and final concept; and the Design Development phase including the selection of materials and fixtures and final deliverables. As you request, the fee reflected in the attached spreadsheet would be a not to exceed amount.

Please feel free to contact me if you have any questions or desire additional information. We are looking forward to speaking with you.

Sincerely yours,



Ken Saiki
 President, Ken Saiki Design, Inc.

DESIGN SERVICES - James St. Streetscape Conceptual Design-Design Development

Saiki Design-Landscape Architects 10-25-2017

Task Description	Principal II	Land. Arch. II	Designer II	Designer I	Comments
	\$160.00/hr.	\$125.00/hr.	\$100.00/hr.	\$85.00/hr.	
PHASE 1 - INVENTORY AND ANALYSIS					
Task 1 - Assessment, Area Analysis, Preliminary Design	2		4	8	conf. call, background research
Task 2 - On Site meeting #1 - Kick-off	8		8		meeting w/ city staff.
Task 2 - On Site meeting #2 - Stakeholder Group	8		16	12	stakeholder group input session, visual preference survey, start 3D model
Project Management and Coordination	2		4		issue meeting minutes and visual preference survey, general coordination
SECTION SUBTOTALS	20	0	32	20	
	\$3,200.00	\$0.00	\$3,200.00	\$1,700.00	
			SUBTOTAL	\$8,100.00	
DESIGN REFINEMENT					
Task 3 - Conceptual Design	4		40	40	3 plan options, cost ranges
Task 4 - On Site meeting #3	12		20	8	city staff meeting, public workshop, council presentation, products for use in online survey. Includes preparation
Task 5 - Final Conceptual Design	2		20	20	incorporate public and design team input into a preferred concept
Project Management and Coordination	2		4		schedule public meeting, general coordination
SECTION SUBTOTALS	20	0	84	68	
	\$3,200.00	\$0.00	\$8,400.00	\$5,780.00	
			SUBTOTAL	\$17,380.00	
DOCUMENTS (Task 6)					
Utility plans	4				
Preliminary grading	4		12		
Hardscape plan	2		12		
Landscape plan			12	4	
Site lighting and details, identify fixtures	4		8		
Details	4		20	12	site features
Specifications		12			site furnishings
Deliverables				4	print and ship 2 drawing sets and specs. Email pdf of all files
Project Management and Coordination	2	2	4		
SECTION SUBTOTALS	20	14	68	20	
	\$3,200.00	\$1,750.00	\$6,800.00	\$1,700.00	
			SUBTOTAL	\$13,450.00	
REIMBURSABLE EXPENSES					
	miles	meals	lodging		
Mileage	800			\$ 428.00	3 trips to DePere
Travel				\$ -	
Meals		8		\$ 160.00	8 meals for travel days
Printing & Shipping				\$ 100.00	allowance
SECTION SUBTOTAL				\$688.00	
TOTAL BASE DESIGN FEE				\$39,618.00	

Attachment: Saiki_Design (6484 : Consider Approval of the James Street Streetscape Design Services*)

Firm Profile



Ken Saiki Design is an award winning, specialty landscape architecture firm based in Madison, Wisconsin. Organized in 1989, the company provides services to both public and private clientele with project locations throughout the State of Wisconsin and the Upper Midwest.

The creation of high quality spaces is central to our practice. Our work spans multiple sectors and our team has delivered high-quality design services for public, private and joint-venture clients. Our built work can be found in botanical gardens, retail development, corporate campuses, university campuses, mixed use and residential developments. We pride ourselves on the ability to work from the master plan scale down to the detailed design, where the personal experience of a space and its surroundings comes to life.

We treat all of our projects as unique challenges. We do not apply previously developed solutions, although we lean heavily upon the collective wisdom and experience of our own staff, our collaborators and clients. We are an office with over 100 years of combined staff experience; our team is comprised of licensed landscape architects, LEED accredited professionals, landscape designers with degrees in landscape architecture, master gardeners and student interns.

We know that we are practicing in a world that is changing. Therefore, we are committed to continued learning and teaching and our staff regularly attend local and national conferences and workshops. Ken Saiki Design is a Certified Minority Business Enterprise (MBE), and is committed to equal employment opportunities for all individuals.

For more information explore: www.ksd-la.com

Streetscape Design Portfolio



Ken Saiki Design understands the many intricacies of streetscape and community design; the balances between durability, budget and aesthetic improvement. We also understand that we affect the places where people live and work; often the source of their livelihood. Our design process promotes an understanding of the issues and invites the involvement of those most directly impacted.

Successful design comes down to the details. The integration of different materials and components, custom and “off the shelf” and attention to the ways in which these are installed can be the difference between average and excellent. Solutions are always the integration of existing and proposed. The preservation of existing elements within a reconstruction is challenging, but often becomes the key part of making an expression of the community and neighborhood.

Ken Saiki Design has worked closely with numerous municipalities in Wisconsin and with the Wisconsin Department of Transportation on a number of streetscape projects including:

- State Street Reconstruction, Madison, WI
- State Capitol Park Promenade Reconstruction, Madison, WI
- First Street Reconstruction, New Glarus, WI
- Stationside Streetscape, Kenosha, WI
- Northwestern Avenue Reconstruction, Racine, WI
- Washington Avenue Streetscape Design Guidelines, Cedarburg, WI
- Monument Square, Racine, WI
- Reedsburg Streetscape, Reedsburg, WI
- Main Street, Monroe, WI
- Monona Drive Reconstruction, Monona, WI
- US 41 Reconstruction and Roundabout Design, Brown and Winnebago Counties, WI
- Mount Horeb County Highway ID Reconstruction, Mount Horeb, WI



Ken Saiki Design (KSD) is working with the City of Wauwatos, WI on a multi-phase, multi-block streets reconstruction and urban open space redevelopment in downtown Wauwatos, called, the Village in Wauwatos. The Village is home to historic buildings, a vibrant restaurant environment, an actively redeveloping and infilling urban neighborhood.

The epicenter of the Village is at the confluence of State Street, Harwood, Underwood and Wauwatos Avenues. All of these streets are part of the street reconstruction project.

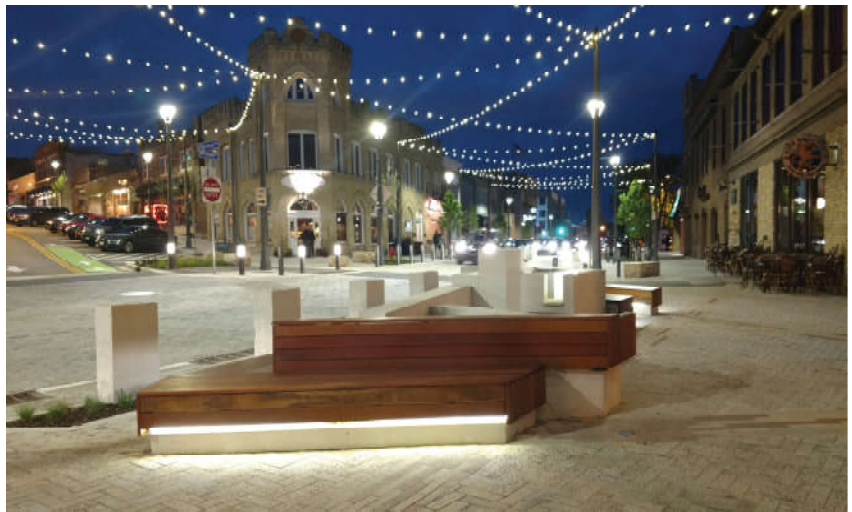
Phase I, which has just completed construction has transformed what was an automobile-dominated environment into a pedestrians first urban space where outdoor dining, merchandising and special events supplant vehicular circulation and convenience.

A “shared street” concept of curbless streets and modular paving from building face to building face provides a contiguous plaza that is transformed each year into a non-vehicular space for an annual festival. Strategically placed planters, street furniture and water feature guide vehicles while providing pedestrian amenity. A cantenary light canopy gives the plaza a ceiling of lights. Custom way-finding signs provide accent and help to carry a contemporary aesthetic through building stock of multiple generations.

Subsequent phases are in various stages of design and construction with completion of the project scheduled for 2020.

303 S. PATERSON
SUITE ONE
MADISON, WI 53703
Phone: 608-251-3600
www.ksd-la.com

PEOPLE | LAND | PLACE



Attachment: Saiki_Design (6484 : Consider Approval of the James Street Streetscape Design Services*)

The Village Redevelopment

Wauwatosa, Wisconsin



3D Visualization of Proposed Streetscape Enhancements on West State Street

Ken Saiki Design played an integral role in developing a comprehensive streetscape master plan and subsequent construction documents three separate phases of redevelopment of West State Street, known as “The Village” in downtown Wauwatosa, Wisconsin. The project design team was led by GAL Consultants and R.A. Smith National; lighting design and electrical engineering by Powrtek Engineering. Through a series of public workshops and streetscape steering committee meetings, a new and exciting vision for The Village emerged that focused on enhancing its place as a unique dining and shopping destination within the greater Milwaukee area. Building on the groundwork laid during the master planning process, Ken Saiki Design worked as part of a multi-disciplinary team to craft a design that accomplished an elegant, modern update while enhancing and celebrating the existing historic character of The Village. Careful attention was paid to the selection of streetscape materials compatible with extant architectural features in The Village as well as natural elements found along the nearby Menomonee River. An interactive water feature serves as the focal point of a pedestrian plaza that is flanked by existing outdoor dining space. Harwood Avenue was realigned to enlarge public greenspace just north of State Street. Pocket Park was elevated to create a civic ceremonial space overlooking The Village while Root Common Park was lowered to form a bowl-like amphitheater.

The streetscape enhancements address pedestrian safety and vehicular access through unique design strategies including the creation of a raised European style curbside plaza, reverse-angle parking, shared-use flexible outdoor spaces, designated bike lanes and the use of high-quality materials. Concrete pavers, street furniture, accent lighting, limestone seating and plantings are repeated along the corridor to unify and enhance the pedestrian experience and tie multiple phases together. Silva cells and specialized soil blends optimize growing conditions for street trees and planting beds. Amenities within the parks include a WWI veteran’s memorial, a children’s play area, raised platform seating and stage areas, sloped lawns, looped accessible paths, intensely planted edges and multiple overlook opportunities.

The design team continues to collaborate with the City of Wauwatosa, the Village Business Improvement District and key stakeholder groups in the fourth phase of design and construction which will include an integrated wayfinding system, a multi-use trail and pedestrian crossings of State Street and the adjacent railroad corridor, and the continuation of streetscape design elements envisioned in the initial master plan and implemented in the first three phases of this in



The State Street corridor contains flexible spaces designed for the many functions and activities of a vibrant city. These spaces are both functional when used and fully occupied, and beautiful when not. They are, “Artful Places” that enrich the business, residential, recreational and workplace environment that is downtown Madison.

The flanking spaces at the east end of State Street are prime examples. The Carroll Street end space is home to the “Forum of Origin” sculpture. The plaza space is utilized by vendors of all types for various events, street performers, planned music performances, formal and informal gathering.

Ken Saiki Design also led the renovation of Elizabeth Link Peace Park, completed as a separate project with a separate process. The renovated space provides a public urban park for all people in the community.

The street ends at Francis Street connect State Street to adjoining neighborhood businesses, parking and residential uses. One Francis Street space was renovated to create a small, informal gathering and performance space. The other Francis Street end is home to the “Four Lakes” sculpture, commissioned after the completion of State Street reconstruction.



Jazz at Five Performance and Vendors at Carroll Street End Plaza



Elizabeth Link Peace Park



Francis Street

Attachment: Saiki_Design (6484 : Consider Approval of the James Street Streetscape Design Services*)

State Street Reconstruction Madison, Wisconsin



State Street, Ken Saiki Design

Ken Saiki Design was part of a multi-disciplinary team responsible for multiple phase, final design and construction documents for State Street in Downtown Madison, Wisconsin. State Street is a pedestrian and public transit corridor between the State Capitol and the University of Wisconsin-Madison and has become a major retail, restaurant, social center and destination for the community and visitors alike.

Ken Saiki Design worked with a multi-disciplinary team to formulate custom lighting designs; create a single, unifying district identity; design special public spaces; and integrate public art into the streetscape and pocket parks. Ken Saiki Design was responsible for overall streetscape design concepts and construction documents related to tree preservation, plantings, and street furniture.

The strength of the design lies in its pedestrian focus and simplicity. The success of the project is tied to the community involvement and consensus building facilitated by the design team.

Attachment: Saiki_Design (6484 : Consider Approval of the James Street Streetscape Design Services*)

State Street Reconstruction at Library Mall Madison, Wisconsin



The Illuminated Capitol Dome Terminates the View from within the Plaza, Ken Saiki Design

State Street is a reflection of the City of Madison's diversity and vibrant lifestyle, and it is a destination for residents and visitors alike. The corridor travels eight blocks, connecting the University of Wisconsin to the Wisconsin State Capitol, formalizing the connection between 'town and gown' that is so important to the City. The renovation of the 700 and 800 blocks of State Street embodied the spirit of the City in a urban open space that boasts shared platforms for public speech, street performance spaces, and special events.

The design team worked diligently to preserve the cherished elements of the existing streetscape and Library Mall but placed an equal emphasis on restoring views to many of the City's most iconic features, including the Wisconsin State Capitol, Bascom Hill, Lake Mendota and UW-Madison's East Campus Mall which had been all but lost over years of piece-meal renovation and encroachment by outdated site features. The design outcome was a unified, integrated public plaza that still provides spaces for ad-hoc performance and pontificating but adds an elegant and timeless character through integrated custom seating, accent lighting, moveable tables & chairs, custom bar-height tables, plantings, and public art.

The strengths of this project build upon the key attributes of the entire State Street reconstruction, a series of projects spanning over ten years, by facilitating community involvement and consensus building, retaining a pedestrian focus and utilizing simple, timeless materials. Ken Saiki Design was part of a multi-disciplinary team responsible for planning, design, and final construction documents for this iconic and award-winning project.

State Capitol Promenade Reconstruction

Madison, Wisconsin



Capitol Park and Promenade, Ken Saiki Design

Ken Saiki Design completed design and construction documents for the phased reconstruction of the State Capitol Promenade. The design, conceptualized in the Capitol Park Rehabilitation Master Plan, was sympathetic to the original John Nolen plan of 1911 and also provided for the high level of activity and diversity of use of Capitol Square Promenade and Park.

The design and detailing simplified and organized pedestrian activity zones while integrating Homeland Security measures and enhancing tree plantings. The promenade reconstruction was a significant step in the overall restoration of Wisconsin's State Capitol.

Ken Saiki Design continued to work at the State Capitol by assisting with planning and coordination to restore the Capitol Park bluegrass lawn, an effort that included a complete renovation of the Park's irrigation system. Ken Saiki Design also prepared a tree inventory and forestry management master plan and tree inventory database. The plan and supporting database provided Capitol Park staff with valuable information on conducting regular tree health assessments, making updates to keep tree inventory current; the plan also includes guidelines for future replacement operations.

Cannery Square Sun Prairie, Wisconsin



Cannery Square, Ken Saiki Design

Ken Saiki Design collaborated with architects, developers, city staff, local businesses and residents to create a successful urban park and revitalize a neighborhood. The location for Cannery Square in Sun Prairie, Wisconsin was once the center of railroad-based commerce but had been under utilized and poorly maintained. A mixed use redevelopment scheme took advantage of its central location to bring new life to the streets and open spaces at the heart of the project.

The urban revitalization and development of the Cannery Square open space immediately attracted new businesses and residents to the area. Cannery Square is now an integral part of the public open space that enhances the quality of urban life for downtown residents, businesses and visitors.

New Glarus Streetscape

New Glarus, Wisconsin



First Street in Downtown New Glarus, Ken Saiki Design

Ken Saiki Design and Strand Associates developed design and construction documents for a new streetscape in downtown New Glarus. The streetscape design accentuated the Swiss historic heritage of the Village and enhanced the downtown pedestrian environment. Wider sidewalks, pavers, street trees and theme lighting all contributed to a new look for the downtown. The design of First Street provided for the street's ability to be transformed into a festival plaza setting for special events.

The streetscape project was implemented through a TEA-21 enhancement grant and as part of a state highway improvement project. The design process actively engaged citizen participation to ensure that the reconstruction project was an expression of the Village, its history and the community.

Monument Square Reconstruction Racine, Wisconsin



Monument Square at Twilight, Ken Saiki Design

Ken Saiki Design led a multi-disciplinary team to complete design development and bidding and construction documents for the reconstruction of Monument Square in downtown Racine, Wisconsin. The public open space in the heart of downtown Racine is organized around the iconic Racine Civil War Monument, a Wisconsin Historical Marker and defining element of the space.

The project design closely followed the schematic design prepared by Crandall Arambula, within a reduced budget and extremely aggressive design and construction schedule. Bidding documents were completed within six weeks, and the cost for construction was reduced from the schematic design estimate by nearly half. Work on Monument Square was substantially complete by the end of a single construction season.

Monument Square is an historic space in downtown Racine that had gone through a number of iterations and face lifts over the years. The work that Ken Saiki Design completed finally provides a flexible space for events while maintaining circulation, parking and casual seating for everyday use.

Menasha Pedestrian Connection

Menasha, Wisconsin



Pedestrian corridor acting as an 'outdoor living room', Ken Saiki Design

Ken Saiki Design worked directly with the City of Menasha to envision an urban pedestrian connection between the Broad Street Parking Ramp to Main Street, including additional pedestrian safety crossing accommodations on Mill Street and Main Street.

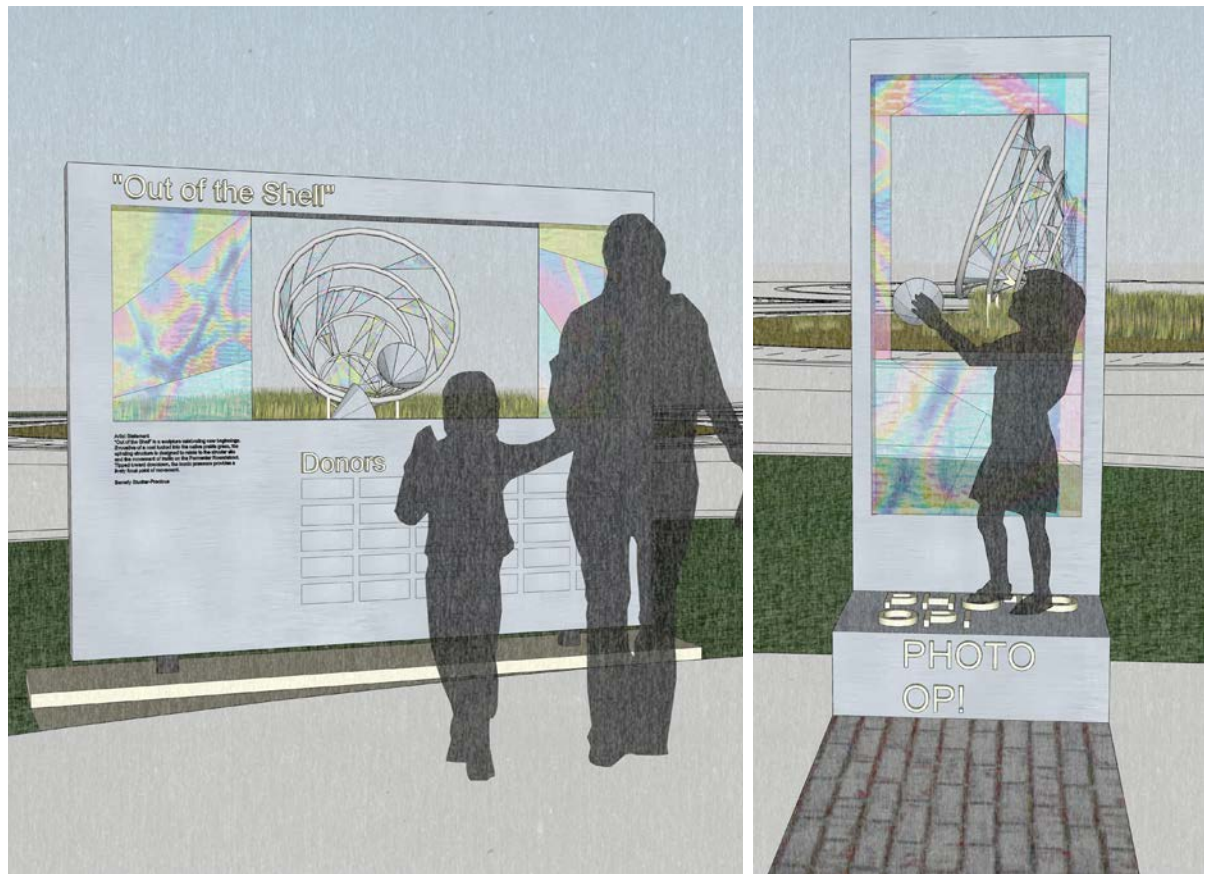
Developing a vision for the space as more than a pedestrian cut-through, but also a destination, was key to community and business owner support of the use of the parcel as an unbuilt, public space. Attention to detail in the paving, re-use of limestone materials, and creation of attractive elements like a custom community table for ad hoc seating or organized events supported the idea that the space was an outdoor living room and gathering space as much as it was a pedestrian corridor.

With very little survey or base information, landscape architects at Ken Saiki Design met an aggressive design schedule for construction documents, delivering plans and specifications for standard pavements, table top crossings, curb modifications, seating, lighting, custom fabricated site specialty items, plantings, and specialty pavements.

Attachment: Saiki_Design (6484 : Consider Approval of the James Street Streetscape Design Services*)

Donor Gallery Wall, Unbuilt Work

Middleton, Wisconsin



Aluminum Cabinets Frame Views of the Roundabout Sculpture, Ken Saiki Design

Ken Saiki Design worked with the City of Middleton and Middleton Arts Committee to develop a donor recognition concept to support “Out of the Shell”, a commissioned metal and glass sculpture by artist Beverly Stucker Precious of Precious Design Studios. The sculpture will be sited in the center of a heavily-trafficked roundabout at one of the most prominent entry points to the City. The City wanted to expand the project and provide a series of viewing opportunities for pedestrians using the sidewalks and multi-modal paths that circumvent the roundabout, enabling users on foot and bicycle to pause and interact with the sculpture in some fashion without crossing into the vehicular roadway or physically accessing the sculpture’s location.

The design team at Ken Saiki Design envisioned a series of aluminum cabinets for the pedestrian node that would artfully frame views of the sculpture from several vantage points and would also provide integrated donor recognition opportunities. The gallery-style installation would offer bench seating, child and wheelchair accessible window heights and stepped “photo op” platforms from the safety of the peripheral sidewalks. Designed to complement the artist’s use of materials, dichroic glass echoed in the donor frames creates another colorful perspective and tangible installation for pedestrians.

Wauwatosa Veterans Memorial, Unbuilt Work

Wauwatosa, Wisconsin



Rendering of WWI Veterans Memorial, Ken Saiki Design

Ken Saiki Design worked closely with Village of Wauwatosa to create a landscape design incorporating a series of unique memorial elements for the Wauwatosa Veterans Memorial in Root Common Park. The project site serves as a place of remembrance and recognition for all veterans and their families and pays special tribute to three WWI veterans originally honored in that location.

Designed to evoke the experience of a trench, the memorial is flanked by weathered steel walls on either side of the path, providing respite from the street. The east wall honors the WWI Wauwatosa veterans originally honored in the park and incorporates backlit text written in WWI along with the soldier's names. Masses of poppies were incorporated into the plant palette to evoke the field of poppies from "In Flanders Fields", the poem selected as the inscription for the wall. The west wall is a tribute to all veterans and is punctuated by light columns as the visitor progresses closer to Root Common Park. There are several internally lit seating opportunities within the memorial space and radiating paving pattern connecting the memorial to the rest of the park.

Ken Saiki Design provided 3-D modeling and rendering for the City of Wauwatosa to present to the Village Streetscape Steering Committee and Veteran's Association, to aid in general fundraising efforts and gain input on text selected for the walls.



Ken Saiki, PLA
Landscape Architect

Education

Bachelor of Science, Landscape Architecture
University of Wisconsin, 1979

Registration

Wisconsin: Landscape Architect: 76-14 [1995]
Minnesota: Landscape Architect: 16840 [1984]
Iowa: Landscape Architect: 271 [1989]

Recent Work

- Downtown Wauwatosa Streetscape Design, Wauwatosa, WI
- Middleton Community Veterans Tribute Site Design, Middleton, WI
- American Players Theater, "Up the Hill" Site Renovation, Spring Green, WI
- Bee Branch Creek Restoration Master Plan and Open Space Development, Dubuque, IA
- UW-Madison Picnic Point Site Renovations, Madison, WI
- UW-Stout Memorial Student Center Addition Site and Planting Design Menomonie, WI
- UW-Madison School of Nursing Site and Planting Design, Madison, WI
- Central Park Master Plan and Phase I Implementation, Madison WI
- Elizabeth Link Peace Park Renovation, Madison, WI
- State Capitol Park Rehabilitation Master Plan, Madison, WI
- State Street and Library Mall Reconstruction, Madison, WI
- University of Wisconsin-Green Bay Campus Master Plan, Green Bay, WI
- University of Wisconsin-Madison Campus Master Plan Consulting, Madison, WI
- UW-Oshkosh Campus Master Plan Update, Oshkosh, WI
- UW-Madison School of Human Ecology Site and Green Roof Design, Madison WI
- UW-Madison Wisconsin Energy Institute Site and Planting Design, UW-Madison
- Olbrich Botanical Gardens Master Plan, Madison, WI
- UW-Madison Lakeshore Nature Preserve Master Plan, Madison, WI
- Monument Square Reconstruction, Racine, WI

Related Experience

- Project Review Committee, The American Center, Madison, WI 1999-present
- Zoning Ordinance Re-write Committee, City of Madison, 2008-2010
- Lisa Link Peace Park Advisory Committee, City of Madison, 2003-2004
- Urban Design Commission, City of Madison, WI, 1991-1999
- Lectureship, University of Wisconsin, Department of Landscape Architecture: Housing and Urban Design, 1998
- Lectureship, University of Wisconsin, Department of Landscape Architecture: Professional Practice, 1991 and 1992
- Site Planning Seminar, University of Wisconsin, Department of Urban and Regional Planning, 1993, 1994, 1995, 1997

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 www.ksd-la.com

- Lectureship, University of Wisconsin, Department of Landscape Architecture: Landscape Architectural Technology II, 1990

Julia Schilling
Landscape Designer

Education

Bachelor of Science, Landscape Architecture

University of Wisconsin, 2015

Bachelor of Fine Art, Sculpture

Milwaukee Institute of Art and Design (MIAD), 2008

Recent Work

- Village Redevelopment Streetscape and Park Design, Wauwatosa, WI
- Veterans' Memorial Park, Wauwatosa, WI
- Attic Angel Place, Garden relocation and renovation, Madison, WI
- Maple Grove Apartments Natural Playscape Design, Madison, WI
- 1000 E Washington Ave, Green Roof Concept Design, Madison, WI
- Dettmann Vineyards Master Plan, Cross Plains, WI
- Junction Road Apartments Courtyard and Planting Design, Madison, WI
- UW-Whitewater Drumlin Hall Site and Planting Design, Whitewater, WI
- UW-Stevens Point Chemistry-Biology Building Planning Graphics, Stevens Point, WI
- Private Residence Master Plan and Concept Design, Fitchburg, WI
- Private Residence Concept Design and Site Design, Madison, WI
- Temple Beth El Presentation Graphics, Madison, WI
- Kimberly-Clark Presentation Graphics, Neenah, WI

Related Experience

- Ken Saiki Design, 2014-present
- Public Art & Design, Regent Neighborhood Underpass, 2014-present
- Northwestern Mutual Campus Connection Master Class, 2013-present
- Natural Heritage Inventory Assistant, Department of Natural Resources, 2012-2014
- Internship, Marek Landscaping LLC., 2013
- Gallery management, White Whale Artist Collective, Milwaukee 2007-2009
- Public Art Conservator, MIAD, 2008
- Cabinet Maker, MIAD 2005-2007

Memberships

American Society of Landscape Architects (ASLA)

Awards

- 2015 WIASLA Merit Award for Un-built Works, McKinley Marina and Waterfront Master Plan, Milwaukee, Wisconsin
- WIASLA Student Award finalist, 2015
- Design 2015: Juried Student Design Concepts, Best in Landscape Architecture

James Street Streetscape

CONCEPTUAL DESIGN & DESIGN DEVELOPMENT
CITY OF DE PERE, WISCONSIN

October 30, 2017



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October 30, 2017

Attention

Mr. Bill Boyle, PMP, GISP
Project Manager
City of De Pere–Economic Development & Planning Department
335 South Broadway Street
De Pere, WI 54115

Reference James Street Streetscape Conceptual Design & Design Development

Dear Mr. Boyle and the Evaluation Committee:

Our team is excited about this opportunity to help re-imagine a public space in the heart of downtown De Pere! At Stantec, we believe that great design makes our cities more livable, equitable and sustainable. That's why we strive to create spaces that connect people to that place, to prosperity and to one another. The attached proposal outlines our creative approach for developing conceptual plans, engaging key stakeholders and producing 60% Construction Drawings for the section of James Street between N Broadway Street and N Wisconsin Street.

Landscape architect and urban planner, Sarah McDonald, PLA, CLARB, ASLA, will lead the team. Sarah's professional experience spans the realm of urban design, landscape architecture, and green infrastructure for a wide range of project markets. Michelle Garrigan, P.E., brings 21 years of local experience designing roads that incorporate pedestrians, bicyclists and amenities. Mike Bach, P.E. has more than 10 years of experience in the field of civil engineering with expertise in stormwater management, grading and earthwork balance, utility design and site planning. Todd Wichman, PLA brings over 32 years of experience in landscape architecture, with diverse planning and design experience in both the public and private sectors. Our team has the passion, vision and experience to develop a plan that meets the City's needs.

Gathering information and generating excitement within the community about the potential for this space early in the process is key to creating an inviting, functional, and sustainable space. We will work with the City to identify and gather input from key stakeholders, including residents, business owners, community groups and visitors. Our experienced team will use this input to design inspiring visions that fit within the desired budget for the project. We have already begun brainstorming ideas to make James Street an attractive and memorable gathering space that serves as a destination for residents and visitors alike, and look forward to the opportunity to advance those ideas with you and your community!

Should you have any questions or want additional information as you review this proposal, please do not hesitate to contact our project manager, Sarah McDonald. We look forward to the opportunity to work with you and the community on the placemaking of James Street.

Sincerely,

STANTEC CONSULTING SERVICES INC.



Kevin Kimmes, PE
Associate
(262) 643-9015
kevin.kimmes@stantec.com



Sarah McDonald, PLA, CLARB, ASLA
Project Manager
(262) 665-9774
sarah.mcdonald@stantec.com

Attachment: Stantec (6484 : Consider Approval of the James Street Streetscape Design Services*)



Statement of Qualifications

Our Firm, Your Team

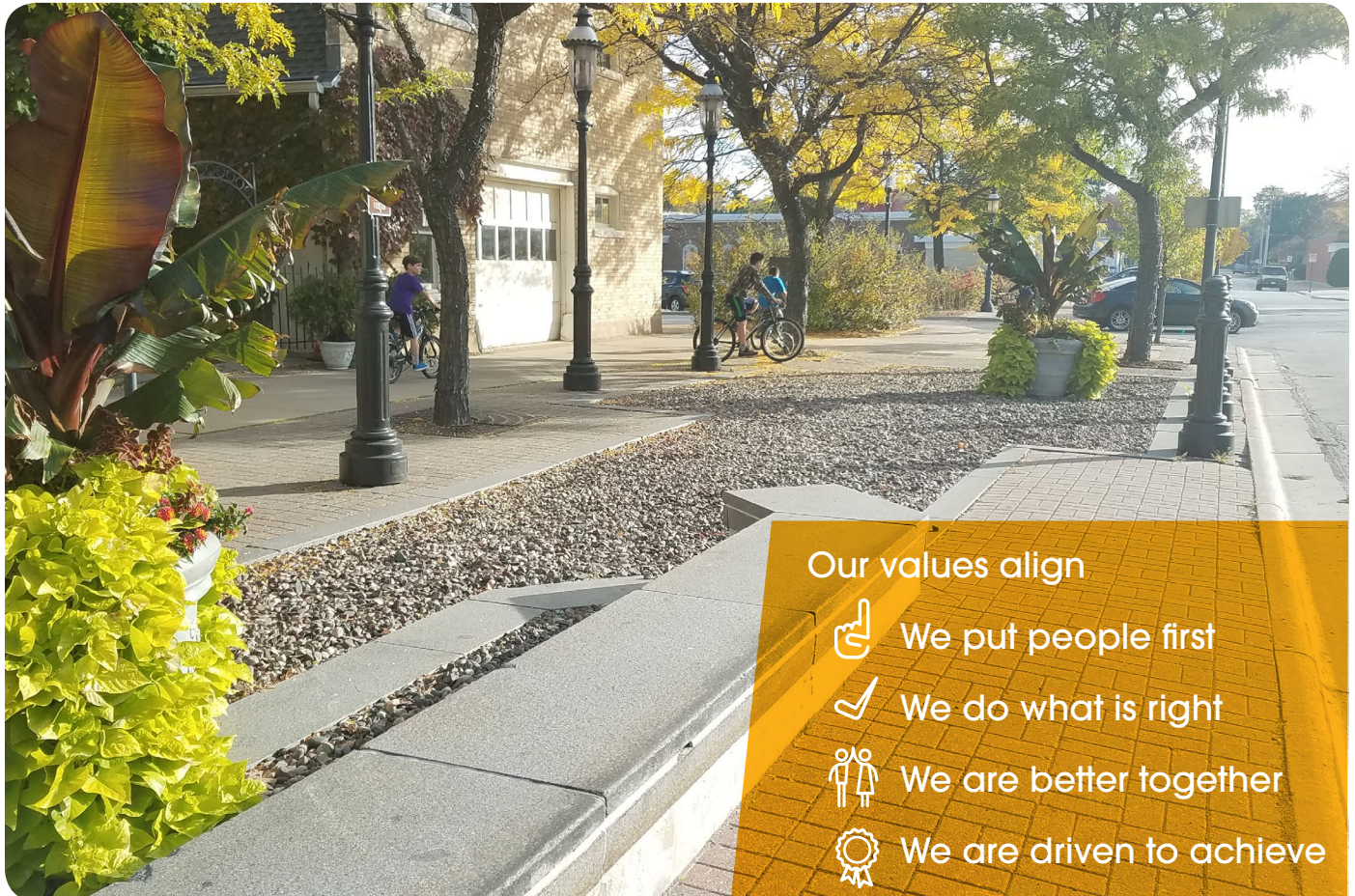
We're active members of the communities we serve. That's why at Stantec, we always design with community in mind. The Stantec community unites approximately 22,000 employees working in over 400 locations across six continents. We collaborate across disciplines and industries to bring buildings, energy and resource, environmental, and infrastructure projects to life. Our work—engineering, architecture, interior design, landscape architecture, surveying, environmental sciences, project management, and project economics, from initial project concept and planning through design, construction, and commissioning—begins at the intersection of community, creativity, and client relationships.

Our local strength, knowledge, and relationships, coupled with our world-class expertise, have allowed us to go anywhere to meet our clients' needs in more creative and personalized ways. With a long-term commitment to the people and places we serve, Stantec has the unique ability

to connect to projects on a personal level and advance the quality of life in communities across the globe.

Locally Rooted with Global Expertise

With offices in De Pere, Mequon, Cottage Grove, and St. Paul, we are not only your partners in this planning process, but we're also your neighbors. This means we can attend site visits and meetings with stakeholders, local agencies, and your contractor at each project milestone. We're flexible. Our number one priority is making sure your project depicts your vision and obtains all required approvals.



Project Understanding

We understand the value of this section of James Street as a gateway into Downtown. On the north side of James Street is the Union Hotel and Restaurant, an intact example of Late Victorian commercial design and a registered Historic Place. To the south is The Lee Building, a recently redeveloped property with several commercial retailers. Further to the east James Street is bookended by parking lots that support the surrounding uses. These parking areas support local businesses, including the especially popular Seroogy's Chocolate. The De Pere Downtown Plan calls for a "Walk of Chocolate" to allow pedestrians to safely move around the area. The Downtown is host to a variety of festivals throughout the year, including, Seroogy's Valentine Run and Celebrate De Pere over the Memorial Day weekend. The parking lots and James Street serve as a connection to Voyageur Park and serve as an extension of all festivities downtown.

For over 30 years, a water fountain delighted residents and visitors and served as the focal point for public gathering downtown. Unfortunately, in 2017 the fountain had reached the end of its useful life and was decommissioned. The loss of this feature prompted stakeholders and city staff to act and work to create a new public space on James Street.

We understand that the City would like the consultant to explore three concept alternatives.

- We consider option one to be the baseline design of the three concepts. This option heavily considers costs and includes basic improvements to seating, tree and planting enhancements.
- The second option explores the addition of features that would make the space more unique and appealing, perhaps the addition of another water feature, public art or interactive amenity.



Opportunity and Constraint: Mature trees on the north side of James Street provide shade and a sense of place but limit the design to some degree.

- The third and final option includes the unlimited exploration of creativity and design of the space that could make James Street a very special place.

Why Stantec

We are always striving to make a difference in the world by improving the communities we live in. We believe that the James Street Streetscape project is a great opportunity to do so in the Greater Green Bay metropolitan area. That's why we have been very careful to select team members that are right for this project, are available to start immediately, and can dedicate their effort and enthusiasm in order to produce the best possible outcome. Our senior leaders are committed to supporting the team and they will do whatever it takes to always have the required people and resources in place.

Your Project Manager, Sarah McDonald, PLA, CLARB, ASLA, developed placemaking streetscape improvements on Main Street in Wisconsin Dells. This River Arts District streetscape features unique curvilinear masonry stone seat walls with precast caps and mosaic tile inset, equipped with decorative lighting and charging stations, custom paver pattern and site furnishings. Stakeholder interviews, surveys, public presentation, public input and engagement and design charrettes are staples of projects that Sarah has worked on.

Michelle Garrigan, P.E., brings 21 years of local experience designing roads that incorporate pedestrians, bicyclists and amenities. She was the project manager of the recently constructed Humboldt Road on the northeast side of Green Bay with on-street bike lanes and sidewalk on the north side.

Mike Bach, P.E., has more than 10 years of experience in the field of civil engineering with expertise in stormwater management, grading and earthwork balance, utility design and site planning.

Todd Wichman, PLA brings over 32 years of experience in landscape architecture, with diverse planning and design experience in both the public and private sectors. Our team has the passion, vision and experience to develop a plan that meets the City's needs.

James Street Opportunities

While there are many possibilities we will explore, we see three overarching opportunities that can be incorporated into the James Street design to create a special place. Those three are; flexible people spaces, smart streetscape elements, and creating a strong sense of place.

Flexible People Spaces

People want their communities to be attractive, exciting, engaging, healthy and social places. Variety and flexibility are two key sources of thriving urban environments. James Street can further support existing businesses, local culture and expand its offerings by creating a flexible space that can be modified to accommodate a host of functions. Parking is an important factor and it doesn't have to be an unattractive environment. In the Netherlands, these spaces are called "Woonerf's" or living streets, where space is shared. Imagine a James Street that is a destination in it's own right, feels like a park or plaza, and improves the Downtown as a whole. It can be open to daily traffic and closed during events.

Smart Streetscape Elements

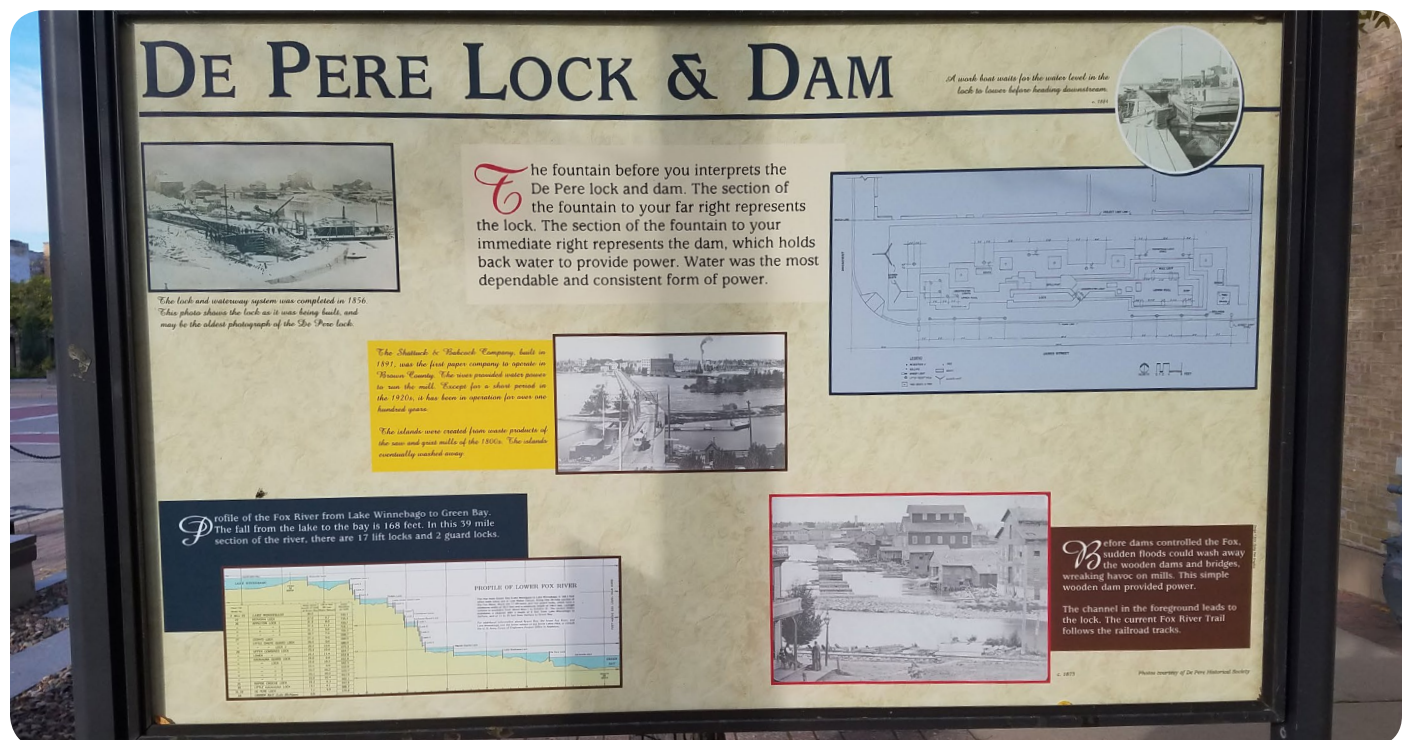
Streetscapes can also be smart, they can save, even produce energy, create hot spots for connectivity or charging, turn on/off lights, tell you when the trash and recycling needs to be removed, allow for educational experience via smart phones or monitor rainfall and stormwater collection.

Imagine a James Street with trash cans that notify staff when they are full, lights that dim during late evening hours to conserve energy or an outdoor office where people can work in the open air because there is wi-fi and charging stations or an interactive space that uses mobile technology to discover and engage visitors with stories.

Sense of Place

The James Street Fountain has long added to the unique sense of place in Downtown De Pere and it's important that the new design makes a similar impact. Extraordinarily attractive environments that allow people to have a great time, leave people with positive and memorable experiences. These experiences are shared with others and become free advertisements for the City and give residents a sense of pride.

Capitalizing on the unique natural, physical, historical and cultural resources that define De Pere will only enhance the sense of place along James Street. Imagine a James Street that once again pulls inspiration from the Fox River and the Lock and Dam, the Union Hotel, Seroogy's Chocolate or another significant local element. With the addition of locally sourced materials James Street would be like none-other.



TEAM BIOGRAPHIES



Sarah McDonald, PLA, CLARB, ASLA

Sarah has a passion for designing spaces that improves the relationship between people's quality of life and the built environment. Her experience includes parks and open spaces, outdoor comprehensive master plans, streetscapes and downtown redevelopment plans. Sarah loves all aspects of project work: from site inventory and analysis, concept design and graphic generation, report production and graphic design, construction documentation and specifications to construction administration and observation.

EDUCATION

MS Urban and Regional Planning, University of Wisconsin-Madison, Madison, WI, 2012

BS Landscape Architecture, University of Wisconsin-Madison, Madison, WI, 2008

REGISTRATIONS

Council of Landscape Architectural Registration Boards

Licensed Landscape Architect: State of Wisconsin

Relevant Projects

Cafe Zones/Streetscaping, Wisconsin Dells, WI
 Fond du Lac Loop Landscape Master Plan, Fond du Lac, WI
 Streetscaping, Cross Plains, WI
 Wilson Drive, Shorewood, WI
 Vincent Street Gateway, St. Croix Falls, WI
 Pulaski Road Streetscape Improvements, Alsip, IL West
 Dundee Downtown Plan, West Dundee, IL



Michelle Garrigan, PE

Michelle's experience includes civil and transportation projects encompassing roadway, and noise wall plans; managing corridor studies; preparing environmental documents; coordinating communications with agencies, utilities, and railroads; and coordinating public involvement activities. She has led urban design projects involving rails to trails, highway expansion, and historical impacts. Michelle works in our De Pere office, and is readily available to support Sarah on this project.

EDUCATION

BS Civil Engineering, Michigan Technological University, Houghton, MI, 1991

REGISTRATIONS

Professional Engineer: WI, MI, IL

Relevant Projects

Humboldt Road, Green Bay, WI
 Allouez Avenue, Green Bay, WI
 Lovers Lane, Franklin, WI
 Clyde Hill Road, Casco, WI
 Silver Spring Drive, Milwaukee, WI



Michael Bach, PE

Mike brings over 10 years of experience in environmental and civil engineering, site assessments, site developments, entitlements, due diligence, and overall project management. He is a licensed professional engineer utilizing technical skills and strong communication to provide clients with exceptional project delivery. His responsibilities have included: Stormwater BMP Design and Green Infrastructure, Project Management, Business Development, Contract Administration, Plan Reviews, Wet Utility Design and Modeling, Utility Infrastructure Analysis, Environmental & Water Resource Engineering, Drainage Studies & Design, Various Modeling Software Experience, and Civil 3D.

EDUCATION

BS Environmental Engineering, UW-Platteville, 2007

REGISTRATIONS

Professional Engineer: WI, CO, ND

Relevant Projects

Utility Infrastructure Analysis–Kohler/Sheboygan, WI
 1801 East Washington Redevelopment, Madison, WI
 Beacon Avenue Cottages, New London, WI
 The Reserve at Mayfair, Wauwatosa, WI
 Walgreen's Corporation, Utility Improvements and Parking Expansion, Deerfield, IL



Todd Wichman, FASLA, PLA

Todd brings more than 30 years of experience in landscape architecture and urban design with diverse planning and design experience in both the public and private sectors, and is a respected peer within the landscape architecture community. Todd is a licensed landscape architect in Wisconsin. Todd's recent streetscape work includes projects in the Minnesota communities of St. Cloud, New Hope, Rochester, Cottage Grove, and Cold Spring. He also worked on the Green Bay Velp Avenue Areawide Plan as lead designer of the transformative opportunity site designs, the Village of Wausaukee Hwy. 141 streetscape improvements, and the City of Wausau Riverfront Redevelopment. Todd is a native of Appleton, WI and an avid Packer fan.

EDUCATION

Bachelor of Landscape Architecture, University of Minnesota, Minneapolis, MN, 1984

REGISTRATIONS

Landscape Architect: WI, MN

Relevant Projects

Downtown Streetscape & Urban Design Update, St. Cloud, MN
 New Hope Civil Center Streetscape Improvements, New Hope, MN
 Velp Avenue Areawide Plan, Green Bay, WI
 City of Wausau Riverfront Redevelopment, Wausau, WI
 Commercial Street, Neenah, WI
 2nd Street SW/Mayo Clinic–St. Mary's Hospital Streetscape and Entry Development, Rochester, MN
 Red River Avenue/CSAH 2 and Main Street Streetscapes, Cold Spring, MN



Attachment: Stantec (6484 : Consider Approval of the James Street Streetscape Design Services*)



125+ companywide awards
for public engagement, landscape
architecture, and urban design

Scope / Task List Revisions

The scope of services provided is very similar to the scope provided in the request for proposal. Please note there are some additional task items and some terminology has been modified to further define and help clarify the process, based on our experience with similar projects.

Phase 1: Inventory and Analysis

Phase 1 will focus on reviewing and analyzing previous local documents and any previous planning efforts, engaging stakeholders, City Staff and community outreach. We will prepare a thorough site analysis from available data and representative base maps. These tools will assist project stakeholders define a vision for James Street. At the end of Phase 1, we will have gained a comprehensive understanding of the project's physical characteristics, cultural history and potential opportunities. This information will be critical for providing direction during the conceptual design phase.

Task 1: Project Assessment, Area Analysis and Preliminary Design (Project kick-off meeting #1)

Subtask 100: Project Kick-off Meeting (Teleconference #1)

Stantec will facilitate a teleconference meeting where we will discuss objectives and goals, review project history, scope and design program. Discuss and confirm project schedule and the basis for collaborating to complete the project in an orderly manner. This subtask includes a written summary of the meeting.

Subtask 101: Data Collection/ Inventory of Existing Conditions

We will gather data from available sources and compile it into a base map that clearly defines the project area and



Opportunity and Constraint: Parking is an important use to local businesses but also reduces the amount of space available to pedestrians and users.

relevant surrounding area. Our project team will conduct a thorough site analysis and evaluation to better acquaint ourselves with the physical attributes of the area and surrounding neighborhood.

Task 2: On Site Kick-Off Meeting (meeting #1)

Subtask 200: On Site Project Kick-off Meeting (On site meeting #1)

Our team will present the findings of the inventory of existing conditions and confirm details of the inventory by conducting a site visit and take photographs of the project site and surrounding area. This subtask includes a written summary of the meeting.

Subtask 201: Visual Preference Survey

Our team will prepare a visual preference survey that will be reviewed by the City prior to the onsite kick-off meeting. The survey could be made available digitally through surveymonkey at an additional cost, should the City be interested.

Subtask 202: Stakeholder Meeting (On site meeting #2)

On the same day, our team will facilitate a project stakeholder discussion to identify key objectives of the James Street Streetscape improvements, including visual preferences. This subtask includes a written summary of the meeting and visual preference results.

Subtask 203: Synthesis of Issues, Opportunities, Findings and Evaluations

The findings and conclusions will be synthesized and documented into a site analysis exhibit for use in the public design workshop. We will refine project goals to create a prioritized list of supportive objectives that define a practical vision for the project and guide the creation of the three defined alternative designs. This deliverable will be submitted for review digitally.

TASK 2 Deliverables:

A summary of each of the meetings under task 2 and the visual preference survey results.

PHASE 2- Conceptual Design and Design Refinement

Phase 2 will focus on the development of three conceptual design alternatives based on the “Design Vision” Identified in the Request for Proposals.

Task 3: Develop Alternative Concept Plans

Subtask 300: Develop Alternative Concept Plans

We will prepare three overall concept designs that illustrate optional approaching for addressing the design goals, objectives and site parameters identified in subtask 203. Plan views and character images of each of the options listed below will be provided to convey design intent. The design alternatives will follow the following development criteria:

Option 1: This alternative would be the least expensive option from a design and construction perspective. Consideration would include the entire site and produce an economical design to include some seating, tree and planting enhancements.

Option 2: This alternative would build upon option 1 and add features to make the Streetscape more appealing (additional seating, water feature etc.)

Option 3: This alternative will be the best possible design and likely the most expensive.

Subtask 301: Develop Probable Cost Estimates

We will develop probable cost estimates for each of the three concept alternatives.

Subtask 302: Alternative Design and Cost Review (Teleconference #2)

We will submit design alternatives digitally for review by City staff. Our team will incorporate one round of edits for each of the three design alternatives and costs.

TASK 3 Deliverables: Three concept alternative plan renderings with character image boards and preliminary probable cost estimates for each alternative.

Task 4: Facilitate Public Open House and Common Council Meeting

Subtask 400: Public Open House and Common Council Meeting Preparation (Teleconference #2, same meeting as subtask 302)

At the same time as subtask 302 we will work with the City to develop a schedule of options for the public information meeting.



Opportunity: Incorporating elements of De Pere's existing identity, like the custom bike racks, into the design will strengthen the sense of place and support healthy communities.

Subtask 401: Presentation to Common Council (onsite meeting #3a)

Stantec will prepare and present the design alternatives to the Common Council over a period of 10-15 minutes.

Subtask 402: Facilitate Public Open House (On site meeting #3b)

On the same day as the Presentation to the Common Council, Stantec will facilitate a public open house that will include a presentation that highlights the project background, reasoning and design of the streetscape design alternatives. Stantec will gather public input on the design alternatives and costs associated with each.

TASK 4 Deliverables: Facilitated public open house and presentation to common council. PowerPoint and up to six (6, 2 each concept alternative) display boards with delivery of digital media via ftp site and DVD or flash drive.

Task 5: Final Conceptual Design

Subtask 500: Develop Preferred Design Alternative

Based on feedback we receive from staff, common council and the public we will revise the preferred concept alternative. The plan view and character image will be updated to reflect the input gained. Stantec will provide the final design board to City staff so that they can provide it to the Board of Public Works and City Council for review.

Subtask 501: Refine Probable Cost Estimate

We will update the cost estimate for the preferred design alternative.

Subtask 502: Plan and Special Provisions Review Meeting and Revisions (Teleconference #3)



Opportunity: Given the project area, there is space to do something impactful.

We will submit and review the Final Concept Design with the City. We will incorporate one round of comments and edits from City staff.

TASK 5 Deliverables: To-scale rendered conceptual plan with character images and probable cost estimate.

PHASE 3- 60% Construction Documents

Phase 3 includes refinement of the preferred conceptual design and includes 60% engineering and construction documents for James Street Streetscape. This City will provide a topographic/utility site survey. On-going communication with staff and sharing PDF drawings for comment and review.

Task 6: 60% Construction Documents

Subtask 600: 60% Construction Document Set

We will prepare 60% construction drawings in accordance with applicable codes and regulatory requirements, including ADA accessibility guidelines and environmental regulations. The 60% Construction Document Plan set will include:

- Cover/Title Sheet
- Existing Conditions/Site Survey (survey is not included in the scope of work)
- Materials and Layout Plan and Details
- Grading Plan
- Landscape Plan and Details
- Irrigation Plan and Details (zone irrigation plans will be provided)
- Lighting Plan and Details (light fixture and locations will be identified. Full electrical engineering and photometrics are not included but are available for an additional fee.)
- Site Furnishing Plan and Details

Subtask 601: Specifications

We will prepare a special provisions specification for any unique site features. Full specifications are not included in the scope of services but are available for an additional fee.

TASK 6 Deliverables: PDF copy of all draft and final City approved design plans and details as listed in subtask 600 and special provisions specification. (2) hardcopy-22x34 full size plan sets will be provided to the City.

ASSUMPTIONS AND CONDITIONS

1. The City of De Pere shall be responsible for providing Stantec with pertinent information related to the project, including but not limited to: base map materials (CAD or GIS files of existing features and utilities), reports and studies, data for maintenance and practices, existing plans and practices, existing attendance and course use information, current maintenance budget etc.
2. Professional Survey Services are not included in this scope of services.
3. Final construction plans or bidding documents are not included. If requested, Stantec can provide an amendment for additional services to produce complete bidding document construction drawings.
4. 60% Construction documentation is based on the development of option 1. Stantec reserves the right to identify the additional requirements should a more robust alternative be selected for the preferred concept as additional services and shall provide an amendment if requested by the Owner.
5. No Bidding, Construction Administration or Observation is included in the scope of services.
6. Special provision specification section will be provided as part of this scope of services, if requested Stantec can provide an amendment for additional services to include the full set of specifications for the project.
7. No stormwater permitting is currently anticipated. Stantec reserves the right to identify the additional requirements as additional services and shall provide an amendment if requested by the Owner.
8. Full electrical engineering and photometrics are not included in the scope of work. If requested Stantec can provide an amendment for additional services to produce these drawings.
9. Fundraising or grant opportunities services are not included as part of this scope of service. If requested Stantec can provide an amendment for additional services for this service.



The Stantec-designed New Hope Civic Center has become a vibrant place, hosting a farmers market and other community events.

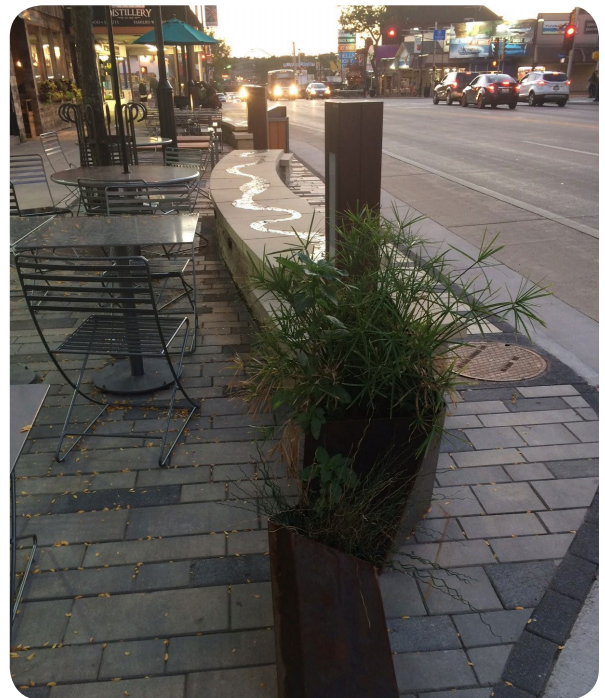
Design Examples



Cafe Zones / Streetscaping

Wisconsin Dells, Wisconsin

Streetscape improvements to Main Street in downtown Wisconsin Dells—the Water Park Capital of the World—was part of a larger effort to create a River Arts District. While employed with another firm, Sarah was responsible for the design, material and site furnishing selection for a streetscape retrofit on the 200 block of this section of street that is a year-round vacation destination. The café zones create a safe, comfortable and attractive respite for tourists visiting local shops and eateries. A decorative seat wall with mosaic tile separates patrons from traffic, provides outlets to charge phones and decorative lighting for evening ambiance.



Attachment: Stantec (6484 : Consider Approval of the James Street Streetscape Design Services*)



Fowler Lake Shoreline Project

Oconomowoc, Wisconsin

Active community involvement and an enthusiastic steering committee helped develop a vision for this lakefront redevelopment, including a new boardwalk, boat launch and park amenities.

Oconomowoc, or “where waters meet”, is a thriving lake community located just outside of the Milwaukee metropolitan area. With focus on the natural beauty of their surrounding environment, the Oconomowoc Parks, Recreation & and Forestry Department chose Stantec to redesign the shoreline along Fowler Lake to help make this area a downtown destination for community members and visitors alike.

Stantec’s multidiscipline team of engineers, designers, and environmental specialists created innovative design concepts to help highlight the natural features of this space. The design includes a large pier, boat launch facility, shoreline boardwalk, gazebo, and restoration elements. Stantec also engaged the community by posting the concepts online and soliciting input through social media.

Stantec developed cost estimates to help the community prioritize and phase the improvements. Construction of the first phase, which includes parking lot reconstruction, landscaping, new boat launches, boat slips, a new boardwalk and water shore seating, is complete.





Wausau Riverfront Development

Wausau, Wisconsin

Transforming environmentally blighted brownfields into inviting recreational resources is one way Stantec helps “design with community in mind.” A multi-faceted Stantec team is currently doing just that for the City of Wausau, where a sweeping \$82 million waterfront redevelopment is underway.

Wausau is working with Stantec’s multi-disciplined team of planners, landscape architects, engineers and scientists to implement public improvements along over 1500 feet of Wisconsin River shoreline—laying the groundwork for a new regional recreation and entertainment waterfront destination.

Specific design elements include an ADA publicly accessible boat and fishing wharf, nearby kayak launch, multi-use trail system, riverbank restoration, and lighting and site furnishings. A very noteworthy feature was the restoration of a previously navigable stream, which had been encapsulated into a large diameter storm sewer as the City developed over the last 100+ years. This stream was daylighted and an arched bridge built over it with a lighted waterfall feature, for both visual and functional appeal, serving to recirculate fresh water from the Wisconsin River into the stream during low flow periods in the summer.

Because of the Wisconsin River’s hydrologic characteristics, various river bank slope stabilization techniques are being considered including native vegetation preservation and restoration, in addition to locally quarried stone rip rap and stone terracing. Over the past several years, Stantec’s brownfield team has helped city officials obtain more than \$2.5 million in federal and state funding to remediate and redevelop 31 acres of vacant and contaminated riverfront parcels. Their work resulted in the 2013 National Brownfield Renewal Award for Economic Impact. Today, the process of reclaiming this valuable waterfront resource for the enjoyment of the community continues to unfold.



Reed Street Yards

Milwaukee, Wisconsin

It wasn't long ago that this former rail yard brownfield site sat vacant. Through a collaborative effort between the City of Milwaukee, developers, design teams, and stakeholders, Reed Street Yards now offers 17 acres of mixed-use development opportunities along the Menomonee River in downtown Milwaukee. Conversion of the 17-acre brownfield included an extension of the Hank Aaron bike trail, canal wall improvements, canoe/kayak launch, public road, utilities, urban plaza, and a site-wide stormwater management system utilizing bioswales, wetland demonstration, and phytotechnologies.

As one of Wisconsin's first Eco-Industrial Parks, Stantec was thoughtful when designing the surrounding landscape to coincide with the natural resource and sustainable theme of the site. This site is slated as a demonstration project to showcase water-based technologies and business. Stantec combined hard and soft design elements, creating a walkway plaza that incorporated the natural resources theme through several water features and native plantings. Stantec also incorporated green stormwater solutions through in-curb bioswales and rain gardens to help promote water-oriented sustainability of the entire project site.

Creative landscape design was able to transform this site from a run-of-the-mill office park, to a waterfront destination for not only businesses but members of the community as well.



Attachment: Stantec (6484 : Consider Approval of the James Street Streetscape Design Services*)



St. Cloud Downtown Urban Design Update

St. Cloud, Minnesota

Stantec's Landscape Architects and Urban Designers were engaged by the City of St. Cloud to develop an urban design plan to renovate five blocks of its main downtown street, St. Germain Avenue. The existing streetscape was over 20 years old, and the roadway alignment meandered around a sculpture consisting of a large trio of granite boulders. Stantec worked with City staff and members of the Downtown Council to develop alternatives for enhancing the public spaces along the street while accommodating parking needs of area businesses. Design ideas were tested during two community open houses to obtain public input, and refined into a final master plan design document that ultimately included straightening the roadway and relocating the granite trio. The project is now being implemented as sections of the roadway are reconstructed.



Second Street Corridor

Rochester, Minnesota

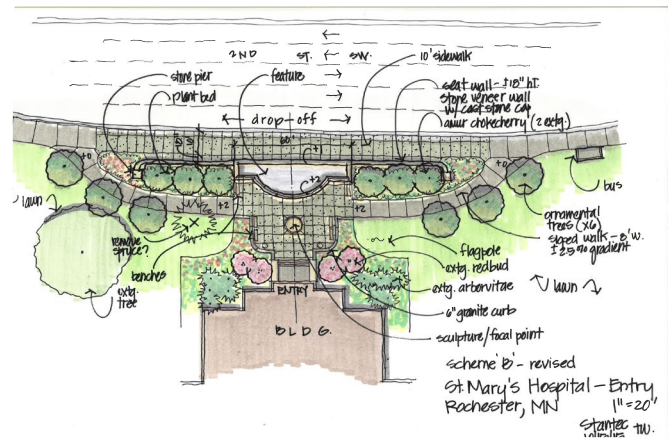
Stantec originally prepared a redevelopment strategy that emphasized the creation of a more sustainable, pedestrian, and transit-oriented development model for the long term improvement of the 2nd Street corridor. Since then, we have been involved in multiple phases of design implementation.

The 2nd Street corridor serves as a major gateway into the heart of downtown Rochester and the core of the Mayo campus. Located along the corridor are significant institutional uses, including St. Mary's Hospital, Mayo support facilities, and numerous commercial and hospitality uses.

The redevelopment strategy included transportation enhancements, a hierarchy of public and private improvements, as well as development guidelines that addressed recommendations derived from the community visioning process.

Stantec prepared detailed designs for previous phases of the project, and is currently completing the streetscape and urban design documents for the final phase extending from 11th Avenue to 16th Avenue. The design is modifying lane widths, adjusting on street parking, and creating a robust pedestrian realm adjacent to a mix of uses including health care, retail, commercial, and hospitality. Reconfiguration of pedestrian crossings and transit facilities along the corridor created additional spaces for focused development of urban design features, such as a new plaza and fountain in front of St. Mary's Hospital.

The project has involved multiple stakeholders including several City departments, the County, MnDOT, area businesses and residents, and the Mayo Clinic. Targeted meetings along with open houses and other forums were used to gather input.





Civic Center Streetscape

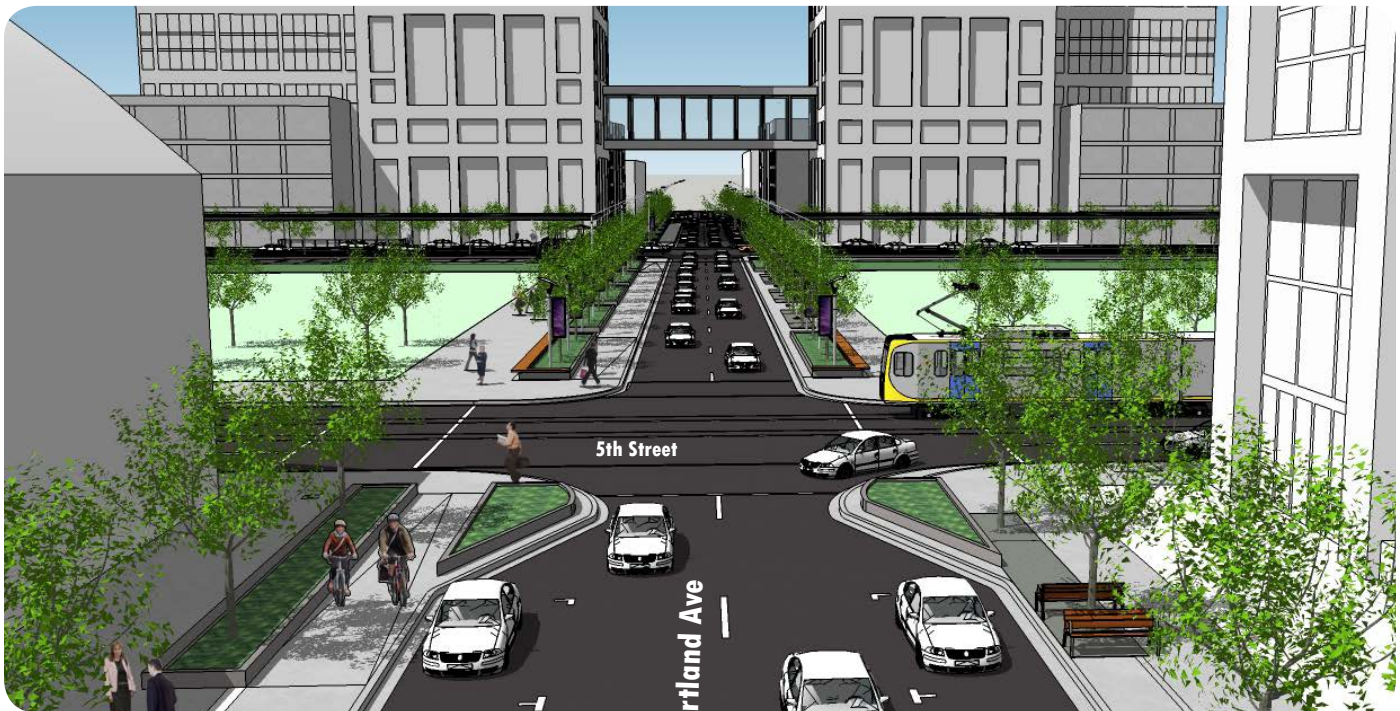
New Hope, Minnesota

The City of New Hope embarked on an ambitious project to redevelop its City Center area, which includes its city hall, a fire station, the police station, and Civic Center Park. The Xylon and 45th Avenue project completely reconstructed the utilities and street, and created a new streetscape and series of public spaces along an eight-block section of the City Center area, with intensive urban design amenities along a four-block stretch.

The new entry to the City Center area includes a gateway colonnade with monument signage and an electronic reader board to showcase community events. The design continues with custom banner columns with district signage and uplighting, pergola seating areas, informal gathering areas, planters, decorative fencing, tree grates, trash receptacles, bike parking, decorative paving, and enhanced crosswalks with colored concrete paving. Retractable bollards allow for portions of the roadway to be closed for farmers' markets and other community events, and a comprehensive lighting strategy with roadway lighting, pedestrian lighting, bollard lighting, and vegetative accent lighting creates a memorable atmosphere. Structural soils were also included under trees and planters to improve stormwater quality. The design theme for the streetscape will be extended into the redevelopment of the city hall and police campus.

The project construction was phased to maintain access to police, fire, and city hall facilities. Overall, the project design and construction proceeded on an accelerated schedule to accommodate the HyVee redevelopment of a former K-Mart store location. Multiple bid packages were used to accomplish the project quickly, and Stantec is currently working on the city hall and park redevelopment projects to build on the work that has been completed.





Downtown East Pedestrian Realm Augmentation Study and Implementation

Minneapolis, Minnesota

Improving safety and the overall quality of life for pedestrians and bicyclists traveling through this area was key to revitalizing the Downtown East neighborhood.

The Downtown East neighborhood has been going through major changes to prepare for the new U.S. Bank Stadium opening in the summer of 2016. The City wanted to improve pedestrian realm facilities in this area, so Stantec's landscape architects and traffic engineers studied 12 contiguous blocks, looking for opportunities for complete non-motorized connections through downtown within the public right of way. Working closely with the Department of Public Works, Stantec translated the City's analysis of potential traffic lane reductions into graphic plans, sections, and elevations of an enhanced pedestrian realm. This helped government decision-makers understand how space previously dedicated to automobile uses could be repurposed to create urban amenities, widened sidewalks, and bicycling facilities.

Stantec prepared design concepts that included on and off street bike lanes, pedestrian bump outs at intersections, lane reductions and parking modifications. To assist with the visualization process, Stantec created a SketchUp model of the study area so that the expanded pedestrian realm areas could be easily depicted from multiple vantage points.

As an extension of this project, Stantec worked with the City and other stakeholders to develop an implementation plan for constructing the necessary improvements in coordination with all other elements of construction and redevelopment. Stantec created a plan to deliver all aspects of this project in an expeditious manner that also minimized cost and disruption to the public. Stantec staff worked closely with the adjacent property owners to ensure that the City's desired improvements were efficiently incorporated during construction.

Stantec has **deep roots** in Wisconsin's communities.



60+ years helping local communities grow



175+ local planners, engineers, scientists, and support staff



Attachment: Stantec (6484 : Consider Approval of the James Street Streetscape Design Services*)

Client References



Fowler Lake

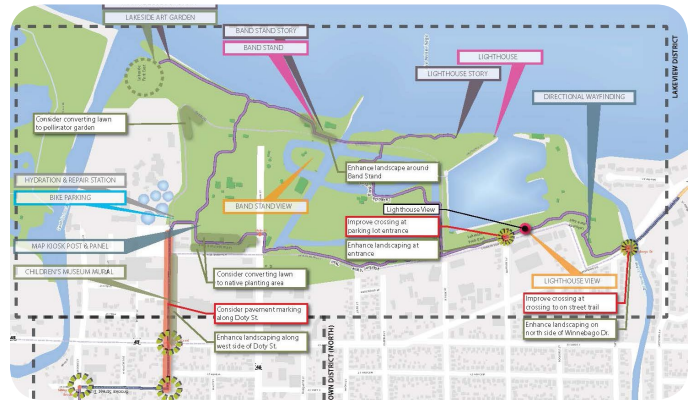
JOHN KELLIHER, OCONOMOWOC DIRECTOR OF PARKS,
RECREATION AND FORESTRY
220 W WISCONSIN AVENUE
OCONOMOWOC, WI 53066
(262) 569-2177
JKELLIHER@OCONOMOWOC-WI.GOV

Active community involvement and an enthusiastic steering committee helped develop a vision for this lakefront redevelopment, including a new boardwalk, boat launch and park amenities.

Oconomowoc, or “where waters meet”, is a thriving lake community located just outside of the Milwaukee metropolitan area. With focus on the natural beauty of their surrounding environment, the Oconomowoc Parks, Recreation and Forestry Department chose Stantec to redesign the shoreline along Fowler Lake to help make this area a downtown destination for community members and visitors alike.

Stantec's multidiscipline team of engineers, designers, and environmental specialists created innovative design concepts to help highlight the natural features of this space. The design includes a large pier, boat launch facility, shoreline boardwalk, gazebo, and restoration elements. Stantec also engaged the community by posting the concepts online and soliciting input through social media.

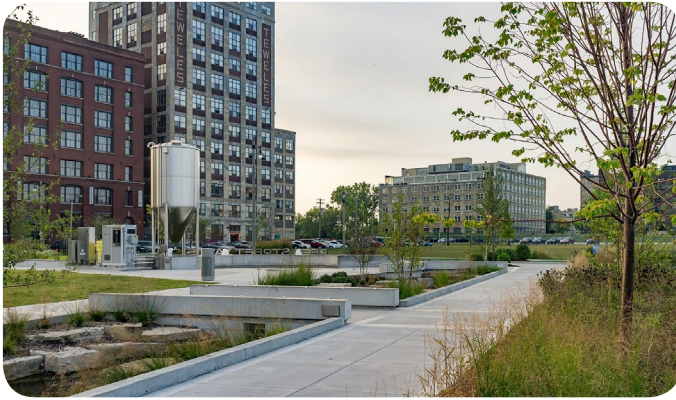
Stantec developed cost estimates to help the community prioritize and phase the improvements. The project was recently completed.



Fond Du Lac Loop Landscape Master Plan

JORDAN SKIFF, DIRECTOR OF PUBLIC WORKS
CITY OF FOND DU LAC
(920) 322-3470
JSKIFF@FDL.WI.GOV

While employed with another firm, Sarah McDonald was responsible for overall project management and consultant team coordination for the development of a recreational trail landscape master and placemaking plan for “The Loop” in the City of Fond du Lac. The Master Plan highlights existing conditions and provides an analysis of strengths, weaknesses, opportunities and threats within the Loop area. The plan made specific recommendations for public and private capital, operation and policy improvements to unlock the full potential of the Loop, including conceptual design of six focus areas.



Reed Street Yards

SIG STRAUTMANIS
GENERAL CAPITAL GROUP
(414) 228-3502
SIG@GENERALCAPITALGROUP.COM

As one of Wisconsin's first Eco-Industrial Parks, Stantec was thoughtful when designing the surrounding landscape to coincide with the natural resource and sustainable theme of the site. This site is slated as a demonstration project to showcase water-based technologies and business. Stantec combined hard and soft design elements, creating a walkway plaza that incorporated the natural resources theme through several water features and native plantings. Stantec also incorporated green stormwater solutions through in-curb bioswales and rain gardens to help promote water-oriented sustainability of the entire project site.

Creative landscape design was able to transform this site from a run-of-the-mill office park, to a waterfront destination for not only businesses but members of the community as well.



Civic Center Streetscape

JEFF SARGENT, DIRECTOR OF COMMUNITY DEVELOPMENT
CITY OF NEW HOPE, MINNESOTA
(763) 531-5196
JSARGENT@CI.NEW-HOPE.MN.US

When the City of New Hope embarked on an ambitious project to redevelop its City Center area, Stantec provided the streetscape and civil design for these improvements.

Stantec designed a new entry to the City Center area that includes a gateway colonnade with monument signage and an electronic reader board to showcase community events. The design continues with custom banner columns, pergola seating areas, informal gathering areas, planters, decorative fencing, tree grates, trash receptacles, bike parking, decorative paving, and enhanced crosswalks with colored concrete paving. Retractable bollards allow for portions of the roadway to be closed for community events and a comprehensive lighting strategy creates a memorable atmosphere. The design also included structural soils under trees and planters to improve stormwater quality.

The project construction was phased to maintain access to police, fire, and city hall facilities. Overall, the project design and construction proceeded on an accelerated schedule to accommodate the HyVee redevelopment of a former K-Mart store location. Multiple bid packages were used to accomplish the project quickly.

Project Timeline

	Jan				Feb				Mar				Apr			
PHASE I: Inventory and Analysis																
Project Kick-off Meeting (Teleconference #1)																
On Site Kick-off Meeting (Meeting #1)																
Stakeholder Meeting (Meeting #2)																
PHASE II: Conceptual Design and Design Refinement																
Develop Alternative Concept Plans & Probable Costs																
Alternative Design and Cost Review (Teleconference #2)																
Public Open House & Common Council Meetings (Meeting #3a/3b)																
Final Design and Cost Review (Teleconference #3)																
PHASE III: 60% Construction Documents																
Project Completion																

Attachment: Stantec (6484 : Consider Approval of the James Street Streetscape Design Services*)

Fee Schedule

	Phase Total
PHASE I: Inventory and Analysis	\$7,100
PHASE II: Conceptual Design and Design Refinement	\$16,765
PHASE III: 60% Construction Documents	\$12,985
Project Management	\$1,625
Reimbursables and Travel Expenses	\$850
TOTAL	\$39,325

Attachment: Stantec (6484 : Consider Approval of the James Street Streetscape Design Services*)

Proposal to Provide Professional Consulting Services for
James Street Streetscape Conceptual Design & Design
Development for the

City of De Pere



Prepared For:

Bill Boyle, PMP, GISP, Project Manager
City of De Pere
Economic Development & Planning De
335 South Broadway Street
De Pere, WI 54115

Prepared By:

Vierbicher
999 Fourier Drive, Suite 201
Madison, WI 53717

Phone: (608) 821-3967

Fax: (608) 826-0530

Contact Person: Daniel J. Lindstrom, AIC

Prepared On:

October 27, 2017

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vierbicher
planners | engineers | advisors



Attachment: Vierbicher (6484 : Consider Approval of the James Street Streetscape Design Services*)



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999 Fourier Drive, Suite 201
Madison, Wisconsin 53717
(608) 826-0532 phone
(608) 826-0530 FAX
www.vierbicher.com

October 27, 2017

City of De Pere– Economic Development & Planning Department
Bill Boyle, PMP, GISP
Project Manager
335 S Broadway Street
De Pere, WI 54115

Dear Mr. Boyle,

On behalf of the Vierbicher, it is my pleasure to present this proposed scope of work for the James Street Streetscape Conceptual Design and Design Development project. We are excited about the potential of this site, given its prominent downtown location and proximity to so many landmarks and destinations. Our James Street project team includes individuals with landscape architecture, urban design, planning, engineering, and project implementation expertise. As you will see from our Statement of Qualifications and Representative Project Sheets on the following pages, our team has a wealth of experience working on urban streetscape redevelopment projects.

Our goal is to be a partner in a project which enhances the vitality and vibrancy of the area through careful and thoughtful redesign of this important site in downtown De Pere. We use the word 'partner' because in addition to working closely with you, we understand the importance of community involvement in this kind of project. Most of our projects include some level of public participation, and we have developed a tool kit of ideas, exercises and strategies to engage groups of various sizes, ages, and abilities. We'd love to share our ideas with you and find the right set of engagement tools for downtown De Pere.

On the following pages you will find our statement of qualifications, meet our project team, and learn more about similar projects we've worked on in the past. Our representative project sheets also include construction cost information to give you an idea of the range of costs you might expect, and a project reference in case you would like any more information from the Client's perspective. Don't hesitate to reach out if you have any additional questions about any of the information we have included here.

Thank you for the opportunity to submit a proposal for this project. We look forward to the opportunity to meet you and learn more about your team, your community, and your project.

Sincerely,

Dan Lindstrom, AICP
Planning & Community Development Group Manager

Dave M. Glusick, PE
Principal

Attachment: Vierbicher (6484 : Consider Approval of the James Street Streetscape Design Services*)



Description of Firm



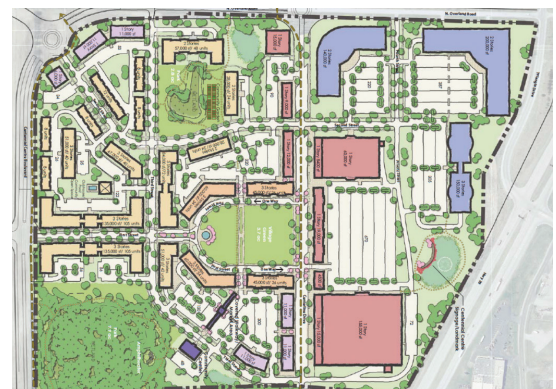
Vision to Reality

Vierbicher is a community planning and civil engineering firm that has become a proven partner for thriving Wisconsin communities and developers. Our extensive experience working with both public and private clients has earned us the reputation as a trusted advisor and a firm that brings vision to reality.

Clients choose Vierbicher because we get projects done. While our core service is civil engineering, our extensive due diligence, market-based approach and public funding expertise have made us an industry leader with unmatched success rates.

In addition, our wide range of work with both public and private clients has uniquely positioned us to bring added value by connecting developers to community projects.

We pride ourselves on long-term client relationships, many spanning decades. Our multi-disciplined team of experts works collaboratively and efficiently from concept to completion to accomplish client goals on time and on budget.



INTEGRATED SERVICES

- Planning & Community Development
- Economic Development
- Urban Design & Landscape Architecture
- Grant Writing & TIF
- Municipal Engineering
- Civil Engineering
- Surveying & GIS
- Water Resources Engineering



Statement of Qualifications

As a team of planners, landscape architects, and engineers, Vierbicher is uniquely qualified to tackle the multi-faceted challenges of a project like James Street. We understand the social, environmental, and practical issues involved in planning and executing streetscape projects in highly visible urban areas and are skilled at finding the best solution for each project.

Project Understanding

The James Street project is unique in many ways. It is an important step toward achieving Downtown Master Plan circulation goals for De Pere, including:

- Connecting local neighborhoods and downtown pedestrian traffic to the Fox River Trail, river frontage, and Voyageur and Wells Parks
- Maintaining or adding visible and accessible parking within downtown.

It is also an opportunity site for achieving cultural and environmental goals such as:

- Public art display
- Interpretive exhibits showcasing local history and/or geography
- Adding life to the downtown district
- Promoting the urban forest
- Implementing stormwater best management practices (either at the surface or below grade).

This block of James Street is also highly visible from Broadway Avenue which carries 13,000 vehicles per day through downtown De Pere. This area is a key 'first impression' site because of its location alongside the historic Union Hotel, one block from Chateau De Pere, and one block from Seroogy's Chocolates; all popular tourist destinations in downtown. The site is also key for local residents as it connects some of the urban housing options (Lawton Foundry Town Homes, Arbor Landing Apartments) and many entertainment and eating establishments in the downtown core. James Street is also the only local street that has a direct connection from the neighborhoods to the east to the river front and Fox River Trail.

The strengths and opportunities of this site and project can also become design challenges because there are so many stakeholders and so many potential issues with a project like this. We understand that the City is seeking a Consultant partner to not only develop the design from conceptual options to near-construction documents, but also facilitate public input and investment into the design process and ultimately the project itself. We feel that our in-house combination of planning, landscape architecture and engineering services makes us an ideal partner for this project.



QUALIFICATIONS

Our Team

We are skilled at facilitating public discussion in a way that yields useful information for making design decisions. Most of our projects involve some level of public input, either through a project steering committee, public survey, or public workshops. We recognize that a consultant can never hope to know a place the way a local resident, business owner or municipal official does. By actively seeking insights from these people, we are able to develop a project that reflects local preferences and market realities.

Project Area Analysis/ Figure Ground Study

-  PROJECT SITE
-  URBAN RESIDENTIAL/LODGING
-  CORE COMMERCIAL/ENTERTAINMENT DIST.
- 1. GEORGE ST LANDING/FARMER'S MARKET
- 2. SEROOGY'S CHOCOLATE
- 3. UNION HOTEL
- 4. CHATEAU DE PERE



Our design team is familiar with the challenges of urban sites. From designing circulation to accommodate access for all to selecting plants that can tolerate urban sites, we pride ourselves on custom solutions for our clients. Our streetscape projects reflect the needs of the specific site and community. Our two most recent installations, in the City of Rhinelander and the Village of Shorewood Hills, were both actively driven by steering committees and included opportunity for public feedback. Specific issues that were addressed in Rhinelander were on-street parking, terrace width, snow removal, and tree selection and placement coordinated with business signage. Specific issues in Shorewood Hills were stormwater management, on-street parking configuration, pedestrian safety, and unifying varied architectural styles. While there are often common themes between projects, no two solutions are the same. Our Representative Project sheets include more information and photos for these and other projects.

Our engineering team is accomplished at navigating the technical challenges of streetscape projects, from ensuring access and drainage on walking surfaces to addressing potential utility surprises in historic areas. We have experience in multiple scales of redevelopment projects,



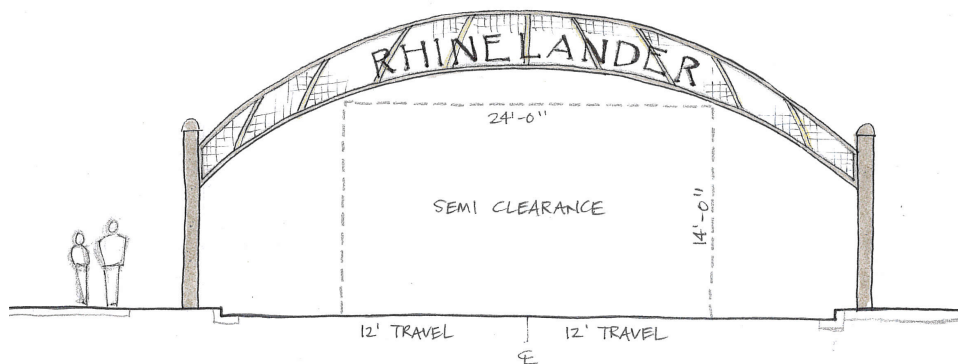
QUALIFICATIONS

from single sites or blocks like James Street to an entire downtown corridor revitalization. This experience helps us identify potential issues up front to minimize construction surprises.

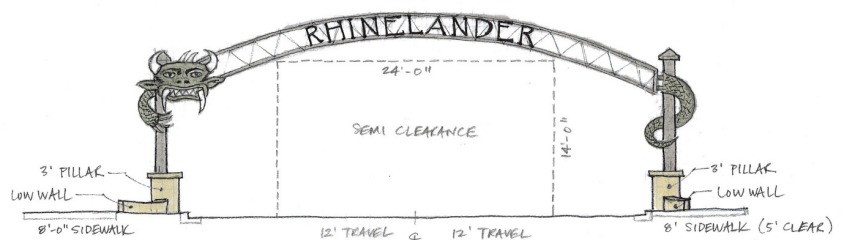
Why Vierbicher?

You won't always see it in our final designs, but many of our projects include tangents to explore an interesting or fun idea that comes up along the way. For example, during the planning process for the Rhinelander streetscape project, a donor came forward and wanted to gift a 'gateway arch' to the City. A few ideas were tossed around, but it was clear from the beginning that this arch would have to include a Hodag. Who can think of Rhinelander without picturing a Hodag? Several ideas and locations were drawn up, including the ideas below. The archway has yet to be constructed but even if it does not come to fruition, it was an interesting and informative exploration of community identity and first impressions.

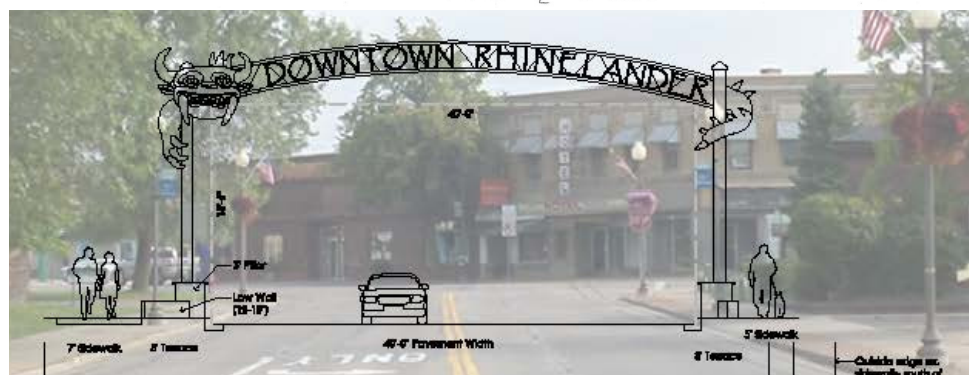
An early idea for a gateway arch in Rhinelander, inspired by the Oneida County Courthouse dome (a prominent feature of downtown.)



In addition to our experience and penchant for exploration, the design and engineering team for this project share office space and see each other every day. Your project is just as likely to be discussed across the coffee pot as across the conference room table. This helps eliminate communication gaps and encourages creative ideas and ultimately a carefully considered final design.



An early idea for a gateway arch in Rhinelander, complete with Hodag, above right. An illustration of the same design on location, below right.





Project Team

Bill Boyle, PMP, GISP,
Project Manager



Daniel Lindstrom, AICP
Project Manager

Project Management
Engagement Strategy

Daniel is the manager of the Planning and Community Development Team and a community development planner with over 10 years of experience.

He will be responsible for overall project management and will ensure the project has the resources necessary to exceed expectations.

Suzanne M. Vincent, PLA
Project Landscape Architect

Point of Contact
Design Lead
Public Input Facilitator

Suzanne is a Landscape Architect with 10 years of experience as both lead and support designer on a range of project scales.

She will be the lead site designer and the primary point of contact. Suzanne will attend all on site meetings and the public workshop.



Aaron Prichard
Project Planner

Public Input Facilitator
Research Support
Document Production

Aaron is the newest member of our planning team, a 2016 Master's graduate of the Urban and Regional Planning program at UW Madison.

He will be assisting with almost every aspect of this project, including public engagement strategy and facilitation, site context and history research, and document production. Aaron also brings a fresh perspective and youthful curiosity to the design team.

Timothy L. Schleeper, PE
Project Engineer

Technical Design Lead
Cost Estimator

Tim has over 20 years of experience on a broad variety of projects for municipal and private clientele. He has worked closely with many municipalities and has a thorough understanding of the construction process and technical design components required to successfully complete a project.

Tim is also the keeper of our construction cost database, making him an invaluable resource for realistic cost opinions for a variety of materials and projects.



Staff résumés are located on the following pages.



PROJECT LEADER

Daniel J Lindstrom, AICP

EDUCATION:

M.S. City and Regional
Planning
The Ohio State University (2009)

B.S. Urban and Regional Studies
The University of Wisconsin –
Green Bay (2007)

PROFESSIONAL EXPERIENCE

Vierbicher
Planner/Community
Development Consultant/
Planning & Community
Development Team Manager
(2016)

Vierbicher Associates, Inc.
Planner/Community
Development Consultant
(2015)

City of Green Bay
Planner II (2014)
Planner I (2009)

City of Dublin
Research and Design Assistant
(2008)

ACP Vision + Planning, Ltd.
Community Planning Intern
(2007)

PROFESSIONAL CERTIFICATIONS

American Institute of Certified
Planners (AICP)

Professional Affiliations
American Planning Association
Wisconsin Chapter of the
American Planning Association

Wisconsin Economic
Development Association
(WEDA)

Focus
Project Management
Economic Development
Tax Incremental Financing
Market Assessment
Strategic Planning
Public Policy
Housing Studies
Urban Design

Background Information

Daniel is a community planner with experience and knowledge in integrating participatory approaches to community development. Daniel's project experience includes comprehensive, downtown, corridor, area; and neighborhood planning, recreational area planning and grant writing. In addition, Daniel has extensive experience in project management, public participation planning, public meeting facilitation, design charrettes, site design, Geographic Information Systems (GIS) mapping, and a variety of economic development efforts.

His professional drive stems from finding the balance between community development, sustainability, and urban design as seen through the lens of community participation. Daniel received his professional certification in 2012 from the American Institute of Certified Planners and regularly attends conferences and events hosted by the American Planning Association and the Wisconsin Chapter of the American Planning Association. Daniel regularly is a guest lecturer at local high schools and universities to discuss the field of participatory urban planning and design.

Recent Projects

VILLAGE OF SHOREWOOD HILLS, WI
VILLAGE PLANNER

Daniel has been the Village planner since 2015. Vierbicher has served as Village Planner for Shorewood Hills since early 2008. Daniel helped the Village review and implement two master plans that Vierbicher drafted for the Village immediately following the recession. Daniel helped revise and draft ordinance text, facilitate public meetings, and routinely makes presentations to the Plan Commission and Village Board. Daniel has assisted the Village in grant writing, zoning ordinance revisions, completion of the Village Comprehensive Plan revisions, and performed reviews of several redevelopment proposals and TIF requests. Finally, Daniel led the efforts to amend and create additional tax increment districts.

COMPREHENSIVE PLAN AND VILLAGE CENTER, VILLAGE OF HARRISON, WI
PROJECT PLANNER

Daniel was a project leader for the Village of Harrison. Daniel and the project team produced a Village Comprehensive Plan for the newly incorporated village. This plan incorporated planning for the newly incorporated areas of the Village. It also included plans for the Village Center, presented recent Village data, and contains an detailed action and implementation plan.



LANDSCAPE ARCHITECT

Suzanne M. Vincent, PLA

EDUCATION

University of Wisconsin –
Madison, WI
Bachelor of Landscape
Architecture (2007)

PROFESSIONAL EXPERIENCE

Vierbicher
Landscape Architect (2007)

Ganshert Nursery &
Landscaping
Nursery Staff (Summer 2005)

REGISTRATIONS, CERTIFICATIONS, TRAINING, AND CONTINUING EDUCATION

Wisconsin Registered
Landscape Architect #620

NCI Charrette System Training

Expand Your Horizons Youth
Mentor

PROFESSIONAL AFFILIATIONS

American Society of
Landscape Architects (ASLA)

WIASLA—Wisconsin Chapter
Executive Committee 2012-
Present

Background Information

Suzanne plays a critical role in the creative development of projects through her landscape architecture and graphic design abilities. She has been involved in a wide range of both public and private projects, from site landscape designs to neighborhood plans and downtown revitalization projects. She particularly enjoys finding that “thing” about each project that makes it exciting— a bit of history, a special detail, or a particular synergy.

Relevant Project Experience

- Rhinelander Downtown Streetscape, City of Rhinelander WI
- Marshall Court Streetscape, Shorewood Hills WI

RHINELANDER DOWNTOWN STREETScape, CITY OF RHINELANDER, WI *Landscape Architect*

From February 2014– May 2017, Suzanne worked with the City of Rhinelander on a downtown improvement project. She spent much of 2014 working on a master plan for the area, gathering public input, and coordinating with the project Steering and Design Committees as well as City Staff to refine the vision for downtown. Beginning in March 2015, she started to work on construction plans for the first phase of the project, which was bid over the winter of 2015-2016 and constructed in summer 2016-spring 2017.

MARSHALL COURT STREETScape, SHOREWOOD HILLS, WI

Landscape Architect

Working closely with Village staff, a steering committee, and the Village Engineer, Suzanne developed a streetscape plan for Marshall Court, a medical office and neighborhood shopping area near the University of Wisconsin and Veterans Administration hospitals. Increased traffic, aging utilities, and redevelopment interest made street reconstruction a priority. The first phase was completed during the summer of 2010, phase 2 in summer 2013, and phase 3 in summer 2017. Key features of the new design include porous paving and infiltration swales within the terrace area, energy-efficient LED streetlight fixtures, pedestrian amenities such as benches and trash receptacles, and reoriented on-street parking to improve pedestrian, cyclist, and motorist safety.



PROJECT ENGINEER

Timothy L. Schleeper, PE

EDUCATION

University of Wisconsin—
Madison
B.S., Civil & Environmental
Engineering (1993)

PROFESSIONAL EXPERIENCE

Vierbicher
Project Manager (2010)

I&S Group, Inc.
Project Engineer (2009)

D'Onofrio, Kottke & Associates,
Inc.
Project Engineer (2002)

Town & Country Engineering,
Inc.
Staff Engineer (1993)

REGISTRATIONS, CERTIFICATIONS, TRAINING, AND CONTINUING EDUCATION

Licensed Professional Engineer
– Wisconsin (1999)

PROFESSIONAL AFFILIATIONS

Past President of Dane County
Pheasants Forever (2005—2010)

Capstone Program Mentor—
UW Madison, multiple
semesters

Background Information

Tim has worked in the Madison area for over 20 years and has experience designing and managing a broad variety of projects for municipal and private clientele. He has worked closely with many municipalities and governmental agencies and has a thorough understanding of the construction process and technical design components required to successfully complete a project.

Primary Projects

MUNICIPAL/PUBLIC CLIENTELE

Primary responsibilities include plan and specification preparation for bidding, writing and presenting reports, plans, studies and other technical analyses. Tim is responsible for construction administration, obtaining regulatory approvals, design presentations at public hearings and actively communicating with the client to ensure project objectives are met. Some of the public agencies Tim provides engineering services for are listed below.

City of Stoughton

UW - Madison

UW - Platteville

Wisconsin DFD

Town of Middleton

Town of New Glarus

PRIVATE CLIENTELE

Primary responsibilities include completion of all necessary design documents, plans, specifications, and permits for private development clientele. These projects have been scattered throughout southern Wisconsin and have varied in size from single commercial sites to 200 plus acre Plats. These work efforts require a core design background and the flexibility to tailor a project to the particular needs of the client and requirements of the community. Some recent projects follow.

UW HEALTH—UNION CORNERS CLINIC—MADISON, WI This project involved re-development of the Union Corners site on East Washington Avenue. UW Health purchased a portion of the overall site from the City of Madison for creation of a 60,000 square foot clinic with primary care services. The redevelopment required innovative design of stormwater management facilities and coordination of site utilities between the UW Health site and the remaining Union Corners development. The project, completed in 2016, is LEED certified and was awarded a “Top Project of 2016” honor by the Daily Reporter.

THE DEPOT APARTMENTS—MADISON, WI This project involved re-development of the former Badger Bus depot in downtown Madison. The completed project included three linked buildings fronting Main Street, Washington Avenue and Bedford Street. The requirement to position the buildings close together and close to the street required careful design of parking access points, transitions to public walks, and accessible routes around the building. This high-traffic, highly visible location required significant public input and review by the City of Madison.



PLANNER

Aaron D. Prichard

EDUCATION

M.S. Urban and Regional Planning
University of Wisconsin-Madison (2017)

Energy Analysis and Policy Certificate (2017)

B.A. History, Political Science
University of North Carolina at Chapel Hill (2013)

PROFESSIONAL EXPERIENCE

Vierbicher
Planner (2017)

Vierbicher
Planning Intern (2016)

PROFESSIONAL AFFILIATIONS

American Planning Association

Wisconsin Chapter of the
American Planning Association

Background Information

Aaron is a young planner with a strong interest in urban design, environmental planning, and sustainability. Aaron boasts a year and a half of experience as a full time Planner and Planning Intern at Vierbicher, where he has gained experience working on projects that include comprehensive plans, downtown redevelopment plans, corridor plans, outdoor recreation plans, aquatic facility studies, housing studies, and zoning code updates.

Aaron has experience facilitating public meetings and stakeholder interviews, as well as creating and administering public surveys. He believes community involvement is a crucial ingredient of successful projects. Aaron is also a skilled writer and articulates the outcomes of community meetings, charrettes, and strategic recommendations clearly and succinctly in project plans and relevant communications.

Primary Projects

CENTRAL MAIN STREET CORRIDOR REDEVELOPMENT PLAN, CITY OF SUN PRAIRIE, WI
Planner

In the Summer and Fall of 2017, the City of Sun Prairie contracted with Vierbicher to create a Plan for the Central Main Street Corridor Redevelopment area. The plan's goal is to promote the inclusion of housing alternatives, facilitate access to and throughout the area via multi-modal transportation options, and create the physical design link to connect the downtown to the City's emerging Westside. As a Planner working on the project, Aaron drafted much of the final document's content, including recommendations for streetscape elements, wayfinding signage, and pedestrian amenities. Aaron also attended public meetings to assist with the completion of public engagement exercises. The plan is on track for City Council adoption by the end of 2017 and should promote exciting redevelopment within the Corridor, especially at the catalyst redevelopment site located at the crossroads of the Corridor's two most heavily traveled roads.

COMPREHENSIVE PLAN UPDATE, CITY OF ALGOMA, WI
Planner

The City of Algoma contracted with Vierbicher to provide consulting services to update the City's comprehensive plan and create a strategic community development plan. The plan aimed to develop recommendations and implementation strategies to help the City enhance its downtown and revitalize its waterfront commercial and residential areas. Aaron was involved in all four phases of the project: Engagement, Assessment, Strategy, and Implementation. He prepared materials for public meetings, analyzed existing conditions and survey results, drafted content for each chapter of the plan, and helped assemble the plan's various materials into a complete document.



Scope of Work

We believe that the scope of work as outlined in the RFP is a logical, efficient and effective way to approach a project of this nature. We have outlined the same approach below, with a few changes highlighted in underlined italics.

Phase 1 – Inventory and Analysis

Task 1: Project Assessment, Area Analysis and Preliminary Design.

- Review and research of City documents, preferences and history to develop an understanding of the community and project area. (Order changed from third item to first to indicate that Consultant would like to review these materials prior to first conference call.)
- Introductory Conference Call with City Staff.
- Review of project history, scope and schedule.
- City to provide site planning information to Consultant (topographic data, property and right-of-way linework, building footprints, utility locations, etc.)

Task 2 -On Site Meetings

On Site Meeting #1: Kick off Meeting with City Staff.

- Review of information collected in Phase 1 (Discussion only– written summary of past planning efforts or planning area history will not be provided.)
- Discuss schedule for Stakeholder Group meeting (On Site Meeting #2).
- Site Visit

On Site Meeting #2: Meeting with Project Stakeholder Group.

- Facilitated discussion on design objectives.
- Visual Preference Survey.

Deliverables

- Summary of meetings and visual preference survey.

Phase 2 – Conceptual Design and Design Refinement

Task 3: Conceptual Design Development

- Discuss findings of Visual Preference Survey with City Staff.
- Develop 3 Conceptual Designs based on project objectives and three options.
- Include accompanying renderings and/or comparable images to illustrate design intent.
- Submit designs to the City for Review with estimated cost ranges.
- Incorporate revisions from design team into presentation ready renderings.



SCOPE OF WORK

Task 3 Deliverables:

- Preliminary design site plans and renderings for all three options.
- Preliminary construction estimates.
- Provide schedule options for public meeting. Meeting to include a minimum of two members from Consultant team.

Task 4 (On Site meeting #3): Two meetings on the same day that will include one facilitated public open house and a presentation to the Common Council.

- Pre-meeting with City Staff

Open House

- Provide presentation on background, reasoning and design of streetscape.
- Provide full review of each of the three options.
- Gather public input for each of the three options.
- Gather public input regarding cost acceptability.

Common Council Meeting

- 10-15 minute presentation that includes project background and review of three design alternatives.

Follow Up

- City staff to set up a web based survey tool in order to gather public input on the three options.

Deliverables:

- Facilitated public meeting. Evening meeting, date and site will be determined by the City.
 - Facilitated meeting to be conducted by Designer and Project Manager from Consultant team.
 - Presentation should include printed and visual displays and digital media (for example PowerPoint).
 - Provide DVD or flash drive containing a digital copy of all presentation materials.

Task 5 – Final Conceptual Design

- Review public suggestion/comments to incorporate into the best liked design.
- Follow up with Design Team to guide incorporation of public comments into design.
- Develop preferred conceptual design alternative.
- Include accompanying renderings and/or comparable images to illustrate design intent.
- City staff to provide final design to Board of Public Works and City Council for review and approval.

Deliverables

- Color to-scale conceptual site plan with accompanying renderings and/or imagery as needed to illustrate design intent.
- Preliminary Line Item Cost Estimate.



SCOPE OF WORK

Phase 3 – Design Development Documents

Task 6: Design Development Documents

- Based on public input and direction from Design Team, the Consultant will prepare design development drawings in order to refine the final conceptual design.

Deliverables:

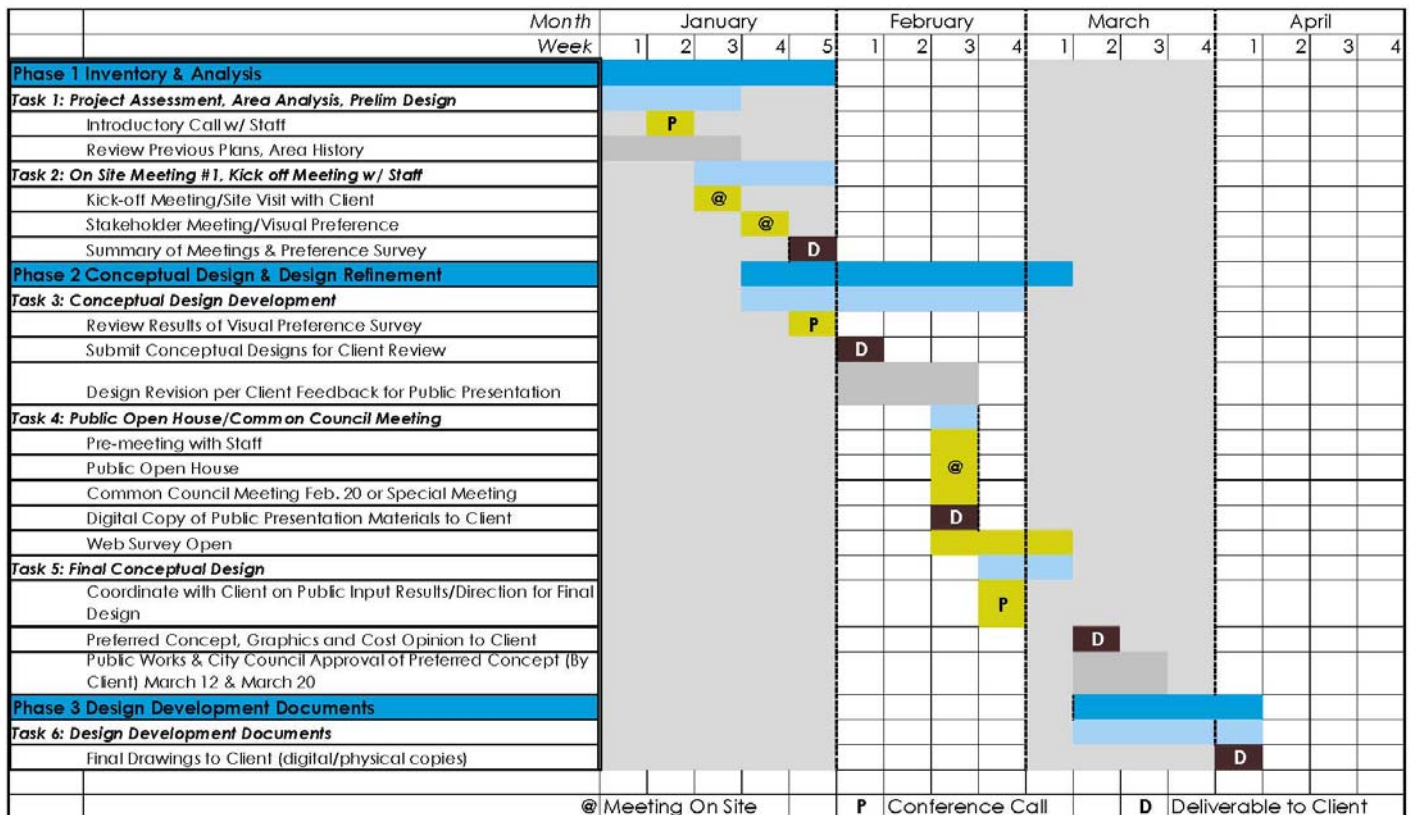
- Design Development Drawing set. The Consultant is responsible for ensuring the documents are in accordance with all applicable codes and regulatory requirements, including ADA accessibility guidelines and environmental regulations.
 - Utility Plans: water, sanitary sewer, and storm sewer as applicable. Gas and communications routing if affected by proposed design.
 - Preliminary grading, include contours, critical spot elevations.
 - Hardscape Plan, including materials and installation methods
 - Landscape Plan, including locations and types of landscape material.
 - Site lighting and details, identify fixtures: Preliminary light locations and photometrics as available from selected vendor. No wiring or conduit routing or control panel design.
 - Irrigation plans and details, if needed.
 - Details for any unique site features.
 - Details for site furnishings.
- PDF/Drawing files of all deliverables generated in Task 6.
- 2 printed to-scale drawing sets.



Schedule and Fees

Schedule

The anticipated project schedule is as follows, designed to meet the City's target completion date of April 2018.



Fee

The proposed fee schedule per task is as follows. Each task will be billed at an hourly rate, not to exceed the amounts listed in the table below. Hourly rates for project staff can be provided as part of the professional services agreement if requested.

Task Number	Task Description	Task Fee
1	Phase 1 Inventory & Analysis	1,700
2	On Site Meeting #1, Kick off Meeting w/ Staff	2,300
3	Phase 2 Conceptual Design & Design Refinement	11,600
4	Public Open House/Common Council Meeting	2,600
5	Final Conceptual Design	5,300
6	Phase 3 Design Development Docs	6,400
Total:		\$ 29,900



Shorewood Hills Marshall Court Streetscape



CLIENT

VILLAGE OF
SHOREWOOD HILLS

PROJECT LOCATION

SHOREWOOD HILLS, WI

REFERENCE

KARL FRANTZ, VILLAGE
ADMINISTRATOR
KFRANTZ@SHOREWOOD-
HILLS.ORG
608.267.2680

CONSTRUCTION COST

\$320/LF (INCLUDING
CURB, SIDEWALK,
LIGHTING AND
INCIDENTALS)

PROJECT DESCRIPTION: Although only the length of two city blocks, Marshall Court's location adjacent to the UW and VA hospitals and along a busy bicycle corridor makes it a heavily traveled street. Sidewalks are not continuous along the length of the street (due to inconsistent right-of-way width), prompting a number of pedestrians to travel in the street. Perpendicular parking along both sides of the street maximized available parking area, but makes pedestrian and bicycle travel dangerous.

The streetscape plan for Marshall Court addressed a number of these challenges, as well as stormwater management and nighttime visibility issues. Parking was realigned to be parallel to the street, reducing the overall stall count but greatly improving safety for motorists, cyclists and pedestrians. (It is anticipated that new buildings will include some underground parking, as the building in phase one did). Sidewalks were added to both sides of the street, and property acquisition was mapped to create a consistent right-of-way width along the length of the street. Energy-efficient induction street lights were placed to provide low levels of light at night, enough to comfortably travel the street but without disturbing residents of the condo buildings along the street. Infiltration planters were incorporated into the new terrace areas to filter and infiltrate stormwater off the street and sidewalk before releasing it into the storm sewer system. Porous paving in unplanted terrace areas creates additional opportunities for infiltration. A 2' paved band along the street ensures that parked cars can still be accessed easily without damage to vehicles or plants.



Rhinelanders Downtown Streetscape and Economic Development Planning



CLIENT

CITY OF RHINELANDER

PROJECT LOCATION

RHINELANDER, WI

REFERENCE

TIM KINGMAN, PUBLIC
WORKS DIRECTOR
TKINGMAN@
RHINELANDERUTILITIES.ORG
715.362.4731

CONSTRUCTION COST

\$160/LF (INCLUDING
CURB, SIDEWALK,
LIGHTING AND
INCIDENTALS)

PROJECT DESCRIPTION: Vierbicher worked with the City of Rhinelanders and Downtown Rhinelanders Inc. (DRI) to complete a market study and develop a comprehensive streetscape plan for the City's three main downtown corridors— Brown Street, Davenport Street, and Stevens Street. The goal of the project was twofold: to improve downtown Rhinelanders's economic position as the "Gateway to the North" while taking advantage of planned utility upgrades in much of the downtown.

The planning process included significant public outreach, as well as frequent coordination with a design committee, a steering committee, and City engineering, planning, and forestry staff. In this way both public and private, civic and business issues had a place at the table.

The outcome of the planning process was an economic development plan to help Rhinelanders take advantage of the many tourists in the region, a flexible new Brown Street configuration that can adapt to changing transportation needs, and a long-term improvement plan to guide future development of public open spaces, pedestrian connections, and redevelopment of underutilized sites. Streetscape construction was completed in Spring 2017.

SERVICES PROVIDED:

PLANNING & COMMUNITY DEVELOPMENT; ECONOMIC DEVELOPMENT; URBAN DESIGN & LANDSCAPE ARCHITECTURE



City of Stoughton Downtown Revitalization



CLIENT

City of Stoughton

PROJECT LOCATION

City of Stoughton,
Wisconsin

REFERENCE

Rodney Scheel,
Director of
Planning and
Development
rjscheel@ci.stoughton.wi.us
608.873.6619

CONSTRUCTION COST

\$123/LF (INCLUDING
CURB, SIDEWALK,
LIGHTING AND
INCIDENTALS)

PROJECT DESCRIPTION: In an effort by the City, in partnership with downtown businesses, this on-going project includes revitalization and redevelopment of the downtown core and stimulates continued investment of public and private resources. The original Downtown Redevelopment Plan addressed the following issues:

- Coordination with City Officials, Staff, Businesses and Committees
- Funding Sources and Options
- Infrastructure Improvements and Cost Analysis
- Parking and Pedestrian Safety Issues
- Prioritization Schedule for Improvements
- Unified Design Theme and Streetscape Design

Upon completion of the Downtown Redevelopment Plan, the City created a Tax Increment District to help fund downtown planning, new infrastructure and revolving loan funds for facade improvements. The City is currently implementing the plan.

The City has received several awards for their efforts. Most recently they were awarded the 2008 Scenic Beauty Award by Citizens For A Scenic Wisconsin. The May 2007 issue of InTransition, the magazine of the New Jersey Transportation Authority, features the Downtown as a model for corridor redevelopment. In 2004, the City received the Historic Preservation Achievement Award from the Wisconsin State Historical Society and the Wisconsin Commercial Real Estate Women Grassroots Award in 2005.

SERVICES PROVIDED:

PLANNING & COMMUNITY DEVELOPMENT; ECONOMIC DEVELOPMENT, URBAN DESIGN & LANDSCAPE ARCHITECTURE, MUNICIPAL ENGINEERING, SURVEYING & GIS, WATER & ENVIRONMENTAL RESOURCES



City of Prairie du Chien Downtown Revitalization



CLIENT

City of Prairie du Chien

PROJECT LOCATION

City of Prairie du Chien,
Wisconsin

CONSTRUCTION COSTS

\$375/LF (INCLUDING CURB,
SIDEWALK, LIGHTING AND
INCIDENTALS)

PROJECT DESCRIPTION: A new highway bypass to Iowa was being developed by the WisDOT, which was to have anticipated dramatic impacts on the business activity throughout the City. The challenge to the City was how to best assure that traffic flow changes did not adversely affect businesses and actually use these changes to revitalize the downtown. The City challenged itself to define their community identity, develop community gateways, and designate pedestrian connections between various area landmarks.

Vierbicher Associates, Inc. built off of previous efforts and used recent design themes that the City had undertaken as part of becoming a Wisconsin Main Street Community. These initial ideas were part of visioning and design workshops and review meetings. Specifically defined elements and images enabled the City to apply for state funding. Challenges included developing comprehensive utility workscopes, including burying overhead utilities with WisDOT traffic plans and other redevelopment efforts that were continually changing.

Attachment: Vierbicher (6484 : Consider Approval of the James Street Streetscape Design Services*)

SERVICES PROVIDED:

PLANNING & COMMUNITY DEVELOPMENT; ECONOMIC DEVELOPMENT, URBAN DESIGN & LANDSCAPE ARCHITECTURE, MUNICIPAL ENGINEERING, SURVEYING & GIS, WATER & ENVIRONMENTAL RESOURCES



Municipal Engineering



PRAIRIE DU CHIEN, WI

Vierbicher helps municipalities grow, develop and revitalize

For 40 years, Vierbicher has worked with local governments of all sizes to bring their visions to reality. From concept to completion, our engineering services stimulate growth and revitalization in Wisconsin communities.

Our dedicated, multi-disciplinary staff makes it easy for municipalities to navigate complicated processes such as project planning, design, funding and implementation. We lend our expertise so clients can continue to focus on serving citizens and constituents in a meaningful way.

We understand municipalities today need to accomplish more with fewer resources. They also need access to professionals well versed in federal, state and local jurisdictions to ensure they meet all regulatory compliance requirements. We provide this for our clients by listening to, understanding and accommodating their needs. It's why our projects have high success rates.



DEFOREST, WI

PROJECT TYPES

- Capital Improvements Planning
- Stormwater Management
- Water Systems
- Sewerage Systems
- Site Development
- Roadway Maintenance and Design
- Business and Industrial Parks
- Recreational Facilities
- Flood Mitigation



Landscape Architecture



EG KROMREY MIDDLE SCHOOL, MIDDLETON, WI

We make spaces more livable and beautiful

At Vierbicher, we take the functional and make it beautiful. We're the creative partner you can trust to make your development or municipality a better place to live.

Our team of experts listens to your concerns, needs and goals before designing an outdoor environment that works in tandem with your buildings, roads, and storm water management systems.

We are known for assessments and strategies that can incorporate site constraints, historical context and public input. We also offer the expertise and support you may need during the bidding and construction phases. No matter how simple or complex, the end result is always the same: a more aesthetically pleasing environment.



SHOREWOOD HILLS, WI

PROJECT TYPES

- Streetscaping
- Recreational Facilities
- Sports Fields/Courts
- Stormwater Ponds, Rain Gardens, Fountains
- Building Landscape Plans
- Private Subdivision Open Space Landscaping



Planning and Community Development



VILLAGE OF SHOREWOOD HILLS, WI

Market-based planning, reality-based implementation

Vierbicher is an industry leader in planning and community development services. We don't just deliver pretty pictures, we bring your vision to life. We're known for our realistic plans that are developed based on analysis and local stories to ensure feasible, market-supported results.

We've partnered with forward-thinking Wisconsin towns, villages, cities and counties—some for decades—to develop plans that address each one's unique long-term needs. We work closely with our clients to develop comprehensive plans that strike a delicate balance: they meet goals, but they're realistic; they consider public input and state law requirements, but don't lose sight of long-term visions.

Best of all, our plans improve your local quality of life. We can take care of everything from grant writing, market analysis and drafting concepts all the way to completion. You can count on us to deliver results that will spur a healthier economic outlook for your community.

PROJECT TYPES: COMMUNITY DEVELOPMENT

- Mixed-Use Developments
- Corridor and Downtown Revitalization
- Residential Development
- Brownfield Development
- Parks and Recreation Facilities
- Business and Industrial Parks

PROJECT TYPES: PLANNING

- Market Analysis (commercial, retail, housing)
- Comprehensive Plans
- Strategic Area, Corridor and Neighborhood Plans
- Redevelopment Plans
- Development Impact Analysis
- Ordinance and Zoning Administration
- Tax Increment District Creation and Administration

City of De Pere, Wisconsin

**Request For Board of Public Works Action**

MEETING DATE: December 11, 2017

DEPARTMENT: Public Works

FROM: Eric Rakers

SUBJECT: Consider Updates to 2018 General Conditions and Standard Specifications

Listed in the memo are proposed updates to the City of De Pere's 2018 General Conditions and Standard Specifications. Specifications need to be updated on a regular basis to accommodate changes in the industry, as well as improving the clarity of the documents. The last update was completed in 2017. There are several changes to this document. Listed below is a summary of the major changes to the specifications.

Section 31 23 33 – Trenching, Backfilling, & Compacting

- (1) Deleted Section 2.1.E, Aggregate Slurry Backfill. This is covered under Section 31 05 10, Soils and Aggregates for Earthwork.

Section 32 11 26.16 – Pulverized Asphalt and Aggregate Base Course

- (1) This is a new section that has been added. Over the last three years, we have incorporated the technique of pulverizing asphalt into the existing base course and reusing for base course. This has produced a very strong base at a reduced cost to the project.

Section 32 16 13 – Concrete Curb and Gutter

- (1) Inserted the following language under Section 3.8:
 “B. Install two (2) number four (4) epoxy coated deformed reinforcement bars, 12 inches long between new and existing slabs. The bars shall be drilled six inches into the existing concrete slab.”
- (2) Under Section 2.5, clarified that reinforcement bar is epoxy coated.

Section 32 16 20 – Concrete Sidewalks and Driveways

- (1) Inserted the following language under 2.7.C to allow an additional manufacturer:
 “2. Cast DWD by Pioneer Detectable LLC”

Section 32 92 00 – Turf and Grasses

- (1) Under Section 2.2 Salvaged Topsoil, the following was added to clarify that material is to be pulverized and screened:
 - “B. Salvaged topsoil shall be free from deleterious substances, roots, sticks, weeds, brush, stones or other litter and waste products.
 - C. Pulverize and screen the salvaged topsoil such that 100 percent passes the 1-inch (25 mm) sieve and at least 90 percent passes the No. 10 (2.00 mm).”

Section 33 11 00 – Water Distribution Systems

- (1) Under Section 2.6.C., added the following to require a bolt connection from the curb stop to the curb box rod connection.
 - “5. Curb Stop to Curb Box Rod Connection
 - a. Material: Stainless steel 304
 - b. Bolt Size: ¼ - 20 x 1 ¼
 - c. Nylon Stainless Steel Locker”

The use of the stainless steel bolt was added to Section 3.9 under the Execution of Work.

- (2) Under Section 2.12.A., added a new type of joint restraint for water main as follows:
 - “3. Alpha™ ends may be used in lieu of a mechanical restraint.”

This same restraint was added to Section 3.2 under the Execution of Work.

Section 33 31 00 – Sanitary Sewer Systems

- (1) Under Section 3.1.D. added language to clarify how rings are installed in asphaltic concrete pavement and concrete pavement.
- (2) Under Section 3.1.E.3.b added the following language for service branches to cut in wyes:
 - “2) Provide concrete or hard wood blocking under the wye.”

Section 33 41 00 – Storm Sewer Systems

- (1) Under Section 2.3.D. eliminate reference to a sanitary sewer manhole cover.
- (2) Under Section 3.2.D. rearranged language on rings. Added language to clarify how rings are installed in asphaltic concrete pavement and concrete pavement.

Staff is requesting approval of the 2018 Standard Specification.

ATTACHMENTS:

- 2018 Standard Specifications (PDF)

CITY OF DE PERE



DEPARTMENT OF PUBLIC WORKS

2018 STANDARD SPECIFICATIONS

December 11, 2017

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P-1	EXCAVATION IN ASPHALT PAVEMENT

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P-2	PATCH WORK IN ASPHALT PAVEMENT
P-3	EXCAVATION IN CONCRETE PAVEMENT
P-4	PATCH WORK IN CONCRETE PAVEMENT
P-5	CORE OR BORE HOLE REPLACEMENT DETAIL IN CONCRETE OR ASPHALT

DIVISION 33

S-1	PRECAST CONCRETE MANHOLE
S-2	OUTSIDE DROP MANHOLE
S-3	PRECAST CONCRETE CONES AND COVERS ASTM C478
S-4	CHANNELIZATION
S-5	CHANNELIZATION
S-6	TYPE B INLET
S-7	SANITARY, STORM, AND WATER SERVICES
S-8	RISER FOR SERVICE CONNECTIONS
FI-1	TYPE A FIELD INLET
TW-1	SEWER TRACER WIRE
TW-2	WATER TRACER WIRE
W-1	HYDRANT
W-2	RESILIENT SEATED GATE VALVE
W-3	BUTTRESS FOR TEES, PLUGS, AND BENDS
W-4	WATERMAIN OFFSET

CITY OF DE PERE**SECTION 00 70 00
GENERAL CONDITIONS****DEFINITIONS AND TERMS**

Whenever any of the following listed terms appear in the contract documents, the intent and meaning shall be interpreted as follows:

AASHTO - American Association of State Highway Transportation Officials.

Addenda - All revisions of and supplements to the plans and specifications incorporated in or attached to and becoming an integral part of the contract documents.

Advertisement for Bids - The official notice inviting bids for proposed improvements.

Agreement - The written instrument which is evidence of the agreement between Owner and Contractor covering the Work.

ANSI - American National Standards Institute, Inc.

ASTM - American Society for Testing and Materials.

AWWA - American Water Works Association.

Bid - The offer or bid of the Bidder, submitted on the prescribed bid form, setting forth the prices of the work to be performed.

Bidder - Any individual, partnership or corporation submitting a bid for work contemplated, acting directly or through a duly authorized representative.

Bid Form - The approved form on which the City requires formal bids to be prepared and submitted for the work.

Bidding Documents - The Bidding Requirements and the proposed Contract Documents (including all Addenda).

Bidding Requirements - The advertisement or invitation to bid, Instructions to bidders, Bid security of acceptable form, if any, and the Bid Form with any supplements.

Board of Public Works – The Board of Public Works of the City of De Pere

Board of Park Commissioners - The Board of Park Commissioners of the City of De Pere.

City - The City of De Pere, a municipal corporation of the State of Wisconsin, located in the County of Brown.

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Completion Date - The calendar date shown in the bid on or before which the work contemplated under the contract shall be completed.

Contract - The written agreement between the City and the Contractor setting the obligations of the parties thereto. The contract includes the advertisement for bids, bid, contract form and contract bond, specifications, special provisions, plans, and notice to proceed, also any contract change orders and agreements that are required to complete the construction of the work in an acceptable manner, including authorized extensions thereof, all of which constitute one instrument.

Contract Bond - The approved form of security, executed by the Contractor and his surety or sureties, guaranteeing the faithful performance of the contract and the payment to persons entitled thereto, of all claims.

Contract Change Order - A written order, authorization or agreement executed by the Contractor and the City covering work not otherwise provided for, revisions in or amendments to the contract, or conditions specifically prescribed in the specifications as requiring contract change orders. Such document becomes a part of the contract when executed by the contracting parties.

Contract Time - The number of calendar days shown in the bid representing time allowed for the completion of the work contemplated under the contract.

Contractor - The party of the second part to the contract; the individual, partnership, joint venture, corporation or agency undertaking the execution of the work under the terms of the contract and acting directly or through a duly authorized representative.

Director of Public Works - The Director of Public Works of the City of De Pere or authorized designee.

Effective Date of the Agreement - The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

Engineer - The City Engineer of the City of De Pere or authorized designee.

Inspector - The authorized representative of the Engineer assigned to make detailed inspection of any or all portions of the work or materials therefore.

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

Milestone - A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

Notice to Proceed - A written notice to the Contractor of the time within which to begin the prosecution of the work.

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Owner - The City of De Pere, Wisconsin.

Plans - All contract drawings, including reproductions and revisions thereof, pertaining to the work covered by the contract.

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.

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 for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.

Special Provisions - Special directions, provisions or requirements peculiar to the project under consideration and not otherwise thoroughly or satisfactorily detailed or set forth in the specifications. Special provisions set forth the final contractual intent as to the matter involved, and shall prevail over these specifications and plans whenever in conflict therewith.

Specifications - The body of directions, provisions and requirements contained herein, together with written agreements and all documents of any description, made or to be made, pertaining to the method of manner of performing the work, the quantities, and the quality of materials to be furnished under the contract.

Subcontractor - Any individual, partnership, joint venture or corporation to whom the Contractor sublets any part of the contract.

Successful Bidder - The Bidder submitting a responsive Bid to whom Owner makes an award.

Supplier - A manufacturer, fabricator, supplier, distributor, material man, 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 Subcontractor.

Surety - The corporate body bound with and for the Contractor to insure acceptable performance of the contract and payment of all obligations pertaining to the work.

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 those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

Work - Work shall be understood to mean the furnishing of all labor, materials, equipment and other incidentals necessary or convenient to the successful completion of the project, or a particular part of the project, in accordance with the requirements of the contract.

BIDDING REQUIREMENTS

BID FORMS. Bid forms for bidding may be obtained from the office of the Director of Public Works.

All papers bound with or attached to the bid form are considered a part thereof and shall not be detached or altered when the bid is submitted. The plans, specifications and other documents designated in the bid form will be considered a part of the bid whether attached or not.

INTERPRETATION OF QUANTITIES. A schedule of quantities of work to be done or materials to be furnished is given in the Bid Form.

Itemized quantities of work are to be considered as approximate and for the comparison of bids only. After the contract is awarded, the quantities of work listed may be increased or decreased a reasonable amount without invalidating the bid prices.

EXAMINATION OF CONTRACT DOCUMENTS AND SITE OF WORK. The bidder is required to examine carefully the work site, bid form, plans, specifications, special provisions and contract forms for the work contemplated. The submission of a bid will be considered conclusive evidence that the bidder has made such examination and is satisfied to all conditions and contingencies.

No extra payment will be made over and above the contract price and no performance of the Contractor will be excused on account of any difference between the information relating to soil conditions provided by the City and the conditions disclosed at the site of the work during the progress of the contract.

INTERPRETATION OF CONTRACT DOCUMENTS. No oral representations or interpretations will be made to any bidder as to the meaning of the contract documents. Requests for an interpretation shall be made in writing and delivered to the Engineer at least ten (10) days before the time announced for opening the bids. Interpretations by the Engineer will be in the form of an addendum to the contract documents and, when issued, will be sent as promptly as is practical to all parties to whom the bid documents have been issued. All such addenda shall become part of the contract.

PREPARATION OF THE BID. The bidder shall submit its bid on forms included with the Bidding Documents. The bid shall be properly executed, and shall clearly specify a unit price for each item listed therein and shall also show the products of the respective unit prices and quantities, and the total amount of the bid obtained by adding the amounts of the several items.

In case of conflict between a unit bid price and the corresponding extended amount, the unit bid price will govern.

A bid submitted by an individual shall be signed by the bidder or by a duly authorized agent. A bid submitted by a partnership shall be signed by a member or a duly authorized agent thereof. A bid submitted by a corporation shall be signed by an authorized officer or duly authorized

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agent of such corporation, and the bid shall show the name of the State under the laws of which said corporation was chartered.

REJECTION OF BIDS. Bids may be rejected if they show any alterations of form, additions or amendments not called for, conditional bids, incomplete bids, erasures, or irregularities of any kind. Bids in which the unit prices for some items are out of proportion to the prices for other items, or bids in which unit prices are not submitted for each item of work listed may be rejected.

BID GUARANTEE. No bid will be considered unless accompanied by a certified check, bank's draft, bank's check, or a surety bond payable to the City of De Pere as designated in the Advertisement for Bids.

SUBMISSION OF BIDS. Each bid shall be placed, together with the Bid Guarantee, in a sealed envelope, so marked as to indicate the project number and the name and address of the bidder.

Bids will be received at the office of the Director of Public Works until the hour of the date designated in the Advertisement for Bids.

WITHDRAWAL OF BIDS. All bids filed with the Director of Public Works will be kept secure and unopened and may not be withdrawn, except on written request of the bidder or authorized representative made prior to expiration of the time set for receiving bids. If such withdrawal is made, the prospective bidder shall not be entitled to bid on the contract at hand unless the same is re-advertised and the bid will be returned unopened to such bidder after the public opening of bids.

OPENING OF BIDS. Bids will be opened and read publicly at the time and place indicated in the Advertisement for Bids.

The City of De Pere reserves the right to postpone the date and time for opening of bids at any time prior to the date and time announced in the advertisement.

PREQUALIFICATION OF BIDDERS. Each bidder shall pre-qualify by submitting Proof of Responsibility on forms furnished by the Director of Public Works. Such forms shall be filed with the Director of Public Works not later than the time and date indicated in the Advertisement for Bids. Bidders are required to complete 30% of the Work with their own forces.

COMPETENCY OF BIDDERS. Any one or more of the following may be considered as sufficient for the rejection of the bid or bids and disqualification of the bidder: Developments subsequent to establishment of bidder's competency and qualifications which would reasonably be construed as affecting the responsibility of the bidder. Conviction of a violation of a State or Federal law or regulation relating to or reflecting on the competency of the bidder.

- (a) More than one bid for the same work from an individual, partnership, or corporation under the same or different names.
- (b) Evidence of collusion among bidders.

- (c) Lack of responsibility as shown by past work for the City.
- (d) Noncompliance with terms of previous or existing contracts.
- (e) Uncompleted work, which might hinder or prevent the prompt completion of additional work if awarded.
- (f) Uncompleted work on which the actual time used has exceeded the contract time set therefore, or on which work the performance or progress is not satisfactory.

AWARD AND EXECUTION OF CONTRACT

CONSIDERATION OF BIDS. The bids received will be compared on the basis of the summation of the products of the quantities of work listed and the contract unit prices offered. In case of discrepancy between the gross sum shown in the bid and that obtained by adding the products of the quantities of work and the unit prices, the unit prices will govern, and any errors found in said products and summation will be corrected.

The City reserves the right to reject any or all bids, to waive any technicalities, to re-advertise for bids, or to proceed to do the work otherwise, if in its judgment, the best interest of the City will thereby be served.

AWARD OF CONTRACT. The award of contract, if it be awarded, will be to the lowest responsible bidder whose bid complies with all necessary requirements.

Should no award be made within 60 days after the date of opening bids, the lowest responsible bidder may, upon the expiration of such period, request in writing that the award be made within a stipulated time, not less than 10 days, exclusive of Sundays and holidays, after the date of his request. Should no award be made within the time so stipulated, the bidder will thereby be relieved of his obligation to execute a contract and contract bond.

RETURN OF BID GUARANTEE. The bid guaranty of all except the three lowest responsible bidders will be returned promptly after the bids are checked and tabulated.

The bid guarantee of the lowest responsible bidder will be returned as soon as the contract, contract bond, and other documents required to be filed by the bidder has been properly executed and submitted in proper form to the City; provided, however, that in the event no award is made within the extended time stipulated by the lowest responsible bidder, the bidder's guarantee will be returned promptly upon expiration of such extended time.

The bid guarantees of the second and third lowest responsible bidders will be returned as soon as the contract, contract bond, and other documents required have been properly executed by the successful bidder and submitted in proper form to the City; provided that the guarantees of such second and third bidders will not be retained longer than 70 days after the date of opening of bids without their express consent.

CONTRACT BOND. The successful bidder, at the time of submitting the contract for execution by the City shall deposit with the Director of Public Works a good and sufficient Performance Bond in the full amount of the contract and a Payment Bond in the amount of 100 percent of the contract. Forms for the contract bond are those included in the Bidding Documents.

INSURANCE. The Contractor shall provide the following insurance:

General. All insurance is the responsibility of the Contractor. The Contractor and each separate Subcontractor shall purchase and maintain such insurance as will protect him/her, and indemnify and safe harmless the City from any and all claims for General and Automobile Liability and Worker's Compensation/Employer's Liability, including claims for damages resulting in bodily injury, including but not limited to death, and property damage and arising out of or resulting from the Contractor's direct or indirect operations under this contract, whether such operations be performed by himself/herself or by a Subcontractor or anyone directly or indirectly employed by any of them.

This insurance shall be written for not less than any limit of liability specified herein, or required by law, whichever is the greater, notwithstanding that the policy may have lower limits of liability applying elsewhere in the policy, and shall include contractual liability insurance as applicable to the Contractor's obligations.

The Contractor's and Subcontractor's insurance shall always be primary with respect to the City's responsibilities under this contract. Contractor shall name the City as an additional insured under all policies required hereunder (except Worker's Compensation).

The Contractor's and Subcontractor's insurance shall contain a provision that provides 30 days written notice of cancellation or change to the City.

No insurance required under the Contract shall be carried with an insurer not authorized to do business in Wisconsin by the Office of the Insurance Commissioner. All insurance providers must have an AM Best Rating of A-VII or higher. The City reserves the right to disapprove any insurance company.

The Contractor shall provide the City with a certificate of insurance outlining the required coverage and naming the City as an additional insured thereunder for purposes of the Contract.

Types of Insurance

(a) General Liability

(1) Coverage Form must be the most recent version of the Commercial General "Occurrence" policy, including:

- (a) Premises and Operations
- (b) Products and Completed Operations
- (c) Advertising and Personal Injury
- (d) Explosion, Collapse and Underground Hazard Coverage
- (e) Contractual Insurance

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- (f) Broad Form Property Damage
- (g) Coverage for Independent Contractors
- (h) Care, Custody and Control coverages for City-owned materials at the worksite
- (i) Endorsement naming the City of De Pere, its employees, agents and assigns as Additional Insureds as respects work performed by the Contractor/Subcontractor for the City/Owner.

(2) Limits of Liability:

Bodily Injury/Property Damage Combined Single Limits:

Per Occurrence \$1,000,000

Products/Completed
Operations Aggregate \$1,000,000

Personal Injury/
Advertising Injury \$1,000,000
Medical Payments Limits \$10,000
General Aggregate \$1,000,000
Excess or Umbrella Liability \$5,000,000

(b) Automobile Liability

(1) Coverages must include the following extensions:

Comprehensive Form

- (a) All Owned Autos
- (b) All Hired Autos
- (c) All Non-Owned Autos
- (d) Mobile Equipment
- (e) Specialized Equipment
- (f) Contractual Liability
- (g) Uninsured Motorists to Limit of Policy
- (h) Additional Insured Endorsement naming City of De Pere, its employees, agents and assigns

(2) Limits of Liability:

Combined Single Limit/Bodily Injury and Property Damage:

\$1,000,000 per person/per accident

Uninsured/Underinsured Motorists: Limits Equal to Above Combined Single Limit

- (c) Aircraft Insurance
When Contractors or Subcontractors use their own, non-owned or hired aircrafts in operations of their business, they must provide evidence of Aircraft Liability and Property Damage Insurance equal to \$1,000,000 in limits per aircraft seat. The City/Owner, its employees, agents and assigns must be named as Additional Insured's as respects the particular project for which the craft is flown.
- (d) Worker's Compensation and Employers' Liability Insurance
Limits of Liability: Statutory
- (e) Professional Liability: \$3,000,000
(Errors and Omissions or other relevant coverage)
- (f) All required liability insurances shall be written on an "occurrence" policy form. Any deductibles or self-insured retentions shall be identified to the City and shall not exceed \$10,000 per occurrence.

Indemnification. The Contractor shall indemnify and hold harmless the City, its officers, agents and employees from and against all claims, damage, losses, and expenses including reasonable attorney's fees arising out of or resulting from the performance of the work specified in this Contract, provided that any such claim damage, loss or expense is caused in whole or in part by any negligent or intentional act or omission of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a part indemnified hereunder.

In any and all claims against the City, its officers, agents and employees by any employee of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation under this section shall not be limited in any way by any limitation of the amount or type of damages, compensation or benefits payable by or for the Contractor or any Subcontractor under Workers' Compensation Acts, disability benefit acts or other employee benefit acts.

Builders' Risk Insurance. (This does not apply to additions and/or alterations on existing structures.)

Unless otherwise provided, the City shall purchase and maintain fire insurance, extended coverage, vandalism and malicious mischief upon the entire structure on which the work of this contract is to be done equal to 100% of the insurable value (Builders' Risk-Completed Value).

The City may at its discretion, purchase All Risk Builders' Risk Coverage.

Waiver of Subrogation. The City, Contractor and Subcontractor waive all rights of subrogation against each other for damages caused by fire and other perils covered by insurance provided for under the terms of the Contract, except such rights as they may have to the proceeds of the insurance held by the City as trustee. The loss, if any, is to be made adjustable with and payable to the City as trustee for the insured Contractor and Subcontractor as their interests may appear, except in such cases as may require payment

of all or a proportion of said insurance to be made to the Mortgagee as his interest may appear.

EXECUTION OF CONTRACT. The Contract shall be executed by the Bidder, and the Contract Bond shall be executed by the principal and the sureties, and both shall be presented to the Director of Public Works within 10 days after the date of Notice of the Award of the Contract. No contract will be considered binding upon the City until the final execution of the contract agreement. The date of final execution of the Contract shall be the date on which the final signature is affixed.

FAILURE TO EXECUTE CONTRACT. Failure on the part of the Successful Bidder to execute a Contract and an acceptable Contract Bond, within 10 days after the date of Notice of Award of the Contract will be just cause for the annulment of the award and the forfeiture of the proposed guarantee to the City, not as a penalty but in payment of liquidated damages sustained as a result of said failure.

RIGHT OF BIDDER TO NULLIFY BID. Should the City fail to execute a Contract within 60 days after the filing by the Bidder of the Contract, together with Contract Bond and other documents required to be filed, all in proper form and order, the Bidder may nullify its acceptance of the Contract by filing due notice of such intent. Such notice shall be in writing and may be filed at any time after the expiration of 60 days after the filing by the Bidder of the required Contract Documents. Said notice shall stipulate the maximum number of days, not less than 10, exclusive of Sundays and holidays, within which the contract shall be executed by the City. Failure on the part of the City to execute the contract within the time so stipulated, shall be construed to be an acceptance on the part of the City of the nullification of the bid, and the bidder and surety will be relieved of all obligations to the City that may have been incurred under said contract and contract bond.

Said nullification is a purely voluntary act of the Bidder. Therefore, no liability or obligation toward the Bidder, surety, or any other party who may have an interest, directly or indirectly in such contract, will be incurred by the City.

Unless and until the bidder files such notice of nullification, and until such notice becomes effective, if filed, the contract may be executed by the City without prejudice to any of the terms and conditions thereof.

SCOPE OF WORK

INTENT OF PLANS AND SPECIFICATIONS. It is the intent of the plans and specifications to provide for the construction, execution and completion of a complete work or improvement, which the Contractor undertakes to do in full compliance with the plans, specifications, special provisions and contract. The Contractor shall perform all items of work covered and stipulated in the bid and perform altered and extra work and shall furnish, unless otherwise provided in the contract, all materials, implements, machinery, equipment, tools, supplies, transportation, and labor necessary to the prosecution and completion of the work.

INCREASED OR DECREASED QUANTITIES. It is agreed and understood that the quantities of any items of work shown on the plans or in the bid are subject to increase or decrease during the progress of the work. The Director of Public Works reserves the right to increase or decrease the quantities of any items of work, including increase or decrease of quantities by revision of plans, as may be considered necessary or desirable during the progress of the work to satisfactorily complete the construction. Such increases or decreases in quantities shall not be considered as a waiver of any conditions of the contract nor invalidate any of the provisions thereof.

REVISION OF PLANS. The right is reserved at any time during which the contract is in force to make such revisions in the plans or revisions in the terms of the contract as may be necessary. Revisions of the plans shall, insofar as practical, be ordered in writing before starting work on such revisions.

The work involved in such revisions shall be paid for at contract unit prices except as portions of it may qualify as extra work.

OMITTED ITEMS. The right is reserved to omit from the work any item or portion thereof found unnecessary to the improvement and such omission shall not be considered as a waiver of any conditions of the contract nor invalidate any of the provisions thereof. The Contractor will be paid for all work done toward the completion of the item or part thereof prior to such omission.

EXTRA WORK. The Director of Public Works may, at any time during the progress of the work covered by the contract, order other work or materials incidental thereto. All such work and materials that do not appear in the bid or contract as a specific item accompanied by a unit price, and which are not included under the price bid for other items in the contract, shall be designated as extra work. The Contractor hereby agrees to perform extra work whenever it is deemed necessary or desirable by the Director of Public Works to complete the project as originally contemplated, or as subsequently altered, and it shall be done in accordance with the requirements herein set forth.

Extra work shall be done under the supervision of the Engineer, whose decision shall be final and binding.

The Contractor shall not perform any extra work until a contract change order has been authorized. Claims for compensation for extra work performed which has not been authorized and not covered by a contract change order may be rejected.

The method of determining the basis of payment for extra work will be by unit bid price named in the bid for like items of work or by a supplemental schedule of prices bid by the Contractor in the bid when such bids are requested and when the unit bid price is not applicable. In the event that neither of the foregoing methods are applicable, the method of determining the basis of payment for extra work will be by unit prices submitted by the Contractor and accepted by the Director of Public Works, by a lump sum price submitted by the Contractor and accepted by the Director of Public Works, or by a cost plus 15% basis. Cost is hereby defined as including the actual cost of labor, foreperson over labor actually employed upon the extra work, labor liability

insurance, the Contractor's payroll taxes, if any, and materials delivered upon and forming a part of the extra work, but excluding all administration and clerical expenses, all supervision and superintendents above foreperson and use and upkeep of small tools, plant and machinery and rent of storage yard. Prevailing rental rates on special tools and equipment and actual cost of special services will be allowed the Contractor without the above-specified 15% added thereto. The 15% basis shall not be charged on the Contractor's equipment rates. Contractor equipment shall only be paid when it is in use for construction of the extra work as determined by the Engineer.

INGRESS AND EGRESS. The Contractor shall at all times conduct the work in such a manner as to insure the least possible obstruction to pedestrian and vehicular traffic serving abutting properties along the project and to that end shall, at its own expense, provide and maintain in reasonably passable condition such temporary roads and temporary approaches as are deemed reasonable and practical by the Engineer.

CONTROL OF WORK

AUTHORITY OF ENGINEER. All work shall be done under the supervision of and performed to the satisfaction of the Engineer. The Engineer shall decide all questions which arise as to the quality and acceptability of materials furnished, work performed, manner of performance (excluding safety), rate of progress of the work, interpretation of the plans and specifications, acceptable fulfillment of the contract, compensation, and disputes and mutual rights between Contractors under the specifications. The Engineer shall determine the amount and quantity of work performed and materials furnished, and the decision of the Engineer estimates shall be final. The Engineer's estimate in such event shall be a condition precedent to the right of the Contractor to receive money due under the contract.

The Engineer shall have executive authority to enforce and make effective such decisions and orders as the Contractor fails to carry out promptly and, in case of failure on the part of the Contractor to execute work ordered by the Engineer, the Engineer may, after giving notice in writing to the Contractor, proceed to execute such work as may be deemed necessary and the cost thereof shall be deducted from compensation due or which may become due the Contractor under the contract.

COORDINATION OF PLANS, SPECIFICATIONS AND SPECIAL PROVISIONS. These specifications, the plans, special provisions and all supplemental documents are essential parts of the contract and a requirement occurring in one is as binding as though occurring in all. They are intended to be cooperative, to describe and provide for a complete work. In the case of a discrepancy between the plans and the specifications, the plans shall govern; between the special provisions and the specifications or the plans, the special provisions shall govern.

The Contractor shall take no advantage of any apparent error or omission in the plans or specifications, and the Engineer shall be permitted to make such corrections and interpretations as may be deemed necessary for the fulfillment of the intent of the plans and specifications.

LINE AND GRADE. The Engineer will furnish and set the construction survey stakes or reference points necessary to establish the alignment and grade for all types of work. These

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stakes and points shall constitute the field control by and in accordance with which the Contractor shall govern and execute the work. The Contractor shall furnish, at its own expense, such other facilities and labor as may be required by the Engineer in establishing such points and lines necessary to the prosecution of the work after the work is started. The Contractor shall furnish free of charge all additional stakes and other material necessary for making and maintaining the points and lines given. The Contractor shall set and shall be responsible for all additional stakes or markings needed to facilitate layout or construction of the work.

The Contractor shall be responsible for the preservation of all stakes and points, and if any of these survey stakes or points have been carelessly or willfully destroyed or disturbed by the Contractor, the cost to the City of replacing them may be charged against the Contractor and be deducted from the payment of the work.

COOPERATION OF CONTRACTOR. The City reserves the right at any time to contract for and perform other or additional work on or near the Work covered by any contract.

The Contractor shall control construction operations in such a manner as to minimize the extent of the land area disturbed during construction. Areas that are disturbed and are not needed in construction operations shall be restored by the Contractor and no payment shall be made to the Contractor for this resolution.

The Contractor shall arrange and conduct work so as not to interfere with the operations of other Contractors engaged upon or near the work and to join work to that of others in a proper manner, and in accordance with the spirit of the plans and specifications, and to perform work in the proper sequence in relation to that of other work, all as may be directed by the Engineer. The Contractor shall be held responsible for any damage done by it or its agents to the work performed by another Contractor.

In case of a dispute arising between two or more Contractors engaged on the same improvement as to the respective rights of each under the specification, the Engineer shall determine the matter at issue and shall define the respective rights of the various interests involved in order to secure the completion of all parts of the work in general harmony and with satisfactory results. The Engineer's decision shall be final and binding on all parties concerned and shall not in any way be a cause for claims for extra compensation by any of the parties.

The Contractor shall have at all times during the progress of construction, irrespective of the amount of work sublet, a competent superintendent or designated representative capable of reading and thoroughly understanding the plans and specifications, as agent on the work, who shall receive instructions from the Engineer or authorized representatives. The superintendent or designated representative shall have full authority to execute the orders or directions of the Engineer without delay and to supply promptly such materials, tools, plans, equipment, and labor as may be required to properly perform the work.

REMOVAL OF UNAUTHORIZED AND UNACCEPTABLE MATERIALS AND WORKMANSHIP. Work performed without lines and grades being given, work performed beyond the lines and grades shown on the plans, or as given, except as herein provided, or any extra work performed without authority, will be considered as unauthorized and may not be

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measured or paid for by the City. Work so done may be ordered removed or replaced at the Contractor's expense.

Work which is not within reasonably close conformity with the plans and specifications and which results in an inferior or unsatisfactory product will be considered as unacceptable work.

Unacceptable work, whether the result of poor workmanship, use of defective materials, damage through carelessness or any other cause, found to exist prior to the final acceptance of the work, shall be immediately removed and acceptably replaced or otherwise satisfactorily corrected by and at the expense of the Contractor.

OWNER MAY CORRECT UNACCEPTABLE WORK. If Contractor fails within a reasonable time after written notice from Engineer to correct unacceptable Work, or to remove and replace rejected Work as required by Engineer, or if Contractor fails to perform the Work in accordance

with the Plans and Specifications Documents, or if Contractor fails to comply with any other provision of the Contract documents, Owner may, after seven days written notice to Contractor, correct, or remedy any such deficiency.

In exercising the rights and remedies, 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, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site, 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.

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) incurred or sustained by Owner in exercising the rights and remedies will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work and the Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefore. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work others destroyed or damaged by correction, removal, or replacement of Contractor's unacceptable Work.

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 right and remedies.

ACCEPTANCE OF WORK. The Engineer will make an inspection of any section of work included in the contract as soon as practicable after notification by the Contractor and confirmation by the Inspector that such work has in their opinion been completed and final cleaning up performed. Whenever any section of the work constructed by the Contractor shall

have been satisfactorily completed at the time of final inspection, the Engineer shall give written notice of final acceptance to the Contractor.

Should the inspection disclose any work, in whole or in part, as being unsatisfactory, the Engineer will give the Contractor the necessary instructions for correction of the same, and the Contractor shall immediately comply with and execute such instructions for corrections of the same. Upon correction of the work, another inspection will be made which shall constitute the final inspection provided the work has been satisfactorily completed. In such event, the Engineer will make the final acceptance and notify the Contractor in writing of his acceptance as of the date of final inspection.

In the event that the testing of materials is incomplete at the time of final inspection and the work is satisfactorily completed, the Engineer shall give a written notice of partial acceptance, pending receipt of satisfactory test reports; whereupon, the final acceptance shall be given without any additional inspection.

CONTROL OF MATERIALS

SOURCE OF SUPPLY AND QUALITY. The specifications require the use of new, high quality materials throughout the work, except as may specifically be provided elsewhere in the specifications, on the plans, or in the special provisions, incorporated in the work in such a manner as to produce completed construction which is workmanlike and acceptable in every detail.

PLANT INSPECTION. The Engineer may undertake the inspection of materials at the plant, if deemed necessary or desirable, or the Engineer may designate another agency for the purpose.

RIGHT TO INSPECT AND TEST MATERIALS. To ascertain if materials comply with contract requirements, samples shall, at the discretion of the Engineer, be taken at the source or at job destination, and as often as the Engineer deems it advisable or necessary.

The Contractor shall furnish without charge all samples required by the Engineer and shall afford such facilities as may be required for collecting and forwarding them.

The Contractor may be required to furnish, when requested by the Engineer, a written statement giving the origin, composition or process of manufacture of a material.

Unless otherwise provided in the contract, it shall be the intent of these specifications that conformity of materials to the specified requirements shall be met at the time, or just prior to the time, they are incorporated into the work.

All tests shall be made in accordance with the method described and designated herein or in the contract. References to ASTM specifications shall be understood to mean the Standards or Tentative Standards of the American Society for Testing and Materials. Reference to the AASHTO specifications shall be understood to mean the Standard or Interim Specifications for Highway Materials and Methods of Sampling and Testing of the American Association of State Highway Transportation Officials. Unless otherwise designated, references to various standard

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specifications and test methods shall be understood to mean the specification or test method which is current on the date of the advertisement for bids.

Test results obtained on samples of materials furnished by the Contractor shall be available to the Contractor.

The City reserves the right to deduct from monies which are due or may become due the Contractor any costs incurred in the sampling and testing of materials not used under the contract.

UNCOVERING WORK. If any work is covered contrary to the written request of Engineer, it must, if requested by Engineer, be uncovered for Engineer's observation and replaced at Contractor's expense.

If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, 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, furnishing all necessary labor, material, and equipment.

If it is found that the uncovered Work is defective, 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 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 Owner shall be entitled to an appropriate decrease in the Contract Price.

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.

STORAGE OF MATERIALS. Materials shall be so stored as to insure the preservation of their quality and suitability for the work. Stored materials, even though approved before storage, shall be subject to an inspection prior to their use in the work and shall meet the requirements of the contract at the time they are used. Stored materials shall be located so as to facilitate inspection.

DEFECTIVE MATERIALS. All materials that are not in reasonably close conformity with the requirements of the specifications shall be considered defective and shall be rejected. Rejected materials shall be removed from the site of the work unless otherwise permitted by the Engineer. Any defective materials, which have been subsequently corrected, shall not be used or accepted until re-evaluated and approved by the Engineer. Materials which have been incorporated in the work and subsequently found to be defective may, with the permission of the Engineer, after a determination that reasonably acceptable work has been produced, be left in place. An appropriate adjustment will be made in the contract price for such materials or for the work in which such materials are incorporated.

LEGAL RELATIONS AND PUBLIC RESPONSIBILITY

LAWS TO BE OBSERVED. The Contractor shall at all times observe and comply with all federal, state, and local laws, regulations and ordinances which are in effect or which may be placed in effect during the contract period and which in any manner affect the conduct of the work. The Contractor shall indemnify and save harmless the City and all of its officers, agents and employees against any claim or liability arising from or based on the violation of any such law, ordinance, or regulation, whether by himself or his employees, subcontractors, or agents.

DESCRIPTION. The vendor/contractor agrees that, in performing under this purchase order/contract with the City of De Pere, it will not discriminate against any employee, applicant for employment or any other person or member of the public on the basis of age, race, creed, color, disability, marital status, sex, national origin, ancestry, arrest record, conviction record, military service, use or non-use of lawful products off the employer's premises during nonworking hours, declining to attend a meeting or to participate in any communication about religious matters or political matters, or any other basis provided under Wis. Stats.§111.321.

PERMITS AND LICENSING. The Contractor shall procure all permits and licenses, pay all charges and fees, and give all notices necessary and incidental to the due and lawful prosecution of the work.

PATENTED DEVICES, MATERIALS AND PROCESSES. It is mutually understood and agreed that without exception contract prices are to include all royalties and costs arising from patents, trademarks, and copyrights in any way involved in the work. The Contractor and the surety in all cases shall indemnify and save harmless the City from any and all claims for infringement by reason of the use of any such patented design, device, material or process to be involved under the contract, and shall indemnify the City for any cost, expenses, and damages which it may be obliged to pay, by reason of any such infringement, at any time during the prosecution or after the completion of the work.

SAFETY, HEALTH AND SANITATION. The Contractor shall comply with all federal, state and local laws governing the safety, health and sanitation, and shall provide all safeguards, safety devices and protective equipment and take any other needed actions, on his own responsibility or as the Engineer may determine, reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

PUBLIC CONVENIENCE AND SAFETY. The Contractor shall avoid as far as possible the maintenance of any condition, which might be deemed at law to be an attractive nuisance. Where such condition is unavoidable or where apparent or potential hazards occur, incident to conduct of the work, the Contractor shall maintain a proper watch or provide other reasonable safeguards. The Contractor and its surety shall be responsible for all damage, bodily injury, or death arising through his negligence, either in maintaining an attractive nuisance or otherwise.

The Contractor shall notify the Engineer, the Police Chief and the Fire Chief at least 24 hours before it becomes necessary to blockade a street.

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The Contractor shall notify the De Pere Water Department, the Wisconsin Public Service Corporation, Railroad Companies, and the owners of all other property that may be affected by the Contractor's operations at least 72 hours before breaking ground.

The Contractor shall not hinder or interfere with any persons in the protection of such property, or with the operation of utilities, at any time. The Contractor shall obtain all necessary information in regard to existing utilities. The Contractor shall protect such utilities from injury and shall avoid unnecessary exposure so that they will not cause injury to the public.

The Contractor shall obtain a permit from the De Pere Water Department for the use of City water.

BARRICADES, WARNING SIGNS AND FLAGGERS. When any section of a street is closed to traffic, the Contractor shall furnish, erect, and maintain barricades at each end of the closed section and at all intersecting streets. The Contractor shall furnish, erect, and maintain at these locations such warning signs and lights as may be deemed necessary by the Engineer. The Contractor shall place additional barricades, warning signs and lights as may be necessary to protect the work and safeguard vehicular and pedestrian traffic. All signing and barricading will be done in accordance with the latest WisDOT Manual of Traffic Control Devices.

Where it is necessary to maintain a street open to traffic, the Contractor shall furnish, erect and maintain such barricades, warning signs, warning lights, and flaggers as may be necessary to protect the work and safeguard vehicular and pedestrian traffic.

The Contractor shall maintain the roadway in such condition that the public can travel the same in convenience and safety.

The Contractor will be held responsible for all damages to the work due to failure of barricades, warning signs, warning lights, flaggers and other workers assigned to protect it, and whenever evidence of such damage is found prior to acceptance, the Engineer may order the damaged portion immediately removed and replaced by the Contractor at the Contractor's expense, if, in the Engineer's opinion, such action is justified.

USE OF EXPLOSIVES. The Contractor shall observe the utmost care and shall limit the number and size of the charges to as not to endanger life and property. All explosives shall be stored in a secure manner and all such storage places shall be marked clearly **EXPLOSIVES**, and shall be in care of competent workers at all times. The methods of use, storing and handling of explosives and highly inflammable material shall conform with all state and local laws and regulations.

PROTECTION AND RESTORATION OF PROPERTY. The Contractor shall notify, in writing, the owners of all corporate or private property, which interferes with the work, advising them of the nature of the interference, and shall arrange with them for the disposition of such property. The Contractor shall furnish the Engineer upon request with copies of all such notifications and final agreements.

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The Contractor shall use every reasonable precaution to prevent the damage or destruction of corporate or private property. The Contractor shall protect and carefully preserve all property marks until the City or an authorized surveyor or agent has witnessed or otherwise referenced their locations or relocation.

The Contractor shall be responsible for the damage or destruction of property of any character resulting from neglect, misconduct, or omission in manner or method of execution or non-execution of the work, or caused by defective work or the use of unsatisfactory materials, and shall restore such property to a condition similar or equal to that existing before such damage or injury was done, by repairing, rebuilding, or replacing it as may be directed, or shall otherwise make good such damage or destruction in an acceptable manner. Upon the Contractor's failure to do so, the Engineer may, after the expiration of a period of 48 hours after giving written notice, proceed to repair, rebuild or otherwise restore such property as may be deemed necessary, and the cost thereof shall be deducted from any compensation due or which may become due the Contractor under this contract.

RESPONSIBILITY FOR DAMAGE CLAIMS. The Contractor and its surety shall indemnify and save harmless the City and all of its officers, officials, agents and employees from all suits, actions or claims of any character brought because of any injuries or damages received or sustained by any person, persons, or property on account of the operations of the said Contractor; or on account of or in consequence of any neglect in safeguarding the work, or through use of unacceptable materials in constructing the work; or because of any act or omission, neglect or misconduct of said Contractor; or because of any claims or amount recovered for any infringement of patent, trademark or copyright; or from any claims or amounts arising or recovered under the worker's compensation law; or any other law, ordinance, order or decree; and so much of the money due the said Contractor under and by virtue of this contract as shall be considered necessary by the Board of Public Works for such purposes, may be retained for the use of the City; or, in case no money or insufficient money is retained, the Contractor's surety shall be held.

The City shall not be liable to the Contractor for damages or delays resulting from work by third parties or by injunctions or other restraining orders obtained by third parties.

It shall be the Contractor's responsibility to see that all of the contract operations incidental to the completion of this contract are covered by public liability and property damage liability insurance in order that the general public or any representative of the contracting authority may have recourse against a responsible party for injuries or damages sustained as a result of said contract operations. This requirement shall apply with equal force, whether the work is performed by the Contractor, or by a Subcontractor or by anyone directly or indirectly employed by either of them.

CONTRACTOR'S RESPONSIBILITY FOR WORK. Until acceptance of the Work by the Engineer, the Contractor shall have the charge and care thereof and shall take every precaution against injury or damage to any part thereof by the action of the elements, or from any other cause, whether arising from the execution or non-execution of the Work. The Contractor shall rebuild, repair, restore and make good all injuries or damages to any portion of the Work occasioned by any of the above causes before acceptance and shall bear the expense thereof,

except damage to the Work due to unforeseeable causes beyond control of and without the fault or negligence of the Contractor, including but not restricted to acts of God, of public adversaries or of governmental authorities. In case of suspension of work from any cause whatever, the Contractor prior to suspension shall take such precautions as may be necessary to prevent damage to the project, provide for normal drainage and shall erect any necessary temporary barricades, signs or other facilities, at the Contractor's expense, as directed by the Engineer.

PERSONAL LIABILITY OF PUBLIC OFFICIALS. In carrying out any of the provisions of this contract or in exercising any power or authority granted to them thereby, there shall be no personal liability upon the City, its officers, officials, agents and employees, it being understood that in such matters they act as agents and representatives of the City. Any right of action by the Contractor against the City, or its agents or employees, is hereby expressly waived.

PROSECUTION AND PROGRESS

SUBLETTING OR ASSIGNMENT OF CONTRACT. The Contractor shall not sublet, sell, transfer, assign, or otherwise dispose of the contract or any portion thereof, or of its right, title or interest therein, without written consent of the Engineer.

Consent to sublet any portion of the contract shall not be construed to relieve the Contractor of any responsibility for the fulfillment of the contract or to release the Contractor of liability under the contract and bond.

In case such consent is given, the Contractor will be permitted to sublet a portion thereof, but shall perform with its own organization work amounting to at least one-third of the original contract amount, unless a larger portion is specified in the contract.

Requests for permission to sublet any portion of the contract shall be in writing and accompanied by a Qualification Statement showing that the organization, which will perform the work, is experienced and equipped for such work.

PROSECUTION OF THE WORK. The Contractor shall not begin the work to be performed under the contract before receiving written notification from the Engineer to do so, and shall thereupon begin the work within ten days after the date of such written notice.

Notice of intention to start work shall be given to the Engineer at least 72 hours in advance of beginning work.

The Contractor shall employ an ample workforce and provide a construction plant properly adapted to the Work, of sufficient capacity and efficiency to accomplish the Work in a safe and workmanlike manner at the rate of progress specified.

The Contractor shall give personal attention to and shall supervise the Work to the end that it shall be prosecuted faithfully, and when not personally present on the Work, shall at all times be represented by a competent superintendent who shall receive and obey all instructions or orders given under the contract, and who shall have full authority to execute the same, and to supply materials, tools and labor without delay, and who shall be the legal representative of the

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Contractor. The Contractor shall be liable for the faithful observance of any instructions delivered to it or to its authorized representative.

In the event Work is prosecuted during adverse weather conditions, the Contractor will be required to exercise such precautions, necessary to produce satisfactory work, and shall protect the finished Work from the elements. It is agreed and understood that the cost thereof has been included in the unit prices bid for the various items of Work in the Contract and that no extra compensation will be allowed therefore.

OVERTIME WORK. Overtime and shift work may be established as a regular procedure. The Contractor may request overtime and shift work periodically to accommodate construction sequencing and/or weather delays. The Engineer shall evaluate the request and make a determination on approval. If approved, the Engineer will issue written permission. Such permission may be revoked at any time. No work other than overtime and shift work established

as a regular procedure shall be done between the hours of 6:00 P.M. and 7:00 A.M., nor on Saturdays, Sundays, or legal holidays, except such work as is necessary for the proper care and protection of the work already performed or except in case of an emergency.

All costs for overtime inspection, except those occurring as a result of overtime and shift work established as a regular procedure, and other approved circumstances, shall be paid by the Contractor. Overtime inspection shall include inspection required during holidays, Saturdays, Sundays, and any weekday between the hours of 6:00 P.M. and 7:00 A.M. Such costs will include but will not necessarily be limited to engineering, inspection, general supervision and other overhead expenses, which are directly chargeable to the overtime work. All such charges shall be deducted by the City from payment due the Contractor.

LIMITATION OF OPERATIONS. At any time when, in the judgment of the Engineer, the Contractor has obstructed the safe and convenient movement of vehicular and pedestrian traffic, or is carrying on operations on a greater portion of the project than is necessary for the proper prosecution of the Work, the Engineer may require the Contractor to finish the sections in which Work is in progress before Work is started on any additional section.

WORKFORCE. The Contractor shall at all times employ sufficient supervision and labor for prosecuting and several classes of work to full completion in the manner and time requested by the Contract.

All superintendents, forepersons and workers shall have sufficient skill and experience to properly perform the Work assigned. Workers engaged in special work or skilled work shall have sufficient experience in such work and in the operation of the equipment required to perform all work properly and satisfactorily.

Any person employed by the Contractor or by any Subcontractor who, in the opinion of the Engineer does not perform in a proper and skillful manner (or is intemperate or disorderly) shall, at the written request of the Engineer, be removed forthwith by the Contractor or Subcontractor employing such person, and shall not be employed again in any portion of the work without the approval of the Engineer.

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METHODS AND EQUIPMENT. The Contractor shall provide and furnish all machinery, equipment, and tools necessary to perform the Work, which shall be in such condition and of such capacity as will produce Work of satisfactory quality within the contract time.

Failure on the part of the Contractor to provide adequate equipment, maintained in proper working order, may be sufficient cause for suspension of specific operations until compliance is obtained or may constitute cause for default of Contract.

Any plan or method of work suggested by the Engineer to the Contractor but not specified or required, if adopted or followed by the Contractor in whole or in part, shall be used at the risk and responsibility of the Contractor; and the City shall assume no responsibility therefore.

SUSPENSION OF WORK. The Engineer shall have the authority to order the partial or complete suspension of operation for such period or periods as may be deemed necessary, in the interest of public safety and convenience, or due to unsuitable weather and such other conditions as are considered unfavorable for prosecution of satisfactory work, or for such time as is necessary due to the failure on the part of the Contractor to carry out orders given or to perform any or all of the provisions of the contract. Authorizations or orders to suspend work shall be in writing. Unless otherwise specifically provided, no additional or extra compensation or additional contract time will be allowed due to such suspensions of operations.

DETERMINATION AND EXTENSION OF CONTRACT TIME. The time for completion of the Work contemplated under the Contract will be calendar days or completion date. For calendar day contracts, work will be specified in the Bid as a specific number of calendar days including Sundays and holidays on or before which the Work shall be completed. For completion date contracts, work will be specified in the bid as a date. Fifteen (15) percent of the contract time as specified is allocated to bad weather, which will not warrant an extension of contract time.

The Contract starting date, for purposes of determining contract time and extensions, will be construed to be the date construction operations are started or the tenth day following the date of written notification by the Engineer to the Contractor to begin work, whichever is earlier.

Contract time will not be charged during periods of complete suspension of operations, when ordered by the Engineer suspending operations.

Contract time will be extended by an amount as is mutually agreed upon by the Engineer and the Contractor, on the basis of contract change orders involving alterations in the contract affecting the prosecution of work, or involving extra or additional work, when such alterations are necessary for the purposes or convenience of the Engineer, or when such extra or additional work is of such character or is ordered to be done at such a time that the amount of time reasonably necessary to perform such work is disproportionate to the contract time originally set up in the bid.

Should the Contractor find it impossible to complete the Work on or before the time for completion as specified in the Contract, or extended as above set forth, the Contractor may, at any time prior to 3 days after completion of Work under the Contract, make a written request to

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the Engineer for an extension of time, setting forth therein reasons to justify the granting of the request. If the Engineer finds that the work was delayed because of conditions beyond the control of the Contractor, it may grant an extension of time for completion in such amount as it finds to be warranted and justified.

LIQUIDATED DAMAGES. Should the Contractor fail to complete the work within the time agreed upon in the contract, interim completion dates included in the work sequence, or within such extra time as may have been allowed by extensions, there shall be deducted from any monies due or that may become due the Contractor, for each and every calendar day, including Sundays and holidays, that the work shall remain uncompleted, a sum specified as follows:

LIQUIDATED DAMAGES		
ORIGINAL CONTRACT AMOUNT		DAILY CHARGE
FROM MORE THAN	TO AND INCLUDING	CALENDAR DAY
\$0	\$150,000	\$355
\$150,000	\$300,000	\$455
\$300,000	\$500,000	\$615
\$500,000	\$1,000,000	\$880
\$1,000,000	_____	\$1140

This sum shall be considered and treated not as a penalty but as fixed, agreed and liquidated damages due the City from the Contractor by reason of inconvenience to the public, added cost of engineering and supervision, and other items which have caused an expenditure of public funds resulting from the Contractor's failure to complete the Work within the time specified in the Contract.

Permitting the Contractor to continue and finish the Work or any part of it after the time fixed for its completion, or after the date to which the time for completion may have been extended, shall in no way operate as a waiver on the part of the City of any of its rights under the contract.

DEFAULT ON CONTRACT. If the Contractor fails to begin the Work under the Contract within the time specified, or discontinues the prosecution of the work, or for any other cause whatsoever fails to carry on the work in an acceptable manner, the Engineer shall give notice in writing to the Contractor and the Contractor's surety of such delay or default, specifying the same.

If the Contractor, within a period of 10 days after the date of such notice, shall not proceed in accordance therewith, then the Board of Public Works or Director of Public Works shall have full power and authority to forfeit the rights of the Contractor and at its option, to call upon the surety to complete the work in accordance with the terms of the contract; or it may take over the work, including any or all materials and equipment on the ground as may be suitable and acceptable, and may complete the work by or on its own

force account, or may enter into a new agreement for the completion of said Contract according to the terms and provisions thereof, or use such other methods such as, in its opinion, shall be required for the completion of said Contract in an acceptable manner. All costs and charges incurred by the City, together with the cost of completing the work under contract, shall be deducted from any monies due or which may become due on such Contract. In case the

expenses so incurred by the City shall be less than the sum which would have been payable under the contract if it had been completed by said Contractor, then said Contractor shall be entitled to receive the difference subject to any claims for liens thereon which may be filed with the City, or any prior assignment filed with it, and in case such expense shall exceed the sum which would have been payable under the contract, the Contractor and the surety shall be liable and shall pay to the City the amount of such excess.

TERMINATION OF THE CONTRACTOR'S RESPONSIBILITY. Whenever the improvement contemplated and covered by the contract shall have been completely performed on the part of the Contractor and all parts of the Work had been approved and accepted by the Engineer, according to the contract, and the final estimate paid, the Contractor's obligations shall then be considered fulfilled, except as set forth in the contract bond.

EMERGENCY DEFERMENT OR CANCELLATION OF CONTRACT. The City and the Contractor, in the event of national emergency or a shortage of materials, labor, or equipment, beyond the control of the Contractor may upon a finding by the City that such emergencies or shortages do exist, and by reason of which such Contractor is unable to proceed with the construction contract, defer such construction in whole or in part, or cancel such construction contract, or any part thereof.

MEASUREMENT AND PAYMENT

TAX EXEMPT STATUS. The City of De Pere is tax exempt under Wis. Stats § 77.54(9m), sales tax is not included for the storage, use, and consumption of tangible personal property sold to a Contractor which becomes a component of a facility that is owned by the City. A facility is defined as building, shelter, parking lot, parking garage, athletic field, athletic park, storm sewer, water supply system, or sewerage and waste water treatment facility, but does not include a highway, street or road. Payments for components utilized in the above constructed facilities shall not include a sales tax.

MEASUREMENT OF QUANTITIES. All work completed under the contract will be measured for final payment by the Engineer to determine the quantities of work performed, except when agreements have been made providing for compensation on the basis of plan quantities or when contract change orders have been executed providing for other methods of measurement. The Contractor will be paid for the actual amount of work performed in accordance with the contract, as shown by the final measurements or upon the basis of plan quantities.

SCOPE OF PAYMENT. The Contractor shall accept the compensation, as herein provided, in full payment for furnishing all materials, labor, tools and equipment necessary for performing all work contemplated and embraced under the contract; also for loss or damage arising from the nature of the work or from the action of the elements, or from any unforeseen difficulties which may be encountered during the prosecution of the work until the final acceptance by the Engineer; and for all insurance, compensation and risks of every description connected with the prosecution of the Work; also for all expenses incurred in consequence of the suspension or discontinuance of the Work as herein specified; and for any infringement of patent, trademark, or copyright; and for completing the Work according to the Contract.

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The payment of any current estimate prior to final acceptance of the Work by the City shall in no way constitute an acknowledgment of the acceptance of the Work, nor in anyway prejudice or affect the obligation of the Contractor, at its expense, to repair, correct, renew or replace any defects or imperfections in the construction or in the strength or quality of the materials used in or about the construction of the Work under Contract and its appurtenances, or any damage due or attributable to such defects, which defects, imperfections or damage shall have been discovered on or before the final inspection and acceptance of the Work. The Engineer shall be the sole judge of such defects, imperfections or damage and the Contractor shall be liable to the City for failure to correct the same as provided herein.

No monies otherwise payable under the Contract shall become due and payable if the City so elects until the Contractor shall satisfy the City that it has fully settled or paid for all materials used in or upon the work and labor done in connection therewith.

INCREASED OR DECREASED QUANTITIES. Whenever the quantity of any item of work as given in the bid shall be increased or decreased as required to satisfactorily complete the work, payment for such item of work shall be made on the basis of the actual quantity completed at the original contract unit price.

Compensation for alterations in plans for quantities or work requiring contract change orders shall be as stipulated in such agreements.

EXTRA WORK. When extra work has been partially or completely performed, the Engineer may compute the amount thereof, which has been completed and may include such amount in partial payment estimated and in the final estimate certified to the Board of Public Works.

OMITTED ITEMS. The City shall have the right to cancel the portions of the contract relating to the construction of any items therein by the payment to the Contractor of a fair and equitable amount to be agreed upon by contract change order covering all items of cost incurred prior to the date of cancellation or suspension of the Work by order of the Engineer.

Acceptable materials ordered by the Contractor and not canceled prior to the date of cancellation of the Work by order of the Engineer and which are delivered on the work will be paid for at the actual cost to the Contractor and shall thereupon become the property of the City.

PARTIAL PAYMENTS. Partial payments based on the value of the Work performed or materials furnished, at contract or agreed unit or lump sum prices, will be made to the Contractor as the work progresses, except that partial payments will not be made as long as the Contractor fails to comply with any order of the Engineer in accordance with the Contract.

Once each month, provided that a payment of \$5,000 or more becomes due, the Engineer will make an estimate of the quantities of work performed and the value thereof at contract or agreed unit or lump sum price.

The Engineer may, upon presentation by the Contractor of receipted bills, freight bills or other satisfactory evidence of payment, include in the estimate prepared for partial payment the value of non-perishable materials which are to form a part of the completed work, produced or

purchased, and delivered and stored in the vicinity of the work at such locations where they will be available for ready incorporation into the work.

From the total amount of the estimate, determined as provided above, the City shall, after deducting previous payments made, pay to the Contractor 95% of the amount of the approved invoice, retaining 5% of the estimate of work done until 50% of the work has been completed.

At 50% completion of the work, the previous retainage shall not yet be paid, but further partial payments shall be made in full to the Contractor without additional retainage being taken unless the Engineer certifies that the work is not proceeding satisfactorily. If the work is not proceeding satisfactorily, additional amounts may be retained. After substantial completion, an amount retained may be paid to the Contractor, keeping retained only such amount as is needed for the remaining work.

Should any defective work or material be discovered, or should a reasonable doubt arise as to the integrity of any part of the work completed previous to the final acceptance and payment, there will be deducted from the first estimate rendered after the discovery of such work an amount equal in value to the defective or questioned work, and this work will not be included in a subsequent estimate until the defects have been remedied or the causes for doubt removed.

All material and work covered by partial payments made thereupon become the property of the City, but this provision shall not be construed as relieving the Contractor from the sole responsibility for all materials and work upon which payments have been made or the restoration of any damaged work, or as a waiver of the right of the City to require the fulfillment of all terms of the contract.

ACCEPTANCE AND FINAL PAYMENT. When the project has been finally accepted, the Engineer will prepare the final estimate of the quantities of Work performed. After review of such final estimate, the Contractor will be paid the entire sum found to be due after deducting all previous payments and all amounts to be deducted under the provisions of the Contract. All prior partial estimates and payments shall be subject to correction in the final estimate and payment.

ASSIGNMENT OF PAYMENTS. All monies payable under the Contract, or any part thereof, shall be paid to the Contractor in accordance with the provisions of this Section, and no assignment or order executed by the Contractor directing payment of any portion or all of such funds to any other person or persons shall be recognized by the City.

CLAIMS FOR ADJUSTMENT IN COMPENSATION. Should the Contractor deem that an adjustment in compensation is due for work or materials not clearly covered in the Contract or not ordered by the Engineer as an extra, the Contractor shall notify the Engineer in writing the Contractor's intention to make claim for such adjustment before proceeding with the work involved in such claim.

Should the Contractor encounter physical conditions at the site of the work of any unusual nature, differing materially from those which might be reasonably encountered and generally recognized as inherent in work of the character provided for or implied in the plans and specifications, promptly, and before such conditions are unduly disturbed, the Engineer shall be

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notified, in writing, of the Contractor's intent to claim an adjustment in compensation. The Engineer shall thereupon promptly investigate the conditions, and, if the Engineer finds that such conditions do so materially differ and cause an increase or decrease in the cost of, or the time required for performance of the contract, the contract will be modified in writing and an equitable adjustment made in accordance with the requirements of extra work.

Should the Contractor fail to give the Engineer written and timely notice of intent to claim an adjustment in compensation as hereinbefore provided and to afford the Engineer the opportunity to investigate any changed conditions claimed before they are unduly disturbed, Contractor thereby expressly waives such claim. In any event, the determination of the validity of the claim will rest with the City or its authorized representative.

GUARANTEE

GUARANTEE OF MATERIALS AND WORKMANSHIP. The Contractor shall guarantee all materials furnished and all work performed under the Contract against all defects in materials and workmanship for a period of one year following the date of acceptance of the Work, which date shall be understood to be the date of which final payment of all monies due the Contractor under the contract is authorized by the Director of Public Works.

Should any defect appear during the guarantee period, the Contractor shall make the required repairs or replacement upon receipt of written notification from the Director of Public Works to do so.

END OF SECTION

SECTION 01 45 23.10 TESTING AND INSPECTION OF PIPELINE & APPURTENANCES

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes

1. Low pressure air test.
2. Inspection of gravity pipelines by lamping.
3. Televising gravity pipelines.
4. Deflection test for gravity pipelines that are not reinforced concrete pipe (PVC and other).
5. Pressure and leakage test for pressurized pipelines.
6. Continuity testing.

1.2 REFERENCES

A. American Society for Testing and Materials (ASTM)

1. ASTM D3034 Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
2. ASTM C828 Standard Test Method for Low-Pressure Air Test of Vitrified Clay Pipe Line.
3. ASTM F679S Specification for Poly (Vinyl Chloride) (PVC) Large-Diameter Plastic Gravity Sewer Pipe and Fittings.
4. ASTM C1107 Spec. for Packaged Dry, Hydraulic –Cement Grout (Nonshrink)

B. American Water Works Association (AWWA)

1. AWWA C600 Installation of Ductile-Iron Water Mains and Their Appurtenances
2. AWWA C605 Underground Installation of Polyvinyl Chloride (PVC) Pressure Pipe and Fittings for Water
3. AWWA C651-14 Disinfecting Water Mains

1.3 SUBMITTALS

A. Quality Control Submittals

1. Test reports and results.
2. Proposed method to correct deficiencies.
3. Record of deficiency repair method and location.

1.4 PROJECT/SITE CONDITIONS

- A. Notify Engineer a minimum of 48 hours prior to any testing.
- B. Notify Engineer when testing equipment is setup and ready for testing.
- C. Testing shall be performed in the presence of the Engineer.

- D. Provide access to test equipment to enable the Engineer to monitor and record test results.
- E. Repeat failed test after correction of deficiencies until satisfactory tests are obtained.
- F. Proposed correction of deficiencies shall be approved by Engineer prior to correction.
- G. Repair visible leaks within the pipeline and/or pipeline appurtenances.

PART 2 – PRODUCTS

2.1 EQUIPMENT

- A. Low Pressure Air Test
 - 1. Inflatable pipe lugs.
 - 2. Bracing.
 - 3. Compressor.
 - 4. Hose and fittings.
 - 5. Pressure gauge.
- B. Gravity Sewer Lamping
 - 1. Battery operated light.
 - 2. Mirror.
- C. Televising of Pipelines
 - 1. Cleaning Equipment:
 - a. Mechanically operated cleaning equipment shall be of the movable dam type constructed in such a way that a portion of the dam may be collapsed at any time during the cleaning operation to protect against flooding of the pipe.
 - 1) Sewer cleaning balls or other such equipment which cannot be collapsed instantly is not acceptable cleaning equipment.
 - 2) Provide the movable dam with equal diameter as the pipe being cleaned.
 - 3) Provide a flexible scraper around the outer periphery to insure total removal of grease.
 - b. Truck mounted hydraulically propelled high velocity cleaning equipment.
 - 1) Provide a minimum of 500 feet of ¾ inch I.D. high pressure hose with a selection of two or more high velocity nozzles.
 - 2) 60 GPM nozzle capacity at a working pressure of 1000 to 1500 pound psi capable of producing a scouring action from 15° to 45° in all size pipe lines designated to be cleaned.
 - 3) Provide a high velocity gun adjustable from fine spray to narrow stream with a flow rate of 3 ½ to 27 GPM operating between 200 and 800 psi. for washing and scouring manhole walls and floors.
 - 4) Provide a 1500 gallon water tank capable of holding corrosive or caustic cleaning or sanitizing chemicals, if required by the Engineer, auxiliary engines and pumps, and hose reel.
 - 2. Provide television equipment including:

- a. Vehicle with cable and winch equipment for pulling camera through pipeline and equipment for placing pull cable.
- b. Suitable mobile van or trailer enclosure for viewing closed circuit televising.
- c. Camera and reeled transmitting cable.
 - 1) Provide a television camera with a minimum of 600 lines resolution specifically designed and constructed for such pipeline inspection.
 - 2) Provide lighting for the camera which will be suitable for a clear picture for the entire periphery of the pipe.
 - 3) Picture quality and definition shall be suitable for a clear view of the entire pipeline.
- d. Closed circuit transmitter, receiver station, video recorder with audio capability and T.V. monitor.
- e. Engineer's on-site use of televisors, video tape player and television monitor during inspection and for a reasonable time after televising has been completed (but not to exceed 21 days).
- f. Still camera for photos from T.V. monitor.

D. Deflection Test

1. The deflection test is required for all sewer main that is not reinforced concrete pipe.
2. Mandrel sizes for these mains shall be in accordance to the following tables that are used for PVC:
3. PVC SDR 35 (ASTM D3034)

Nominal Pipe Size (Inches)	Base ID (Inches)	Mandrel Size (Inches)
8	7.67	7.28
10	9.56	9.08
12	11.36	10.79
15	13.90	13.20

3. PVC (ASTM F679)

Nominal Pipe Size (Inches)	Wall Thickness	Base ID (Inches)	Mandrel Size (Inches)
18	T-1A	16.98	16.13
18	T-2B	17.06	16.20
21	T-1A	20.00	19.00
21	T-2B	20.10	19.09
24	T-1A	22.48	21.36
24	T-2B	22.59	21.46
27	T-1A	25.33	24.06
27	T-2B	25.45	24.17

E. Standard Pressure and Leakage Test

1. High pressure pump with electric or gas engine drive with capacity in excess of test conditions.

2. Provide calibrated vessel for measuring water pumped into the main to replace leakage.
3. Provide certified pressure gauge calibrated in pounds per square inch of sufficient capacity to conduct test.

PART 3 – EXECUTION

3.1 PREPARATION OF PIPELINE BEFORE TESTING

- A. Clean pipeline of any debris, soils, and construction material.
- B. Repair or replace piping, valves, fittings, manholes, inlets, and other parts of the piping system which have visible defects or leakage, before commencing tests, even though amount of leakage or pressure loss may be below the allowable limit.
- C. Provide traffic control and other safety equipment including confined space entry equipment, if required.

3.2 LOW PRESSURE AIR TEST

- A. Provide either the low pressure air test or the water infiltration test for sanitary sewers submerged by ground water.
- B. Preparation
 1. For testing consistency, wet interior pipe surface.
 2. Install appurtenances including, but not limited to, wyes, tees, laterals, stubs, and structure prior to test to ensure the system is being tested.
 3. Plug pipe outlets (including laterals) adequately to retain testing pressure.
 4. Visually inspect pipeline and repair visible defective joints and leaks.
- C. Testing Procedure
 1. Determine test time as follows:
 - a. Test times for pipeline segments with uniform pipe size shall be taken from test timetable list below.
 - b. Test times for pipeline segments longer than those shown and/or of non-uniform pipe size shall be calculated utilizing appropriate formulas in ASTM C828.

Test Timetable

Pipe Diameter "D" in Inches											
	8	10	12	15	18	21	24	27	30	36	42
25	0.30	0.37	0.45	0.52	0.60	0.74	0.89	1.04	1.19	1.50	1.82
50	0.59	0.74	0.89	1.04	1.20	1.49	1.78	2.08	2.39	3.01	3.64
75	0.89	1.11	1.34	1.57	1.80	2.23	2.67	3.12	3.58	4.51	5.45
100	1.19	1.48	1.78	2.09	2.40	2.97	3.56	4.16	4.77	6.01	7.27
125	1.48	1.86	2.23	2.61	3.01	3.72	4.45	5.20	5.96	7.51	9.09
150	1.78	2.23	2.67	3.13	3.61	4.46	5.34	6.24	7.16	9.02	10.91
Pipe Diameter "D" in Inches											
	8	10	12	15	18	21	24	27	30	36	42
175	2.08	2.60	3.12	3.65	4.21	5.21	6.23	7.28	8.35	10.52	12.73
200	2.37	2.97	3.56	4.17	4.81	5.95	7.12	8.32	9.54	12.02	14.54
225	2.67	3.34	4.01	4.70	5.41	6.69	8.01	9.36	10.73	13.52	16.36
250	2.97	3.71	4.45	5.22	6.01	7.44	8.90	10.40	11.93	15.03	18.18
275	3.26	4.08	4.90	5.74	6.61	8.18	9.79	11.44	13.12	16.53	20.00
300	3.56	4.45	5.34	6.26	7.21	8.92	10.68	12.48	14.31	18.03	21.81
325	3.86	4.82	5.79	6.78	7.81	9.67	11.58	13.52	15.50	19.53	23.63
350	4.16	5.19	6.23	7.30	8.41	10.41	12.47	14.56	16.70	21.04	25.45
375	4.45	5.57	6.68	7.83	9.02	11.16	13.36	15.60	17.89	22.54	27.27
400	4.75	5.94	7.12	8.35	9.62	11.90	14.25	16.64	19.08	24.04	29.09
425	5.05	6.31	7.57	8.87	10.22	12.64	15.14	17.68	20.27	25.54	30.90
450	5.34	6.68	8.01	9.39	10.82	13.39	16.03	18.72	21.47	27.05	32.72
475	5.64	7.05	8.46	9.91	11.42	14.13	16.92	19.76	22.66	28.55	34.54
500	5.94	7.42	8.90	10.43	12.02	14.87	17.81	20.80	23.85	30.05	36.36
525	6.23	7.79	9.35	10.96	12.62	15.62	18.70	21.84	25.04	31.55	38.18
550	6.53	8.16	9.79	11.48	13.22	16.36	19.59	22.88	26.24	33.06	39.99
575	6.83	8.53	10.24	12.00	13.82	17.10	20.48	23.93	27.43	34.56	41.81
600	7.12	8.90	10.68	12.52	14.42	17.85	21.37	24.97	28.62	36.06	43.63
I. Specified test time (minutes) required for pressure drop from 3 ½ to 2 ½ psi when testing one pipe diameter only.											
II. Interpolate test times for segment lengths not specifically listed.											

2. Pressurize pipeline to 4.0 psi and allow to stabilize (stabilization of air temperature may cause pressure drop).
3. When pressure has stabilized, start test at 3.5 psi and record time.
4. If pressure drops more than 1.0 psi during the determined test time, the test will be considered failed.
5. If the test section is below the ground water level, determine the height of the groundwater above the spring line of the pipe at each end of the test section and compute the average. For every foot of groundwater above the pipe spring line, increase the gage test pressures by 0.43 pounds per square inch.

3.3 INSPECTION OF GRAVITY PIPELINES BY LAMPING

- A. Whether televised or not, gravity pipelines shall be lamped and a record of the results of lamping furnished to the Engineer.
- B. Check vertical and horizontal alignment by sighting through newly constructed pipeline after illuminating opposite end with a flashlight.
- C. Light beam should be full throughout the section, but no less than two-thirds full under any circumstances.
- D. Relay any section of pipe found to be out of alignment.

3.4 TELEVISION GRAVITY PIPELINES

- A. Preparation of Pipeline Before Televising
 - 1. Clean pipelines and manholes to be televised to degree to allow visual inspection of sewer interior.
 - 2. Completely block off water or sewage from both upstream and downstream of section being televised providing bypass pumping, if necessary to prevent sewage backup.
 - 3. Stop any dewatering operations a sufficient time before televising to allow groundwater elevation to reach its normal level, not less than 72 hours before televising.
 - a. Provide the following equipment and services:
 - 1) Street signs, barricaded detours, flashers.
 - 2) Traffic control personnel.
 - 3) Permits to work in public streets.
 - 4) Safety equipment including safety equipment for confined entry.
 - 4. Provide utilities required to perform the work such as water, electricity, etc.
- B. Televising the interior surface of the pipeline by pulling a camera through the pipeline showing on a T.V. monitor and recorded on video tape.
 - 1. Record on the audio system concurrently with the picture the following information:
 - a. Pipeline section being inspected designated by manhole numbers at each terminus of section.
 - b. Date of survey.
 - c. Type of pipe.
 - d. Owner of pipeline.
 - e. Name of televisor.
 - f. Principal client
 - g. Description of defect with location.
 - 2. Superimpose on television image (and on tape) the following information:
 - a. Date.
 - b. Section being televised.
 - c. Footage from entering manhole.
 - 3. Produce still photographs from monitor of any defective section of the pipeline.

C. Televising Operation

1. Move camera through the line in either direction at a uniform rate no greater than ½ foot per second by means of cable winches in each manhole.
2. Provide telephone or other suitable means of communications between the two winches, the pulling unit, and the monitor control.
3. Halt camera and video record for a minimum of five seconds at each joint, lateral connection, leak, unusual condition, roots, collapsed sections, presence of scale or other defect.
4. While video recording, provide an audio description of the line being televised, defects encountered, infiltration/inflow sources, etc.
5. Measure location of joints, connections or defects horizontal at the ground level by means of a target in front of the camera and a meter device accurate to 0.5 feet per 100 feet.

D. Televising Report

1. Provide a minimum of two copies of televising inspection report prepared by the televisor which includes the following items:
 - a. Manhole section televised (using construction manhole numbering system with corresponding video tape number of manhole).
 - b. Photos with location and date photographed of all joints, lateral connections, roots, collapsed pipes, presence of scale or other observed defects, estimates of infiltration/inflow amounts, etc.

E. Correction of Damage Caused By Televising Operations

1. Correct any damage to surfaces such as landscaping, pavement, sidewalks, roads, etc.
2. Dig up and repair streets or property, to remove equipment lodged in sewers.
3. Cleanup and/or provide restitution for damage caused to private property and sewer systems as a result of cleaning, televising or bypass pumping.

3.5 DEFLECTION TEST FOR GRAVITY PIPELINES THAT ARE NOT REINFORCED CONCRETE PIPE (PVC AND OTHER)

- A. Unless stated elsewhere, perform deflection tests per PVC gravity pipeline requirements.
- B. Pipe shall not exceed a deflection of 5%.
- C. Conduct test after final backfill has been in place a minimum of 30 days.
- D. Pull test mandrel without mechanical pulling devices.
- E. The pipeline will pass the test when the mandrel passes through the entire section of pipe between manholes or other structures in one pass pulled by hand without use of excessive force.
- F. Any section of pipeline failing to pass this test is to be repaired and retested.

3.6 PRESSURE AND LEAKAGE TEST FOR PRESSURIZED PIPELINES

- A. Provide pressure and leakage tests for pressurized pipelines including but not limited to water main and sewage force main.
 - 1. Testing shall be in accordance with AWWA C605 for PVC pipe, as modified herein.
 - 2. Testing shall be in accordance with AWWA C600 for ductile iron pipe, as modified herein.
- B. Preparations
 - 1. Install temporary plugs or caps, as required, prior to testing.
 - 2. Install thrust restraints before testing including temporary plugs or caps.
 - a. If high-early cement concrete thrust restraints are used, then test after 36 hours of thrust restraint replacement.
 - b. If standard cement concrete thrust restraints are used, then test after 7 days of thrust restraint replacement.
 - 3. At a minimum provide bedding, cover material and partial back fill for buried pipe, except joints maybe left uncovered until testing is completed.
 - 4. Install appurtenances including, but not limited to, hydrants, valves, services and air release valves prior to testing to ensure the entire system is being tested.
 - 5. Filling and flushing with water.
 - a. The Water Department will fill each valved section with maximum velocity of 1 ft. /sec. venting air completely from the pipeline and appurtenances.
 - b. Where permanent air vents are not located at high points or dead ends, install corporation stops/valves to vent air as the line is filled with water.
 - 1) Close all these corporation stops/valves before applying pressure or leakage tests.
 - 2) At the conclusion of the leakage and pressure test, remove and plug corporation stops/valves, or at the discretion of the Owner left in place.
 - c. Fill the main with water from the Municipal Service Center or from flushing the main to pressure the system to the testing pressure.
 - d. Discharge water without causing erosion, nuisance, or interruption of traffic.
 - 6. Provide test connections and pressurize the pipe to normal working pressure.
 - a. Inspect pipeline and repair visible leaks.
 - b. Re-pressurize pipeline to normal working pressure as many times as necessary until there are no visible leaks.
 - 7. Provide backflow protection acceptable to the owner of the water system when existing water mains are used to supply test water.
- C. Pressure Test
 - 1. At the option of the Contractor, the pressure and leakage tests may be performed at the same time.
 - 2. Test pressure at the lowest point of elevation of the segment being tested shall be not less than 150 (calculate 1.5 times the working pressure or 150 lbs. per sq. inch whichever is more) or at 10 lbs. per sq. inch less than the pressure rating of the pipe, if less than 150 lbs. per sq. inch.
 - 3. Pressurize the system being tested to pressure required above by adding water with high pressure test pump.
 - 4. Repair any visible leaks occurring due to test pressure application.

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5. Repeat pressurizing of system to test pressure until no visible leaks can be found.
6. Test period shall be two continuous hours with no visible leaks occurring.
7. Measure pipeline pressure during test period.
8. Maintain system pressure within plus or minus 5 lbs. per sq. inch of the required test pressure by adding water with the test pump.
9. The pressure test shall be completed on all new mains up to the connection of the existing mains as approved by the Engineer. Place the new main immediately adjacent to the existing main.

D. Leakage Test

1. Perform a leakage test after satisfactory completion of the pressure test.
2. Test pressure at the lowest point of elevation of the segment being tested shall be not less than 150 lbs. per sq. inch or at 10 lbs. per sq. inch less than the pressure rating of the pipe, if less than 150 lbs. per sq. inch.
3. Leakage is defined as the quantity of water supplied into the pipe section being tested to maintain a pressure within 5 lbs. per sq. inch of the specified leakage test pressure after the pipe has been filled with water and the pipeline air has been expelled.
4. Provide gauges, measuring device, pump, piping, connections, container of water and all other apparatus required to perform the test.
5. Leakage shall not exceed the number of gallons per hour as determined by the following formula:

$$L = \frac{SD\sqrt{P}}{133,200}$$

When:

L = Allowable Leakage in Gallons/Hr.
 S = Total Length of Pipe Tested in Feet
 D = Nominal Pipe Dia. In Inches
 P = Average Test Pressure in lbs./sq. in.

6. When the section under test contains various diameters of pipe, the available leakage will be the sum of the computed leakage for each size of pipe.
7. Test period shall be two continuous hours without exceeding the allowable leakage.
8. Repair pipeline as required to meet allowable leakage requirements, repeating the test after each repair.

3.7 CONTINUITY TESTING

- A. Perform a continuity test on tracer wire.
- B. Provide a power source which will transmit a measurable amount of DC current the length of the tracer wire being tested or length of pipeline being tested.
- C. Take current readings with the test current “off”, then “on” to differentiate between test current and stray current.
- D. In the event continuity of the tracer wire or pipeline is not achieved, perform required repairs and repeat the test until continuity is achieved.

END OF SECTION

SECTION 02 41 13

SELECTIVE SITE DEMOLITION AND ABANDONMENT

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes:

1. Pavements
2. Curb and Gutter
3. Sidewalks
4. Driveways
5. Concrete and Masonry Structures
6. Manholes
7. Catch Basins and Inlets
8. Pipe Culverts
9. Water Main, Hydrants, Valve Boxes, Curb Stops and Boxes

1.2 SUBMITTALS

- A. Provide tickets for the amount of slurry backfill or flowable fill inserted into pipes that are abandoned.

PART 2 – PRODUCTS

2.1 Materials

- A. Granular backfill materials shall conform to the requirements of Soil Class C-5 or C-6 in section “Soils and Aggregates”.
- B. Concrete for this section shall conform to the requirements of Class B concrete as follows:

Class	28-day Comp. Strength	Max. Size Coarse Aggregate (Inches)	Min. Cement Content (Bags/CY)	Air Content	Slump (Inches)	Max. Water/Cement Ratio
B	3000	1 1/2	4.75	6 +/- 1	3-4	.58

PART 3 – EXECUTION

3.1 BREAKING DOWN AND REMOVING STRUCTURES

A. General

1. Existing structures, with attached parts and connections, shown on the drawings to be removed or that interfere with the new construction, shall be entirely removed within the limits shown.
2. When a portion of an existing structure is to be retained, take care during construction operations so as to not damage the retained portion.
 - a. Complete operations necessary for the removal of any existing structure, which might endanger the new construction, prior to the construction of the new Work.
 - b. Do not use any equipment or devices which might damage structures, facilities, or property which are to be preserved and retained.
3. Old casting shall be salvaged to the City.

B. Pavement, Curb, Gutter, Sidewalk, Driveways, Crosswalk, and Similar Structures

1. Where portions of the existing structure are to be left in the surface of the finished Work, remove the structure to an existing joint, or saw cut the structure to a true line with a face perpendicular to the surface of the existing structure.
2. Sufficient removal shall be made to provide for proper grades and connections in the new Work.

C. Walls, Piers, Drains, Foundations, Concrete, and Masonry Structures

1. Remove entirely or break down to an elevation at least three (3) feet below the earth subgrade within the areas of a road bed and elsewhere to at least three (3) feet below the finished slopes or natural ground.
2. Rebuild and reconnect live sewers for proper operations.
3. Satisfactory by-pass service shall be maintained during construction operations.

D. Manholes, Inlets, and Catch Basins

1. Remove entirely or break down to an elevation at least three (3) feet below the subgrade within the areas of a road bed and elsewhere to at least three (3) feet below the finished slopes or natural ground.
2. Rebuild or reconnect live sewers for proper operation.
3. Satisfactory by-pass service shall be maintained during construction operations.

E. Pipe Culverts

1. Remove entirely all culverts that are to be removed, except as hereinafter provided for closing culverts.
2. Remove sidewalls or substructure units in water to an elevation no higher than the elevation of the natural stream or lake bed.
 - a. Where grading of the channel is required, remove such units to the proposed finished grade of the stream or lake bed.

- b. Remove all other sidewalls or substructure units down to at least two (2) feet below natural or finished ground.
- 3. Where existing culverts are to be extended or otherwise incorporated into the new Work, remove only such part or parts of the existing culvert as necessary to provide a proper connection to the new Work.
- 4. Remove pipe culverts designated for salvage in a manner that will preclude damage to the culverts.

F. Hydrants, Valve Boxes, and Curb Stops and Boxes

- 1. Remove hydrants without damage at the hydrant lead and plug the lead with a plug fitting.
- 2. Remove valve boxes entirely or at least to three (3) feet below the earth subgrade and elsewhere to at least three (3) feet below the finished slopes or natural ground.
- 3. Remove curb boxes and the curb stop entirely. Plug end of water service by crimping, or with a standard plug fitting, as applicable.

3.2 ABANDONING STRUCTURES

A. Manholes, Catch Basins, Inlets

- 1. Thoroughly clean structures to be abandoned.
- 2. Plug existing pipe connections with brick or concrete block masonry and with concrete.
- 3. Remove the walls of the structures to an elevation at least three (3) feet below the finished grade line, or to such elevation that may be designated on the drawings.
- 4. Provide an outlet for water seepage at the bottom of the structure.
- 5. Fill the structure with soil type C-5 or C-6.

B. Water Main Pipe

- 1. Remove pipe to joint and plug end of pipe to be abandoned with a plug fitting.
- 2. Fill abandoned pipe with flowable fill, blow sand, or other approved material.
- 3. Provide air release locations and an access point for inserting the aggregate.

C. Sewer Pipe

- 1. Plug existing pipe to be abandoned with brick or concrete block masonry and with concrete.
- 2. Fill abandoned pipe with flowable fill, blow sand, or other approved material.
- 3. Provide air release locations and an access point for inserting the aggregate.

3.3 DISPOSAL OF MATERIALS

- A. Deliver materials designated for salvage to owner's storage facility.
- B. All other materials shall be hauled and disposed of at a site provided by the Contractor:
 - 1. Method of disposal shall be in conformance with all governing authorities.
 - 2. There shall be no limit on haul distance.

3.4 BACKFILLING

- A. Fill all trenches, holes and pits resulting from the breaking down or removal of miscellaneous structures with satisfactory soil, or with broken masonry and satisfactory soil, or with granular backfill.
 - 1. Place materials in layers not more than 12 inches in thickness.
 - 2. Thoroughly compact each layer by means of tampers, rollers, or vibrators.
 - a. Do not use water to expedite settlement of backfill except with the approval of the Engineer.
 - 3. Exclude broken masonry from the top 12 inches of the finished earth grades.
 - 4. Unless otherwise provided, backfill earth subgrade, or finished slopes, as may be necessary due to the location of the removed structure.

END OF SECTION

SECTION 31 05 10**SOILS AND AGGREGATES FOR EARTHWORK****PART 1 – GENERAL****1.1 SUMMARY****A. Section Includes**

1. Engineered soils and aggregates materials
2. Bank run soils materials
3. Manufactured and special soils
4. Crushed concrete

1.2 REFERENCES**A. American Society for Testing and Materials (ASTM)**

- | | | |
|-----|------------|--|
| 1. | ASTM C33 | Spec. for Concrete Aggregates |
| 2. | ASTM C88 | Test for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate |
| 3. | ASTM C117 | Test for Material Finer than No. 200 Sieve in Mineral Aggregates by Washing. |
| 4. | ASTM C131 | Test for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Lost Angles Machine. |
| 5. | ASTM C136 | Sieve Analysis of Fine and Coarse Aggregates. |
| 6. | ASTM C144 | Spec. for Aggregate for Masonry Mortar. |
| 7. | ASTM C207 | Spec. for Hydrated Lime for Masonry Purposes. |
| 8. | ASTM C535 | Test for Resistance to Degradation of Large-Size Course Aggregate by Abrasion and Impact in the Los Angeles Machine. |
| 9. | ASTM C602 | Spec. for Agricultural Liming Materials. |
| 10. | ASTM D75 | Sampling Aggregates. |
| 11. | ASTM D422 | Particle Size Analysis of Soils. |
| 12. | ASTM D448 | Spec for Standard Sizes of Coarse Aggregate for Highway Construction. |
| 13. | ASTM D1140 | Test for Amount of Material in Soils Finer than the No. 200 Sieve. |
| 14. | ASTM D1241 | Spec. for Materials for Soil;-Aggregate Sub-base, Base, and Surface Courses. |

- | | | |
|-----|------------|--|
| 15. | ASTM D2216 | Laboratory Determination of Water (Moisture) content of Soil, Rock, and Soil Aggregate Mixtures. |
| 16. | ASTM D2487 | Classification of Soils for Engineering Purposes. |
| 17. | ASTM D4318 | Test Method for Liquid Limit, Plastic Limit, and Plasticity of Soils. |
| 18 | ASTM D5268 | Standard Specification of Topsoil Used for Landscaping Purposes. |

1.3 SUBMITTALS

- A. Provide test reports showing the results of required material testing.
- B. Provide topsoil analysis performed in accordance with ASTM D5268 and demonstrating the topsoil meets Soil Conservation Service specified soil types. Also, submit results of test for nutrient levels and provide recommendations for fertilizer type and application.
- C. Daily delivery tickets for each load of material delivered to the site.

1.4 QUALITY ASSURANCE

- A. The Engineer will provide an independent testing.

PART 2 – PRODUCTS

2.1 ENGINEERED SOILS AND AGGREGATES (SOIL CLASS A)

- A. General
 - 1. Material shall be clean, sound, hard, dense, durable, field or quarry stone which is free from seams, cracks, or other structural defects. It shall be angular material from shot rock (blasted) or crushed rock having substantially all face of which have resulted from artificial crushing.
 - 2. Loss due to sulfate soundness test shall not exceed 10 percent.
 - 3. Loss due to abrasion test shall not exceed 40 percent.
 - 4. Material shall not be frozen.
- B. Gradation
 - 1. Riprap dimensions shall confirm to the following:

AVERAGE DIMENSION RANGES FOR EACH RIPRAP GRADE (Inches)				
FRACTION OF GROSS IN-PLACE RIPRAP VOLUME OCCUPIED BY STONES	EXTRA HEAVY RIPRAP	HEAVY RIPRAP (A-1)	MEDIUM RIPRAP (A-2)	LIGHT RIPRAP (A-3)
0%	>30	>25	>20	>16
10%-14%	22-25	18-20	14-16	11-13
15%-21%	18-22	14-18	11-14	9-11
20%-28%	8-18	6.5-14	5-11	4-9
5%-7%	<8	<6.5	<5	<4
2% or less	<1	<1	<1	<1

2. Soil Class A-4 through A-5 Not Used.
3. Soil Class A-6 (1 ½ - inch Crushed Rock – ASTM D448-No.4) - Bedding Stone

Sieve Size	% Passing by Weight
2-inch	100
1 ½-inch	90-100
1-inch	20-55
¾-inch	0-15
⅜-inch	0-5

4. Soil Class A-7 (¾ -inch Crushed rock – ASTM D448-No. 67) – Bedding Stone

Sieve Size	% Passing by Weight
1-inch	100
¾-inch	90-100
⅜-inch	20-55
No. 4	0-10
No. 8	0-5

5. Soil Class A-8 (⅜-inch Crushed Rock Chips – ASTM D448-No.8) - Bedding Stone

Sieve Size	% Passing by Weight
½-inch	100
⅜-inch	85-100
No. 4	10-30
No. 8	0-10
No. 16	0-5

2.2 ENGINEERED SOILS AND AGGREGATES (SOIL CLASS C) OR CRUSHED CONCRETE

A. General

1. Stone shall be hard, durable, granular material of uniform quality resulting from crushed rock or crushed bank run sand and gravel.
2. Material shall be free from clay lump, organic matter, shale, excess, elongated or flat pieces, and other deleterious substances.
3. Forty-five percent of the particles retained on a No. 4 sieve shall have at least fractured face.
4. Wear shall not exceed 50 percent.
5. Loss due to sulfate soundness test shall not exceed 18 percent by weight.
6. Total moisture content shall not exceed 7 percent unless approved by the Engineer to obtain the optimum moisture content for compaction. The optimum moisture content will be determined based on the soil testing.
7. Filler for blending shall have a maximum liquid limit of 25 percent and a maximum plasticity index of 6.
8. Material shall not be frozen.
9. Crushed concrete shall be 90% free of steel reinforcement.
10. Crushed concrete shall contain less than 10% asphaltic pavement, surfacing, or base.

B. Gradation

1. Soil Class C-1 (Crushed Stone or Concrete) – 1 ¼" Crushed Aggregate Base Course

Sieve Size	% Passing by Weight
1 ¼-inch	95-100
¾-inch	70-93
⅜-inch	42-80
No. 4	25-63
No. 10	16-48
No. 40	8-28
No. 200	2-12

2. Soil Class C-2 (Crushed Stone or Concrete) – ¾" Crushed Aggregate Base Course

Sieve Size	% Passing by Weight
1-inch	100
¾-inch	95-100
⅜-inch	50-90
No. 4	35-70
No. 10	15-55
No. 40	10-35
No. 200	5-15

3. Soil Class C-3 (Crushed Gravel) – 1 ¼" Crushed Aggregate Base Course

Sieve Size	% Passing by Weight
1 ¼-inch	95-100
¾-inch	70-93
3/8-inch	42-80
No. 4	25-63
No. 10	16-48
No. 40	8-28
No. 200	4-10

4. Soil Class C-4 (Crushed Gravel) – ¾" Crushed Aggregate Base Course

Sieve Size	% Passing by Weight
1-inch	100
¾-inch	95-100
3/8-inch	50-90
No. 4	35-70
No. 10	15-55
No. 40	10-35
No. 200	8-15

5. Soil Class C-5 (Crushed Stone, Gravel or Concrete)- Granular Backfill

Sieve Size	% Passing by Weight
1-inch	100
¾-inch	85-100
3/8-inch	50-80
No. 4	35-60
No. 40	15-30
No. 200	5-15

2.3 ENGINEERED SOILS AND AGGREGATES (SLURRY BACKFILL)

A. General

1. Material shall be placed in a clean concrete mixer truck and thoroughly mixed.
2. No additional water will be allowed. The weights are damp weights.
3. Just prior to placing the slurry backfill, the mixer shall be run at mixing speed for one full minute to assure an even mixture.

B. Gradation/Mix Ratio

1. Slurry backfill ratio per cubic yard for structure abandonment and trench backfilling shall conform to the following table:

Per Cubic Yard	
Material	Weight/Amounts
Sand	1,350 lbs
A-7	750 lbs
A-6	1,150 lbs
Water	25 Gallons

2. Alternatives for the slurry backfill for pipe abandonment may be required due to site conditions and means and methods as determined by the Contractor. Changes in the slurry backfill shall be approved by the Engineer.
3. Sand for slurry backfill shall be a granular material having at least 90% passing the No. 4 Sieve and predominantly retained on the No. 200 Sieve.

2.4 ENGINEERED SOILS (BLOW SAND)

A. Blow Sand

1. Blow sand shall be M50 Grade Foundry Silica Sand or approved equal.

2.5 BANK RUN SOILS

A. Soil Class E-1 (Clay Soil)

1. Minimum 50 percent by weight passing the No. 200 sieve.
2. For the fraction passing the No. 40 sieve, the minimum plasticity index shall be 15.
3. Minimum Atterberg liquid limit of 30.
4. Free from organic material, boulders, cobbles, excessive amounts of gravel (greater than $\frac{3}{4}$ -inch), and other deleterious substances.

B. Soil Class F-1 (Topsoil)

1. Topsoil shall meet the definition and specification stated in ASTM D5268 and meets on of the following SCS (Soil Conservation Service) soil textures:
 - a. Loam.
 - b. Sandy loam.
 - c. Silt loam.
 - d. Silty clay loam.
 - e. Clay loam.
2. The topsoil shall consist of adequate mineral content to support the growth of the intended vegetation and shall not contain herbicides which would be detrimental for the intended use.
3. The topsoil shall have adequate fertility for quick establishment of vegetation.
4. The pH of the topsoil shall be between 6.0 and 7.0.

5. Topsoil shall be free from deleterious substance.
6. Pulverize and screen the topsoil such that 100 percent passed the 1-inch (25 mm) sieve and at least 90 percent passes the No. 10 (2.00 mm).

C. Soil Class G-1 (Clean Earth Fill)

1. Soil Class G-1 shall be any soil material excavated on the project site or obtained from borrow areas.
2. Soil materials unsuitable and, therefore, not approved for this classification are:
 - a. Soils with high organic contents such as: topsoil, peat, muck, organic silts, and clays, marls, etc.
 - b. Manmade or rubble filled soils containing such materials as: foundry sand, fly ash cinders, asphalt, and concrete rubble, etc.
 - c. Silty soils such as: rock flour, loess, etc.
 - d. Soils with gravel larger than 3-inch.
 - e. Silty clay or clays with high plasticity (CH soils as defined in ASTM D2487).
 - f. All soil contaminated with hazardous waste materials as defined by the EPA.

D. Soils Class G-2 (Clean Earth Fill)

1. Same as G-1 above except shall not contain gravel larger than 1 ½ - inch.

2.6 SOURCE QUALITY CONTROL

A. Provide documentation to establish acceptability of material for each soils class in accordance to the following standards:

1. Soils Class A and C:
 - a. ASTM C88.
 - b. ASTM C131 (for coarse aggregates smaller than 1 ½ inches).
 - c. ASTM C136.
 - d. ASTM C535 (for coarse aggregates 1 ½ inches and larger).
 - e. ASTM C117 (use when aggregate contains materials finer than No. 200 sieve).
2. Soils Class E:
 - a. ASTM C136 (test when gravel content is present).
 - b. ASTM D422.
 - c. ASTM D1140.
 - d. ASTM D4318.
 - e. ASTM D4318.
3. Soils Class F:
 - a. ASTM D2487.
4. Soils Class G:
 - a. ASTM D2487.

- B. Provide source samples all soils and aggregates in accordance with ASTM D75.
- C. Provide one (1) acceptable test for each type of material at each source.

PART 3 – EXECUTION

3.1 APPLICATION

- A. Use the soil classification as specified or stated on Drawings.
- B. Place material in accordance with the Drawings and appropriate Specification Sections for the type of work being performed.
- C. Unless specified otherwise, make medium riprap at least 18-inches thick, heavy riprap at least 24-inches thick, and extra-heavy riprap at least 30-inches thick.

END OF SECTION

SECTION 31 10 00**SITE CLEARING****PART 1 – GENERAL****1.1 SUMMARY****A. Section Includes**

1. Clearing, grubbing, and disposal.
2. Stripping and stockpiling topsoil.
3. Ash Tree Requirements.

PART 2 – PRODUCTS**2.1 MATERIALS****A. Topsoil**

1. Topsoil is defined as the upper soil horizon consisting of mineral layers of maximum humus (organic) accumulation.

PART 3 – EXECUTION**3.1 CLEARING, GRUBBING, AND DISPOSAL**

- A. General – Clear and grub the area of construction as identified on the drawings.
- B. Clearing – Cut all brush, shrubs, stumps and trees to within 4 inches of the existing ground surface.
- C. Grubbing:
 1. Remove all stumps, roots, logs and timber.
 2. Grubbing shall consist of the removal and disposal of roots and stumps.
- D. Disposal:
 1. Contractor is responsible for the following:
 - a. Disposal of all material removed under clearing and grubbing.
 - b. Furnishing of a disposal site.

- E. Clearing operations shall be completed in a manner so as to prevent obstruction of traffic and to protect all remaining trees, shrubs, and other vegetation from injury.
- F. Clearing and grubbing of oak trees shall be completed in accordance with the WisDOT Standard Specifications for Highway and Structure Construction.

3.2 STRIPPING AND STOCKPILING TOPSOIL

A. Stripping

- 1. Remove all topsoil beneath:
 - a. Structures.
 - b. Roadways.
 - c. All paved areas.
- 2. Remove topsoil in:
 - a. Areas disturbed by utility construction.
 - b. Areas requiring cuts of significant fills (significant fills are fills which cannot be obtained by addition of topsoil only).

B. Stockpiling

- 1. Contractor shall stockpile topsoil obtained in the stripping operation for replacement.
 - a. For areas where topsoil is to be replaced after underground utility construction.
 - b. For areas involving site grading where topsoil is to be replaced in order to sustain vegetative growth.
- 2. In areas where topsoil will not be required as specified above, Contractor shall remove and dispose of excess material as defined in other sections.

3.3 ASH TREE REQUIREMENTS

- A. Burning of stumps, roots, brush, waste logs and limbs, timber tops, and debris resulting from clearing and grubbing is not allowed.
- B. The emerald ash borer (EAB) has resulted in a quarantine in Brown County by the Wisconsin Department of Agriculture, Trade, and Consumer Protection (DATCP) and the Wisconsin Department of Natural Resources (DNR).
- C. Ash trees include the following species:
 - 1. Green ash (*F. pennsylvanica*) is found throughout the state, but is most common in southern Wisconsin.

2. Black ash (*F. nigra*) is distributed over the entire state but is most frequently found in northern Wisconsin.
3. Blue ash (*F. quadrangulata*) is a threatened species that is currently found only at a few sites in Waukesha County. The species is at the edge of its range in Wisconsin, but is common in states farther south. The species is not of commercial importance.
4. White ash (*F. Americana*) is found throughout Wisconsin, but is most common in the southern third of the state.
5. Mountain ash (*Sorbus Americana* and *S. decora*) is not a true ash and is not susceptible to EAB infestation.

D. Follow and obey the following Wisconsin Department of Agriculture, Trade, and Consumer Protection order:

1. ATCP 21.17 Emerald ash borer; import controls and quarantine.

IMPORTING OR MOVING REGULATED ITEMS FROM INFESTED AREAS; PROHIBITION. Except as provided in sub.(3), no person may do any of the following: (a) Import a regulated item under sub.(2) into this state if that item originates from an emerald ash borer regulated area identified in 7CFR 301.53-3. (b) Move any regulated item under sub. (2) out of an emerald ash borer regulated area that is identified in 7CFR 301.53-3 and located in this state.

Note: the United States Department of Agriculture-Animal and Plant Health Inspection Service (USDA-APHIS) periodically updates the list of regulated areas in 7CFR 301.53-3. Subsection (1) applies to new regulated areas as those areas are identified in the CFR.

REGULATED ITEMS. The following are regulated items for purposes of sub. (1):

1. the emerald ash borer, *Agrilus planipennis* (Fairmaire) in any living stage.
2. Ash trees.
3. Ash limbs, branches, and roots.
4. Ash logs, slabs or untreated lumber with bark attached.
5. Cut firewood of all non-coniferous species.
6. Ash chips and ash bark fragments (both composted and uncomposted) larger than one inch in diameter.
7. any other item or substance that may be designated as a regulated item if a DATCP pest control official determines that it presents a risk of spreading emerald ash borer and notifies the person in possession of the item or substance that it is subject to the restrictions of the regulations.

- E. The quarantine means that ash wood products may not be transported out of the quarantined area. If ash trees are identified within clearing and grubbing limits, the following measures are required for the disposal:
1. Chipped ash trees
 - a. May be left on site if used as landscape mulch within the project limits if approved by the Engineer.
 - b. May be buried on adjacent properties to projects within the quarantined zone with prior approval from the Engineer.
 - c. Chips must be disposed of immediately and may not be stockpiled.
 - d. Chipper equipment must be cleaned following post-chipping activities to insure no spread of wood chip debris into non-quarantined counties.
 2. Ash logs, branches, and roots
 - a. May be hauled to the City compost site for disposal if approved by the Engineer.
 - b. Ash logs, branches, and roots must be disposed of immediately and may not be stockpiled.

END OF SECTION

SECTION 31 13 10**TREE PRESERVATION OF PUBLIC TREES****PART 1 – GENERAL****1.1 SUMMARY****A. Section Includes**

1. Protection of above ground branches and bark.
2. Protection of below ground root system and surrounding soil.

1.2 REFERENCES**A. City of De Pere Municipal Ordinance**

1. Chapter 30 Parks and Recreation

PART 2 – PRODUCTS**2.1 MATERIALS****A. None****PART 3 – EXECUTION****3.1 ABOVE GROUND BRANCHES AND ROOTS**

- A. Tree trimming required is to be coordinated with the Engineer. The City reserves the right to trim all City trees.
- B. Hand trim damaged branches larger than two inch with handsaws, pruners, loppers, chainsaws or other specifically designed tree trimming equipment.
- C. Notify the Engineer of damage to bark. Damaged bark shall be repaired as directed by the Engineer

3.2 BELOW GROUND ROOT SYSTEM AND SURROUNDING SOIL

A. Activities within the Protected Root Zone (PRZ)

1. The root system shall be left undisturbed in the PRZ for each tree as follows:

Tree diameter at 4.5 feet (dbh)	Radius of PRZ (Measured from face of trunk)
0-3 inches	3 feet
3-8 inches	6 feet
8-14 inches	8 feet
14-19 inches	10 feet
19+ inches	15 feet

2. Minimize compaction.
3. Do not store materials and equipment.

B. Protection of the PRZ

1. Provide protection of the PRZ including but not limited to:
 - a. Fencing
 - b. Temporary raised bridges over the area for equipment.
2. Auger/tunnel at a minimum depth of 36 inches for utility installations.

C. Damaged Roots

1. Hand prune damaged and exposed roots larger than one inch with handsaws, pruners, loppers, chainsaws or other specifically designed root pruning equipment.

D. Where trees are present near curb replacements, the root systems on the curb side shall be cut not more than four (4) inches beyond the edge of the new curb.

E. For new sidewalk, limit soil disturbance to not more than four inches beyond the edge of the new sidewalk.

F. The Engineer may route sidewalk around existing trees to minimize damage.

END OF SECTION

SECTION 31 23 00**EXCAVATION AND FILL FOR ROADWAY****PART 1 – GENERAL****1.1 SUMMARY****A. Section Includes**

1. Excavation.
2. Test Rolling.
3. Filling and compacting.
4. Disposal of surplus materials.
5. Finish grading.
6. Material testing.

1.2 REFERENCES**A. American Society for Testing and Materials (ASTM)**

- | | | |
|----|---------|---|
| 1. | D4318 | Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils |
| 2. | D1140 | Test for Amount of Material in Soils Finer than the No. 200 Sieve |
| 3. | D1556 | Test for Density of Soil in Place by the Sand-Cone Method |
| 4. | D1557 | Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures using 10-lb. (4.54 kg) Rammer and 18-inch (457mm) Drop |
| 5. | D2216 | Laboratory Determination of Water (Moisture) Content of Soil, Rock, and Soil-Aggregate Mixtures |
| 6. | D938-07 | Standard Test Methods for In-Place Density and water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth) |

1.3 SUBMITTALS

- A. Submit copies of the results of quality control testing (include location where test was done) for aggregate to be supplied, including a sieve analysis.

1.4 DENSITY TESTING

- A. The Engineer will provide an independent testing laboratory to provide testing services.

PART 2 – PRODUCTS**2.1 SOIL MATERIALS**

- A. Soil used for borrow, fill, and backfilling shall meet the requirements of soil class as stated in the drawings or in the Specifications.
- B. As a minimum, all soil shall meet the requirements of Soil Class G-1.
- C. Soil classes shall be as per Section “Soils and Aggregates”.

PART 3 – EXECUTION**3.1 EXCAVATION**

- A. Excavation to subgrade elevation per the drawings.
- B. Excavate soil material determined to be unsuitable when directed by the Engineer.
- C. Vegetation of a height greater than one foot shall be cut and disposed of before ground is broken for excavation.
- D. Heavy sod and other perishable material underlying proposed roadway and sidewalk embankments shall be removed.
- E. Excavation Below Subgrade
 1. Remove deposits of frost-heave material, unstable silty soils, wet and unstable soil, material salvaged from old road cores in marshes, topsoil containing considerable amounts of humus or vegetable matter, rocks, or other undesirable foundation material to the depth below finished grade as the plans show or the engineer directs. If possible, slope and drain the excavation bottoms to prevent water accumulation.
 2. Use selected materials from roadway and drainage excavation having suitable engineering properties. Borrow, or granular backfill, as the plans or special provisions show or as the engineer directs, to backfill excavated areas.

3.2 SUBGRADE COMPACTION IN CUTS

- A. Compact subgrade to 95 percent standard proctor density to a minimum depth of 6 inches.

3.3 SUBGRADE COMPACTION IN FILLS

- A. Compact fill in layers not exceeding 8 inches in thickness.
- B. Compact to 95 percent standard proctor density.

3.4 MOISTURE REQUIREMENTS

- A. Proper soil moisture contents for compaction shall be maintained in all soils.
 - 1. Optimum moisture content as determined by Standard Proctor shall be used to determine acceptance moisture contents for soil compaction.
 - 2. Use the guidelines to determine moisture content range for compaction of various soils:

Moisture Requirements for Compaction of Various Soils

Material Description	Soil Class	Tolerable Range of Moisture Content About Optimum (%)
Coarse grained, cohesionless soils with less than 4% P200 or with less than 8% uniform gradation (i.e., clean sand or gravel).	"A" and "B"	Highest practical moisture content (saturation may be required)
Sandy clays, silty clay silts, and clays	"E" and "G"	-2 to +4
All other soil types	All other soil classes	-1 to +3

Note: The above requirements are general guidelines for soil moisture content which may or may not apply to a specific soil material. In some circumstances, the required density may be attained at moisture contents outside the ranges indicated above.

3.5 TEST ROLLING

- A. Test roll finished cut or fill subgrades by rolling with a pneumatic-tire roller or a loaded dump truck with at least ten (10) cubic yards of materials.
 - 1. Method and equipment used shall be suitable for intended use.
 - 2. Take necessary precautions to protect existing structures from damage during test rolling.
 - 3. Test roll an area equal to the area of the proposed construction plus a minimum of three (3) feet on each side.
- B. Treat areas showing yielding or rutting under test rolling as follows:
 - 1. Replace and/or recompact as necessary to stabilize the area.
 - 2. Retest soil areas replaced or recompact.

3. Remove poor soils and replace with aggregate and/or fabric as directed by the Engineer.

3.6 DISPOSAL OF SURPLUS MATERIALS

- A. Haul and dispose of all surplus materials.
- B. Provide disposal area for surplus materials.

3.7 FINISH GRADING

- A. Grade, trim, and shape subgrade to required grade and section.
 1. Adjust slopes by grading so that transition is smooth and gradual.
 2. The crests of cut banks shall be rounded and shaped.
 3. Refill, Regrade and compact washouts ruts.
 4. Remove all stones 3 inches or larger from grading limits.
- B. Vertical Grading Tolerances
 1. Rough grading tolerance.
 - a. Areas to be topsoiled – rough grade to within 0.2 foot of finish grades.
 2. Areas having paved surfaces (i.e., concrete, asphalt, etc.).
 - a. Maximum allowable variation from correct profile and section shall not be more than ¼ inch in 10 feet.

END OF SECTION

SECTION 31 23 23.33**FLOWABLE FILL****PART 1 – GENERAL****1.1 SUMMARY****A. Section Includes**

1. Flowable fill material for backfill and abandonment.

1.2 REFERENCES**A. American Society of Testing and Materials (ASTM)**

- | | |
|------------------|---|
| 1. D4832-10 | Standard Test Method for Preparation & Testing of Controlled Low Strength Material (CLSM) Test Cylinders |
| 2. C618-12 | Standard Specifications for Coal Fly Ash & Raw or Calcined Natural Pozzolan for use in Concrete. (Use Fly Ash conforming to the chemical and physical requirements for mineral admixture, Class F listed, including Table 2 (except for Footnote A). Waive the loss on ignition requirement |
| 3. C403/C403M-08 | Standard Test Method for Time of Setting of Concrete Mixtures by Penetration Resistance. |
| 4. C150/C150M-11 | Standard Specification for Portland Cement. |
| 5. C33/C33M-11a | Standard Specification for Concrete Aggregates. |
| 6. C94/C94M-12 | Standard Specification for Ready-Mixed Concrete. |
| 7. C494/C494M-11 | Standard Specification for Chemical Admixtures for Concrete |
| 8. C685/C685M-11 | Standard Specification for Concrete Made by Volumetric Batching and Continuous Mixing |
| 9. C940-10a | Standard Specification for Expansion and Bleeding of Freshly Mixed Grouts for Preplaced – Aggregate Concrete in the Laboratory |
| 10. D5971 | Sampling Freshly Mixed Controlled Low Strength Material |
| 11. D6103 | Flow Consistency of Controlled Low Strength Material |
| 12. D6023 | Unit Weight, Yield, Cement Content and Air Content (Gravimetric) of Controlled Low Strength Material |

B. American Concrete Institute (ACI)

1. SP-150-94 Controlled Low-Strength Materials

1.3 SUBMITTALS

- A. Provide flowable fill mix design containing cement and water.
- B. Provide documentation that the admixture supplier has experience of at least one year, with the products being provided and any equipment required to obtain desired performance of the product.

1.4 QUALITY ASSURANCE

- A. Flowable fill shall be manufactured by a ready-mix concrete producer with a minimum of 1 year experience in the production of similar products.
- B. For each type of material required for the work of this Section, provide primary materials that are the products of one manufacturer. If not otherwise specified here, materials shall comply with recommendations of ACI 229, "Controlled Low Strength Materials."
- C. Flowable fill shall be sampled and testing in the field in conformance with either ASTM C 94 or C 685. Samples for tests shall be taken for every 115 cubic meters (150 cubic yards) of material, or fraction thereof, for each day's placement. Tests shall include temperature reading and four compressive strength cylinders. Compressive strength sampling and testing shall conform to ASTM D 4832 with one specimen tested at 7 days, two at 28 days, and one held for each batch of four specimens. Sampling and testing shall be performed by a qualified, independent commercial testing laboratory. Test results should be submitted within 48 hours of completion of testing.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Provide flowable fill containing, at a minimum, cementitious materials and water. Cementitious materials shall be portland cement, pozzolanic materials, or other self-cementing materials, or combinations thereof, at the contractor's option, and following approval by the Resident Engineer. The flowable fill mix design may also contain, fine aggregate or filler, and/or chemical admixtures in any proportions such that the final product meets the strength, flow consistency and shrinkage requirements included in this specification, as approved by the Resident Engineer.

- B. Portland Cement: ASTM C150, Type 1 or Type 2 conforming to the State of Wisconsin Standard Specifications for Highway and Structure Construction. Alternative chemical grouts may be used based on field conditions if accepted by the Engineer.
- C. Water used for mixing the grouts shall be clean and potable and provided by the Contractor.
- D. Air Entraining Admixture: ASTM C260.
- E. Chemical Admixtures: ASTM C494.
- F. Aggregate: ASTM C33.

2.2 MIXTURE

- A. Mix design shall produce a consistency that will result in a flowable product at the time of placement which does not require manual means to move it into place.
- B. Flowable fill shall have a minimum strength of 100 psi and a maximum strength of 150 psi according to ASTM C39 at 28 days after placement.
- C. Flowable fill shall have minimal subsidence and bleed water shrinkage. Evaporation of bleed water shall not result in shrinkage of more than 10.4 mm per m (1/8 inch per foot) of flowable fill depth (for mixes containing high fly ash content). Measurement of a Final Bleeding shall be as measured in Section 10 of ASTM C 940 "Standard Test Method for Expansion and Bleeding of Freshly Mixed Grouts for Preplaced-Aggregate Concrete in the Laboratory.
- D. Provide equipment as recommended by the Manufacturer and comply with manufacturer's recommendations for the addition of additives, whether at the production plant or prior to placement at the site.

PART 3 – INSTALLATION

3.1 GENERAL

- A. Flowable fill refers to a cementitious slurry consisting of a mixture of fine aggregate or filler, water, and cementitious material(s), which is used as a fill or backfill in lieu of compacted earth.

- B. Mixture is capable of filling all voids in irregular excavations and hard to reach places (such as under undercuts of existing slabs), is self-leveling, and hardens in a matter of a few hours without the need for compaction in layers.

3.2 EXAMINATION

- A. Examine conditions of substrates and other conditions under which work is to be performed and notify Engineer, in writing, of circumstances detrimental to the proper completion of the work. Do not proceed until unsatisfactory conditions are corrected.

3.3 APPLICATION OF FLOWABLE FILL

- A. Secure tanks, pipes and other members to be encased in flowable fill.
- B. Insure that there are no exposed metallic pipes, conduits, or other items that will be in contact with the flowable fill after placement. If so, replace with non-metallic materials or apply manufacturers recommended coating to protect metallic objects before placing the flowable fill.
- C. Replacement or protection of metallic objects is subject to the approval of the Resident Engineer.
- D. Abandon pipe per the section on Selective Site Demolition and Abandonment.
- E. Alternatives for flowable fill for pipe abandonment may be required due to site conditions and means and methods by the Contractor. Changes in the flowable fill shall be approved by the Engineer.

3.4 PROTECTION AND CURING

- A. Protect exposed surfaces of flowable fill from premature drying, wash by rain or running water, wind, mechanical injury, and excessively hot or cold temperature.
- B. Curing method shall be subject to approval by Engineer.

END OF SECTION

SECTION 31 23 33**TRENCHING, BACKFILLING AND COMPACTING****PART 1 – GENERAL****1.1 SUMMARY****A. Section Includes**

1. Obstruction removal.
2. Dewatering.
3. Sheet piling and bracing.
4. Supporting of existing structures.
5. Disposal of surplus materials.
6. Trenching, backfilling and compacting.
7. Restoration.

- B. This section applies to below ground pressure and gravity pipe lines.

1.2 REFERENCES**A. American Society for Testing and Materials (ASTM)**

1. D1557 Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures using 10-lb. (4.54 kg) Rammer and 18-inch (457mm) Drop
2. D6938-07 Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)

1.3 SUBMITTALS

- A. Submit copies of the results of quality control testing (include location where test was done).
1. Materials source testing.

1.4 QUALITY ASSURANCE

- A. The Engineer will obtain an independent testing laboratory to provide quality control testing.

- B. Acceptable test results do not relieve the Contractor from making corrections to the tested work during the warranty period.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Conform to Section “Soils and Aggregates”.
- B. Native Backfill Material
 - 1. Backfill material shall be free of:
 - a. Vegetable or other organic material.
 - b. Concrete or concrete fragments.
 - c. Stones larger than 3 inches.
 - d. Frozen material,
 - e. Blasted rock.
 - f. All types of refuse.
- C. Granular Backfill Material
 - 1. Soil Class C-1, C-3, or C-5 in accordance with Section “Soils and Aggregates”.
- D. Clay Dam Backfill Material
 - 1. Soil Class E-1 clay soil in accordance with Section “Soils and Aggregates”.
 - 2. Use where stated on the Drawings or where stated elsewhere.

2.2 SOURCE QUALITY CONTROL

- A. Provide test soil and aggregate material in accordance with Section “Soils and Aggregates”.

PART 3 – EXECUTION

3.1 OBSTRUCTION REMOVAL

- A. Remove obstructions from within the construction limits as required; such as:
 - 1. Mounds of dirt, stone or debris.
 - 2. Street signs, culverts and end walls, advertising signs and guard posts (shall be replaced to original condition).
- B. Unless otherwise specified, the construction limits are:

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1. Street right-of-way.
2. Easement boundaries.
3. Project site property lines.
4. As shown on the Plans.

C. Strip and stockpile topsoil in accordance with section: “Site Clearing”.

D. Remove pavement, curb and gutter, sidewalk, and driveway and other surfaces within the maximum trench width for restoration payment purposes at the ground surface or as shown on the drawings whichever is greater.

1. Sawcut vertically pavement, curb and gutter, sidewalk, driveway and other surfaces to full depth prior to removal.
2. Remove concrete surfaces to the nearest joint.

3.2 DEWATERING

A. Determine groundwater conditions.

B. Provide and maintain necessary means and methods to dewater excavations as required.

C. Dispose of water.

D. Prevent runoff and dewatering system discharge for entering excavation.

E. Secure permits from regulatory and governmental agencies governing dewatering.

F. Provide well, water, pumping equipment, generating equipment and/or power.

G. Maintain a water supply to private and public wells affected by the dewatering operation.

H. Correct damage caused to private wells due to dewatering.

I. Dewater to a minimum depth of 12 inches below excavations.

J. Maintain dewatering operation until backfill and compaction procedures are completed.

K. Groundwater Disposal

1. Convey groundwater to a point of discharge through pipelines.
 - a. Open ditches and trenches are not permitted.
 - b. Use of Owner’s utilities is not permitted without written consent.
2. Maximum Sediment Content: 10 milligrams per liter.

3.3 TRENCH EXCAVATION

- A. Excavate trench to sufficient width and depth to permit proper utility construction at line and grade shown on the drawings.
- B. The bottom of the excavation shall conform to the pipe embedment details with a minimum width of the pipe outside diameter plus 12 inches.
- C. Do not open more than 200 feet of trench at any one time.
- D. Place excavated material in a location that will minimize inconvenience to public travel, adjacent property owners and other contractors.
- E. Disposal of Surplus Excavated Material
 - 1. Remove surplus excavated material from the site as soon it is determined it will not be used for backfill material.
 - 2. Dispose of pavement separately from soils material.
 - 3. Dispose of surplus material which includes:
 - a. Loading and hauling.
 - b. Dumping and leveling.
 - c. Provide a dump site (when not specified by Owner)
 - 1) Conform with governing authorities.
 - 2) No limit on haul distance.
 - 4. Do not dispose of excavated surplus material in state waters, floodplain, or wetlands without written approval of the appropriate regulatory agency.
- F. Sheet piling and Bracing
 - 1. Sheet and brace trenches and excavations as required by applicable federal and state codes, by the Contract Documents, and as necessary to protect life and property.
 - a. When close sheet piling is required, prevent soil from entering the trench either below or through such sheet piling.
 - 2. Removal of Sheet piling and Bracing
 - a. Remove sheet piling and bracing as the excavation is backfilled in such manner to avoid disturbance of adjacent structures and to insure adequate protection of the completed pipe section.
 - b. If the sheet piling and bracing cannot be removed without damage to the pipe or adjacent areas, leave in place.

G. Portable Trench Shoe Shield (Shoe)

1. A shield may be used with the following restrictions.
 - a. Construct as required by State or Federal authority.
 - b. Do not exceed trench limits.
 - c. Do not disturb or alter pipe and bedding.

H. Rock Removal

1. Remove and dispose of rock in accordance to Section "Rock Removal".

3.4 TRENCH BACKFILLING AND COMPACTION

- A. Provide pipe foundation material below the bedding as directed by the Engineer.
- B. Notify Engineer of poor soils below the foundation and/or the pipe bedding.
- C. Provide pipe embedment as required for the type of pipe installed per the appropriate Section.
- D. Granular backfill shall be installed as follows unless specified otherwise on the Plans:
 1. One foot beyond the limits of existing or proposed pavements, driveways, and sidewalks.
 2. Ten feet beyond the limits of the railroad tracks.
 3. The vertical limits shall be to the existing or proposed subgrade.
- E. Native backfill may be used at locations not identified in D.
- F. Backfill Compaction
 1. Compact trenches using mechanical compaction methods.
 2. Compact backfill in layers not exceeding 18 inches to the following densities:

Material Type	Density Requirement
Native Material	Equal to adjacent undisturbed material
Granular Backfill	Minimum of 93% of the Modified Proctor Density
- G. Provide select backfill material as directed by the Engineer or as specified elsewhere.
- H. Backfill trench to last pipe joint (not to exceed 10 feet) at the end of each work day.
 1. Backfill during nights, weekends and when no work is in progress.
 2. Take measures to protect work site.

3.5 SURFACE RESTORATION

- A. Remove surplus material (earth, rubbish, construction material, etc.) and restore areas affected by construction activities.
- B. Restore roads, streets, and highways meeting the following provision:
 - 1. Shape subgrade and grade for installation of required base course and pavement.
 - 2. Install base course to final pavement grade, compacted to 93% Modified Proctor density and fine graded.
 - 3. Maintain base course surface grade and control dust until paving is completed.
 - 4. If paving is by others, provide maintenance of the base course for the period of 6 months from the date of Substantial Completion.
- C. Restore the following surfaces to the thickness stated on the drawings or, if not stated on the drawings, then restored to the thickness of the existing surface or to the minimum thickness stated as follows, whichever is better.
 - 1. Portland Cement Concrete Pavement: 8 inch thickness
 - 2. Asphaltic Concrete Pavement: 4 inch thickness
 - 3. Base Course:
 - a. For a concrete street: 8 inch thickness
 - b. For an asphaltic concrete street: 15 inch thickness
 - 4. Unpaved Roads: 15-inch thickness
 - 5. Curb and Gutter:
 - a. Curb and gutter to match existing style and size
 - b. Minimum 6 inch aggregate base
 - 6. Sidewalk:
 - a. Minimum Sidewalk Thickness: 4 inches
 - b. Minimum alley thickness: 8 inches
 - c. Minimum 4 inch aggregate base
 - 7. Driveways and Parking Lots:
 - a. Concrete: thickness – 6 inches
 - b. Asphaltic Concrete: Minimum Thickness – 3 inches
 - c. Minimum 6 inch aggregate base
 - 8. Landscaping:
 - a. Perform as defined in section “Turf and Grasses”.
- D. Make restitution to the Owner of trees and shrubs damaged during construction.

END OF SECTION

SECTION 31 25 00**EROSION AND SEDIMENT CONTROL****PART 1 – GENERAL****1.1 SUMMARY**

- A. Section Includes
 - 1. Erosion Bales and Bags
 - 2. Inlet Protection
 - 3. Silt Fence
 - 4. Erosion Mats
 - 5. Ditch Checks
 - 6. Stone Tracking Pad
 - 7. Temporary Ditch Check – Sediment Logs

1.2 REFERENCES

- A. Wisconsin DOT, Erosion Control, Product Acceptability lists for Multi-Modal Application (PAL), latest edition.
- B. American Society for Testing and Materials (ASTM)
 - 1. D1388 Test Method for Stiffness of Fabrics
 - 2. D2487 Test Method for Classification of Soils for Engineering Purposes
 - 3. D3776 Test Method for Mass Per Unit Area (Weight) of Woven Fabric
 - 4. D4355 Test Method for Deterioration of Geotextiles from Exposure to Ultraviolet Light and Water (Xenon-Arc type Apparatus)
 - 5. D4491 Test Method for Water Permeability of Geotextiles by Permittivity
 - 6. D4632 Test Method for Grab Breaking Load and Elongation of Geotextiles
 - 7. D4751 Test Method for Determining Apparent Opening Size of a Geotextile
 - 8. D4833 Test Method for Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products
 - 9. D5035 Test Method for Breaking Strength and Elongation of Textile Fabric (Strip Method)
 - 10. D5338 Test Method for Determining Aerobic Biodegradation of Plastic Materials Under Controlled Composting Conditions

- C. Wisconsin Department of Natural Resources Stormwater Technical Standards,
<http://dnr.wi.gov/runoff/stormwater/techstds.htm>

1.3 SYSTEM DESCRIPTION

- A. Provide additional erosion and sediment control to prevent erosion which may be caused due to selected construction methods.

1.4 SUBMITTALS

- A. Manufacturer's certification for manmade products
- B. A list of ditch checks materials
- C. Gradations for aggregate used in erosion control practices

PART 2 – PRODUCTS

2.1 EROSION BALES AND BAGS

- A. Sand Bags
1. Minimum unfilled size of 16 by 26 inches.
 2. Completely filled with a granular soil (P200<50%).
- B. Rock Filled Filter Bags
2. Minimum unfilled size of 18 by 30 inches.
 3. Construct bag of high density polyethylene as manufactured by Erotex.
 4. Seal bag with a high density polyethylene draw string knitted directly into the bag opening in a rolled seam using minimum of 480 denier polyester sewing yarn.
 5. Fill bag with well graded coarse aggregate conforming to the following AASHTO M43 Size No. 76:

Sieve Size	% Passing by Weight
2 inch	---
1 ½ inch	---
1 inch	100
¾ inch	90-100
3/8 inch	20-55
No. 4	0-10
No. 8	0-5

C. Erosion Bales

1. Tightly compacted bales of grain straw or hay.
2. Use straw, if required to function for more than 15 days.

D. Support Post

2. Wood or steel construction, minimum length 4 feet.
3. Wood Posts: 2" x 2" or equivalent steel posts.

2.2 INLET PROTECTION

- A. Inlet protection shall with the Wisconsin Department of Natural Resources Conservation Practice Standard #1060 "Storm Drain Inlet Protection for Construction Sites".

2.3 SILT FENCE

A. Geotextile Fabric

1. Fabric shall be either woven or non-woven polyester, polypropylene, stabilized nylon, polyethylene or polyvinylidene chloride.
2. Fabric shall have the minimum strength values in the weakest principal direction.
3. Non-woven fabric may be needle punched, heat bonded, resin bonded or combination thereof.

4. Fabric shall meet the following requirements:

- a. If silty soils on-site then the following can be used:

1) Grab Tensile Strength	ASTM D4632	101 lbs. (450 N)
2) Apparent Opening Size	ASTM D4751	0.6mm (No 30)
3) UV Resistance Strength	ASTM D4355	70
Retained at 500 Hours (%)		
4) Permittivity (per second)	ASTM D4491	0.14

- b. If sandy soils on-site then the following can be used:

1) Grab Tensile Strength	ASTM D4632	101 lbs. (450 N)
2) Apparent Opening Size	ASTM D4751	0.3mm to 0.8mm
3) UV Resistance Strength	ASTM D4355	70
Retained at 500 Hours (%)		
4) Permittivity (per second)	ASTM D4491	0.14

B. Support Posts

1. Wood or steel construction minimum length 48 inches.
2. Wood posts – 1 1/8" x 1 1/8" of hickory or oak, or equivalent steel posts.

- C. Silt fence shall with the Wisconsin Department of Natural Resources Conservation Practice Standard #1056 “Silt Fence”.

2.4 EROSION MATS

A. General

1. Erosion mat shall conform to the Wisconsin Department of Natural Resources Conservation Practice Standard.
2. Only mats conforming to the Class and Type listed in the Wisconsin Department of Transportation Erosion Control Product Acceptability List will be allowed.

B. Types

1. Non-Channel erosion mat shall conform to the Wisconsin Department of Natural Resources Conservation Practice Standard #1052 “Non-Channel Erosion Mat”.
 - a. Utilize Class I, Urban.
2. Channel erosion mat shall conform to the Wisconsin Department of Natural Resources Conservation Practice Standard #1053 “Channel Erosion Mat”.

C. Anchoring Devices/Stakes

1. Anchoring and components for temporary erosion mats shall be completely biodegradable as determined by ASTM D5338.
2. Materials shall be environmentally safe for soil and groundwater.
3. Do not use petroleum based plastics or composites.
4. Do not use materials which may present a hazard from splintering or spearing.
5. Design anchors to hold a minimum of two months and be substantially degraded within four months during the summer (warm soil conditions).

2.5 DITCH CHECKS

- A. Ditch checks shall with the Wisconsin Department of Natural Resources Conservation Practice Standard #1062 “Ditch Check (Channel)”.
- B. Submit a list of ditch checks materials to the Engineer for review.

2.6 STONE TRACKING PAD

- A. The Stone Tracking Pad materials shall conform with the Wisconsin Department of Natural Resources Conservation Practice Standard #1057 “Stone Tracking Pad and Tire Washing”.
- B. Approval is required for materials used to construct the tracking pad.
- C. Utilize 2-inch to 3-inch aggregate in areas where access is required to adjacent properties.

2.7 TEMPORARY DITCH CHECKS (TDC) – SEDIMENT LOGS

- A. TDC materials shall be one of the following approved products.

Product	Manufacturer
Curlex 12-inch Sediment Log	American Excelsior
AEC Premier 12-inch Wattle	American Excelsior
Stenlog 12	Erosion Control Blanket.com
Triangular Silt Dike	Triangular Silt Dike
Aspen Xcel Log	Western Excelsior
Ditch Chexx	Filtress
Bio-D Silt Check	Ro Lanka

PART 3 – EXECUTION

3.1 GENERAL

- A. Keep disturbed areas to a minimum.
- B. Stabilize and protect disturbed areas with temporary seed and mulch within 14 days of active disturbance of the soil surface.
- C. Place excavated trench material on the high side of the trench where appropriate.
- D. Discharge trench water to filter barrier prior to release into a drainage way.
- E. Install gravel mats at site vehicle entrance and site exit locations to prevent tracking of soil.

- F. Collect tracked soil and clean from paved roads near the construction site the same day it occurs.
- G. Sediment control measures shall be in place at the end of each working day.
- H. Locate soil stockpiles no closer than 25 feet of a roadway, wetland, or drainage control channel and control by covering the pile with tarpaulins, temporary seed and mulch or other suitable means, if the pile is exposed for 14 days or more.
- I. Protect storm inlets including inlets in paved roadways with erosion bales, geotextile fence or other suitable approved barriers.
- J. When it is necessary to cross waterways, provide crossing structures for machinery.
- K. Repair, replace, and maintain erosion and sedimentation structures until vegetation is re-established or permanent structures are installed.
- L. Remove temporary erosion control structures and accumulated sediment and/or debris when vegetation is established.
- M. Erosion control practices shall be as shown on the plans or directed by the Engineer. Additional erosion control practices installed due to the Contractors means and methods will be incidental to the Work.

3.2 EROSION AND SEDIMENT CONTROL DEVICES

- A. Installation of erosion bales shall be done in accordance with the Wisconsin Department of Natural Resources Conservation Practice Standard #1055 "Sediment Bale Barrier (Non-Channel)".
- B. Erosion Bags
 - 1. Place type (sand or rock filled) where shown on the Drawings at a minimum.
 - 2. Place bags end to end across surface water flow path.
 - 3. Place bags at right angles to the direction of water flow.
 - 4. Excavate shallow sump on the upstream side of bags.
 - 5. Entrench bags at least 4 inches into the ground.
 - 6. Place bags prior to disturbing upslope areas.
 - 7. Drive support posts a minimum of 12 inches into the subgrade and extend to the top of the bags.
 - 8. Remove from the site after final stabilization.

C. Inlet Protection

1. Installation of inlet protection shall be done in accordance with the Wisconsin Department of Natural Resources Conservation Practice Standard #1060 "Storm Drain Inlet Protection for Construction Sites".

D. Silt Fences

1. Installation of silt fence shall be done in accordance with the Wisconsin Department of Natural Resources Conservation Practice Standard #1056 "Silt Fence".

E. Erosion Mats

1. Installation:
 - a. See plan details for anchor trench (at ends, checks and edges) installation procedures.
 - 1) Anchor trenches shall be 12" deep.
 - 2) Compact anchor trench backfill.
 - 3) Place staples in end and check trenches spaced at 12 inches.
 - b. Follow manufacture's specifications and instructions for placement unless project documents are more stringent.
 - c. Roll width overlaps shall be 12" at edges. Pin or staple every 3 feet along overlap length.
 - d. Roll end overlaps may be spliced by overlapping (in the direction of water flow) two feet with the upstream portion of the mat on top of the downstream portion. This overlap shall receive at least three pins or staples with a maximum spacing of 12".
 - e. Pins or stakes shall be biodegradable with the length based on manufacturer's recommendation
 - f. Pins or stakes shall be driven flush with the mat.
 - g. Place mat flat conforming to contours in soil surface. Do not stretch mat.
 - h. Place mat from toe of slope toward top of slope.
 - i. Mat can be placed from downstream toward upstream or from upstream toward downstream.
2. Site Preparation:
 - a. Place seed and fertilizer prior to placing permanent erosion geomat.
 - b. Seed and fertilizer may be placed after permanent erosion mat installation with Engineer's approval.
 - c. Ground surface shall be smooth and compact.
 - d. Remove all rocks, dirt clods, stumps, roots, grass clumps, trash and other obstructions from lying in direct contact with the soil surface and the erosion mat.

3. Erosion Control Revegetative Mats (ECRM):
 - a. ECRM are placed on top of the soil.
4. Turf Reinforcement Mats (TRM):
 - a. TRM are buried below the surface.
5. Wisconsin Department of Natural Resources:
 - a. Non-Channel erosion mat shall be installed on accordance with the Wisconsin Department of Natural Resources Conservation Practice Standard #1052 "Non-Channel Erosion Mat".
 - b. Channel erosion mat shall be installed in accordance with the Wisconsin Department of Natural Resources Conservation Practice Standard #1053 "Channel Erosion Mat".

F. Ditch Checks

1. Ditch check work shall be performed in accordance with the Wisconsin Department of Natural Resources Conservation Practice Standard #1062 "Ditch Check (Channel)".

G. Stone Tracking Pad

1. Stone tracking pad work shall be performed in accordance with the Wisconsin Department of Natural Resources Conservation Practice Standard #1057 "Stone Tracking Pad and Tire Washing".

H. Temporary Ditch Checks (TDC) – Sediment Logs

1. TDC shall be capable of maintaining location and form during and after rainfall events.
2. TDC shall be placed at locations shown on the Drawings.
3. Place TDC generally perpendicular to the flow line of the ditch and extend far enough so the ground level on the ends of the TDC are a minimum 18-inches higher than the flow line.
4. Place TDC immediately after road ditch has been backfilled and shaped TDC shall be removed and replaced during subsequent trenching operations in the road ditch area.

3.4 MAINTENANCE

- A. Inspect silt fences and filter barriers immediately after each rainfall and at least daily during prolonged rainfall.
 1. Make any required repairs immediately.

2. Maintain temporary erosion and sedimentation control structures until permanent soil erosion controls are completed and/or vegetation is established.
 - a. Repair damaged structures.
 - b. Replace lost structures.
 - c. Remove sediment from deposition areas adjacent to erosion control structures without damaging structures on a regular basis.
 - d. Refill eroded areas as required for grade stabilization.
- B. If the fabric on silt fence or filter barrier decomposes or becomes ineffective prior to the end of the expected usable life and the barrier still be necessary, replace the fabric promptly.
- C. Remove sediment deposits after each major storm event and when deposits reach approximately one-half the height of the barrier.
- D. Remove any sediment deposits remaining in place after the silt fence or filter barrier is no longer required and dress to conform to the existing grade, prepared and seeded.
- E. Repair/restore any washed out areas.
- F. Maintenance period to be entire project period including the one year warranty.
- G. Owner may direct Contractor to remove the temporary erosion control measures any time during the one year correction period.
- H. Construct permanent erosion control measures immediately after earthwork is completed.

END OF SECTION

SECTION 31 34 19 GEOTEXTILE FABRICS

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes

1. Geotextile fabric under riprap.

1.2 REFERENCES

A. American Society for Testing and Materials (ASTM)

- | | | |
|----|-------|--|
| 1. | D4355 | Test Method for Deterioration of Geotextiles from Exposure to Ultraviolet Light and Water (Xenon-Arc Type Apparatus) |
| 2. | D4533 | Test Method for Trapezoid Tearing Strength of Geotextiles |
| 3. | D4491 | Test Method for Water Permeability of Geotextiles by Permittivity |
| 4. | D4632 | Test Method for Grab Breaking Load and Elongation of Geotextiles |
| 5. | D4751 | Test Method for Determining Apparent Opening Size of a Geotextile |
| 6. | D4833 | Test Method for Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products |

1.3 SUBMITTALS

- ##### A. Provide, at the time of delivery of the geotextile fabric, a manufacturer's Certificate of Compliance that the geotextile fabric meets the requirements of this Section.

1.4 DELIVERY, STORAGE AND HANDLING

- ##### A. Deliver geotextile fabric in a wrapping which will protect the fabric from ultraviolet radiation and from abrasion due to shipping and hauling.
- ##### B. Store geotextile fabric in a dry location until installed.

PART 2 – PRODUCTS

2.1 GENERAL

- A. Provide geotextile fabric consisting of either woven or non-woven polyester, polypropylene, stabilized nylon, polyethylene or polyvinylidene chloride. All fabric shall have a minimum strength values in the weakest principle direction. Non-woven fabric may be needle punched, heat bonded, resin bonded or combinations thereof.
- B. The geotextile fabric shall be insect, rodent, mildew and rot resistant.
- C. Clearly mark the geotextile fabric rolls showing the type of fabric.
- D. If sewn seams are used, provide a field sewn seam sample produced from the geotextile fabric and thread and with the equipment to be used on the project, prior to incorporation into the work.

2.2 MATERIALS

- A. Non-Woven Geotextile Fabric, Type HR
 - 1. Type HR non-woven geotextile fabric shall be used beneath heavy riprap, Soil Class A-1 and medium riprap, Soil Class A-2, and light riprap, Soil Class A-3.
 - 2. The fabric shall comply with the following physical properties:

Test	Method	Value
Grab Tensile Strength (lbs.)	ASTM D4632	300 min.
Puncture Strength (lbs.)	ASTM D4833	100 min.
Apparent Breaking Elongation (%)	ASTM D4632	15 min.
Apparent Opening Size (U.S. Standard Sieve)	ASTM D4751	30-140
Permittivity, sec. ⁻¹	ASTM D4491	.30 min.

¹ All numerical values represent minimum/maximum average roll values (i.e., the average of minimum test results on any roll in a lot should meet or exceed the minimum specified values).

- 3. The following fabrics are approved for Type HR:
 - a. Amoco (Nilex) -4512
 - b. Cartage – FX-160HS
 - c. Contech – C120NW
 - d. Mirafi – 1120N

PART 3 – EXECUTION

3.1 SEWING

- A. Sew factory and field seams with a thread having the same or greater durability as the material in the fabric.
- B. Use a 401 stitch conforming to Federal Standard No.751 a.
- C. Seams shall develop a tensile strength equal to or greater than 80 percent of the specified grab tensile strength of the fabric, unless otherwise specified.

3.2 NON-WOVEN GEOTEXTILE FABRIC, TYPE HR

- A. Grade the smooth and remove all stones, roots, sticks or other foreign material which would interfere with the fabric being completely in contact with the soil.
- B. Place the fabric loosely and parallel to the direction of water movement.
 - 1. Provide pinning or stapling to hold the geotextile in place.
 - 2. Join separate pieces of fabric by overlapping or sewing.
 - 3. Place the fabric in the overlapped joints with minimum overlap of 24 inches in the direction of flow.
- C. After placement, do expose the fabric longer than 48 hours prior to covering.
- D. Cover damaged areas with a patch of fabric using a three-foot overlap in all directions.
- E. Place riprap from the base of the slope upward.
- F. Do not allow free fall of riprap greater than 6 inches or less if required to prevent damage to the fabric.

END OF SECTION

SECTION 32 01 17
CRACK AND JOINT SEALING

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes

1. Base Preparation – Asphalt and Concrete Pavements
2. Placing and Finishing
3. Traffic Control
4. Clean-up

1.2 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. D6690 Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements

1.3 SUBMITTALS

- A. Submit manufacturer's certification that materials delivered comply with the requirements of this section and the referenced standard.
- B. Submit daily copy of the amount of material of joint sealant delivered and placed.
- C. Submit material manufacturer's recommended melting procedures.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. The material shall be hot pour elastic type. This material shall conform to the requirements of the Specification of Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements, ASTM D6690.
- B. The material shall be as manufactured by HI-SPEC or equal.

C. Material shall be packaged and shipped in a suitable commercial container clearly marked with:

1. Name of material.
2. The name of the manufacturer.
3. The brand name.
4. Weight.
5. Batch number.
6. Pouring temperature recommended by the manufacturer.

PART 3 – EXECUTION

3.1 BASE PREPARATION – EXISTING ASPHALT AND CONCRETE PAVEMENTS

A. Asphalt Crack Preparation

1. All random or reflective cracks less than ½ inch wide shall be routed out to provide a sealant reservoir ½ inch (12.7mm) wide with a minimum depth ½ inch (12.7mm). This provides for a 1:1 width to depth ratio. Backer rod may be installed in the joint opening to control depth and sealant usage. Routing shall be accomplished by mechanical means and shall be extended 1 inch beyond each end of the crack. All joints and cracks shall be blown clean by compressed air (minimum air pressure, 80 pounds per square inch) with heat lancing and then crackfilled.

B. Asphalt Crackfilling Longitudinal Curb Joints

1. Routing shall be accomplished by mechanical means and shall be extended 1 inch beyond each end of the crack. All joints and cracks shall be blown clean by compressed air (minimum air pressure, 80 pounds per square inch) with heat lancing and then crackfilled.

C. Concrete Crack Preparation

1. All joints and cracks, including curb and gutter, shall be blown clean with compressed air (minimum air pressure, 80 pounds per square inch) with heat lancing and then crackfilled.

3.2 BASE PREPARATION – NEW CONCRETE PAVEMENTS

- A. All contraction and expansion joints in concrete pavement shall be sealed with a hot poured sealer. All sawed longitudinal joints shall be sealed with hot-poured sealer.

- B. The operation of sealing shall be performed as soon as practicable upon elapse of the curing period and in any event prior to the time traffic of any kind uses the pavement.
- C. Joints shall not be sealed until they have been inspected and approved by the engineer.
- D. Application of the joint sealer shall be made when the joint surfaces are clean and dry.
- E. Immediately before sealing the joint thoroughly clean the joints of all laitance, curing compound and other foreign material. Exposed joint faces shall be cleaned by sandblasting, or by water blasting with sufficient pressure to thoroughly and completely clean the joint. A multiple-pass technique shall be used until the surfaces are free of material that might prevent bonding. For final cleaning immediately prior to installation of the sealer, the joints shall be blown clean with oil-free compressed air. The joint faces must be surface dry when sealant is applied.

3.3 PLACING AND FINISHING

- A. The sealant must be melted in a double boiler, oil jacketed melter-applicator equipped with a mechanical agitator pump, gas pressure gauges, separate temperature thermometers for the oil bath, and melted material with accessible control valves and gauges. Follow the melting procedures recommended by the material supplier. Air temperatures are to be at or above 40 degrees F. Prior to the application of sealants, all prepared cracks shall be completely dry. If any moisture is evident on the street surface or vertical walls, the prepared crack application procedure shall be terminated.
- B. Joints shall not be sealed until they have been inspected and approved by the engineer.
- C. The sealing compound shall not be heated above the maximum safe heating temperature. The maximum safe heating temperature shall be determined from tests made on samples from each lot or shipment of the material delivered to the project. When so approved by the Engineer, the manufacturer's recommended maximum safe heating temperature may be used in lieu of test determinations when relatively small quantities of sealer are used. Any material heated above the maximum safe heating temperature shall be discarded.
- D. During periods of rain or inclement weather, crackfilling material shall not be placed without the approval of the Engineer. After the period of rain or inclement weather, all cracks and joints shall be blown clean and dry with compressed air. All joints, cracks and surface defects must be free of any moisture prior to placement of the crackfilling material.

- E. It may be required by the Engineer that Contractors use a backer tape or another acceptable method of sealing the bottom of the reservoir if the joint sealant seeps down into the bottom of the crack, causing a void or low spot in the finished joint.
- F. All completed cracks shall be completely cured prior to allowing traffic to come in contact with sealant. If, with the Engineer's approval, it is necessary to open traffic to partially cured material, an adequate coating of mason sand or household toilet paper would be sufficient.
- G. On concrete streets the joints and cracks shall be pressure filled flush with the surface of the street and the material shall be applied immediately into the prepared crack or joint. On asphalt streets the joints and cracks shall be pressure filled with a wand or bander and squeegeed to a width three (3) times the width of the crack or joint and the material shall be applied immediately following heat lancing of the joints and cracks.
- H. In the event satisfactory sealing of a joint is not accomplished in a single pouring, the sealing compound shall be placed in two pourings. At least one-half of the required amount shall be placed in the first pouring, and the second pouring shall follow the first as soon as practicable after the first pouring has attained maximum shrinkage but not later than one hour after the first pouring. If the additional application is not poured within one hour, the joint/crack shall be re-cleaned at a lower pressure such that the first pour is not removed.

3.4 TRAFFIC CONTROL

- A. The Contractor shall maintain two lanes of traffic at all times on all streets unless approved by the Engineer. Barricades, warning signs and flagmen shall be provided in accordance with the State of Wisconsin Department of Transportation Manual of Traffic Control Devices, latest edition.

3.5 CLEAN UP

- A. All debris shall be kept within the barricaded construction area and shall not be allowed to fall within open traffic lanes. All debris shall be cleaned up prior to the end of the day and prior to the opening of traffic lanes. The Contractor shall properly dispose of such material.

END OF SECTION

SECTION 32 01 20**MUD-JACKING****PART 1 – GENERAL****1.1 SUMMARY**

- A. Section Includes
 - 1. Mud-Jacking Concrete
 - 2. Mud-Jacking Hole Restoration
 - 3. Clean-up

1.2 REFERENCES (Not Used)**1.3 SUBMITTALS**

- A. Grout mix design.

PART 2 – PRODUCTS**2.1 MATERIALS**

- A. Certified grout mix shall contain a minimum of 7 percent Portland Cement.

PART 3 – EXECUTION**3.1 MUDJACKING CONCRETE**

- A. Holes for injecting the grout mix will be spaced not less than 12 inches nor more than 18 inches from a traverse joint or crack and spaced not more than six (6) inches from center of the hole to center of hole.
- B. The grout mix will have a consistency stiff enough to raise the concrete without blowing or leaking, and yet fluid enough to prevent pyramiding.
- C. The hole size for slab raising operations shall be a minimum of one inch (1”) up to a maximum of two inches (2”) in diameter.

- D. The holes shall be spaced as necessary to uniformly assure complete communication of slurry between holes.
- E. Slabs shall be raised to the required elevation and pitched at one-quarter (1/4) inch per twelve (12) inches of lineal run, or as directed by the Engineer.

3.2 MUD-JACK HOLE RESTORATION

- A. All jacking operation holes will be cleared of the grout mix and filled with a stiff 1:3 cement mix, which will be consolidated and finished smooth.
- B. Holes shall be cleaned the full depth of the slab by removing excess slurry and wire brushing exposed sidewalls.
- C. Prior to placement of the Portland Cement, the surface around the holes shall be damp.

3.3 CLEAN-UP

- A. Slabs raised shall be thoroughly scraped and swept after completion, but prior to patching.
- B. Surrounding grass areas adjacent to slab raising shall be left in a clean, non-debrised condition.

END OF SECTION

SECTION 32 11 23**CRUSHED AGGREGATE BASE COURSE****PART 1 – GENERAL****1.1 SUMMARY****A. Section Includes**

1. Material testing.
2. Foundation preparation.
3. Crushed aggregate base course for roads, shoulders, and parking areas.
4. Preparation of crushed aggregate base course for paving.
5. Adjustment of utility accesses.

1.2 REFERENCES**A. American Association of State Highway and Transportation Officials (AASHTO):**

- | | | |
|----|------|--|
| 1. | T2 | Sampling Stone, Slag, Gravel, Sand, and Stone Block for Use as Highway Materials |
| 2. | T27 | Sieve Analysis of Fine and Coarse Aggregates |
| 3. | T37 | Sieve Analysis of Mineral Filler |
| 4. | T89 | Determining the Liquid Limit of Soil |
| 5. | T90 | Determining the Plastic Limit and Plasticity Index of Soils |
| 6. | T104 | Soundness of Aggregate by Use of Sodium Sulfate or Magnesium Sulfate |

B. American Society for Testing and Materials (ASTM):

- | | | |
|----|----------|---|
| 1. | 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. |
| 2. | D6938-07 | ASTM D6938-07 Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth). |

1.3 SUBMITTALS**A. Submit copies of the results of quality control testing (include location where test was done):**

1. Materials testing by Contractor:
 - a. Provide source testing report and approval letter from Owner the material was supplied.

- B. Submit daily one copy of weight tickets showing the net weight for each truckload of crushed aggregate base material delivered and placed.

1.4 QUALITY ASSURANCE

- A. The Engineer will obtain an independent testing laboratory to provide quality control testing.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Stockpiling of Aggregates
 - 1. Store aggregates to prevent contamination by foreign matter or by aggregates of different sizes.
- B. Delivery of Aggregates
 - 1. Vehicles used to transport aggregates shall be of a type to minimize loss of materials and excessive segregation of particles.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Aggregates
 - 1. Aggregates shall consist of hard, durable particles of crushed stone or crushed gravel and a filler of natural sand, stone sand or other finely divided mineral matter.
 - a. Remove oversize material by screening or by crushing to required sizes.
 - b. Composite material shall be free from organic matter, shale, and lumps or balls of clay and shall conform to the gradation requirements below.
 - 2. Liquid Limit and Plasticity Index:
 - a. Aggregate including any blended filler shall have a liquid limit of not more than 25 and a plasticity index of not more than 6.
 - 3. Fracture Count:
 - a. At least 58 percent of particles retained on the No. 4 sieve shall have at least one fractured face.
 - 4. Soundness:
 - a. When the fraction of aggregate retained on the No. 4 sieve is subjected to five cycles of the sodium sulfate soundness test, weighted loss shall not exceed 18 percent by weight.

5. Filler for Blending:
 - a. Additional mineral filler required to meet gradation requirements or for satisfactory binding of material shall be uniformly blended with base course material at the screening plant.
 - b. Mineral fillers shall be free from agglomerations or lumps and shall contain not more than 15 percent of material retained on a No. 4 sieve.
 6. Moisture Content: Shall not exceed 7 percent.
- B. Aggregate base course material produced from crushed concrete conforming to section 31 05 10 and this section shall be permitted if the material is from the project site or if allowed in the project manual.

C. Aggregate Gradation Requirements

1. Gradation No. 2 (1¼ inch material):

Sieve Size	% By Weight Passing	
	Crushed Gravel	Crushed Stone or Concrete
1 ¼ inch	95-100	95-100
¾ inch	70-93	70-93
3/8 inch	45-80	45-80
No. 4	30-63	30-63
No. 10	20-48	20-48
No. 40	8-28	8-28
No. 200	4-10(1)	2-12(1)

(1) Limited to 8.0 percent for base placed between new and old pavement.

2. Gradation No. 3 (¾ inch material):

Sieve Size	% By Weight Passing	
	Crushed Gravel	Crushed Stone or Concrete
1 inch	100	100
¾ inch	95-100	95-100
3/8 inch	50-90	50-90
No. 4	35-70	35-70
No. 10	15-55	15-55
No. 40	10-35	10-35
No. 200	8-15	5-15

2.2 SOURCE QUALITY CONTROL

- A. Test aggregate material per the following requirements:
 - 1. Sampling: AASHTO T2.
 - 2. Sieve Analysis:
 - a. AASHTO T27 for aggregates including fracture count.
 - b. AASHTO T37 for mineral fillers.
 - 3. Liquid Test: AASHTO T89.
 - 4. Plasticity Index: AASHTO T90.
 - 5. Soundness: AASHTO T104 using sodium sulfate.

PART 3 – EXECUTION

3.1 PREPARATION OF FOUNDATION

- A. Preparation of foundation for crushed aggregate base course shall be in accordance with requirements of Section "Excavation and Fill".
- B. Do not place the base course on a foundation that is soft or spongy or one that is covered by ice or snow.
- C. Do not place base material on a dry or dusty foundation when existing condition would cause rapid dissipation of moisture from base material and hinder or preclude its proper compaction.
 - 1. Apply water to such dry foundations and rework or recompact as necessary.

3.2 CRUSHED AGGREGATE BASE COURSE INSTALLATION

- A. Use gradations as follows:
 - 1. Base course: Gradation No. 2
 - 2. Top 3 inch layer of shoulders and aggregate driveways: Gradation No. 3
- B. Construct crushed aggregate base course to the width, thickness, section and location shown on the drawings.
 - 1. Maximum compacted thickness of any one layer shall not exceed 6 inches for 1¼ or ¾ inch material; 9 inches for 3 inch material.
 - a. When multiple courses are required, they shall be composed of approximately equal thicknesses.

C. Spreading Base Material

1. Proceed with the work such that the hauling equipment will travel over the previously placed material.
2. Route hauling equipment as uniformly as possible over all portions of the previously constructed layers of the base course.
3. Deposit the material on the foundation or previously placed layer in such a manner as to minimize segregation and to facilitate spreading to a uniform layer of the required dimensions.

D. Compaction

1. After a layer of aggregate has been placed and spread to the required thickness, width, and section, it shall be compacted.
2. If the material is deficient in moisture content, to attain the required density, add necessary moisture during compaction operations by means which provides a uniform application.
3. Each layer or course placed shall be compacted to at least 95 percent of the maximum dry density as determined by the Modified Proctor Test (ASTM D1557).
4. Areas where proper compaction is not obtainable due to segregation of materials, excess fines or other deficiencies shall be reworked or removed and replaced with material that will yield the desired results.
5. Prior to and during compaction operations, shape and maintain the material to the proper dimensions.

E. Maintenance

1. Provide maintenance of the base course until surface paving is complete or until the base is otherwise accepted.

F. Dust Abatement

1. Minimize the dispersion of dust from the base course by the application of water or other approved dust control materials.

G. Preparation of Base for Paving

1. The preparation of crushed aggregate base courses for paving shall include all necessary scarifying, shaping, and compacting to provide the required cross-sectional contour, a profile free from abrupt changes in elevation, and a surface free from pits, holes, depressions, or projections above the normal surface.
2. Remove any standing or ponded water, and ice or snow from the base before paving begins.

3.3 ADJUSTING UTILITY ACCESSES

- A. Adjust existing sanitary and storm manholes to proposed finished street grade.
- B. Adjust existing water valve boxes to proposed finished street grade.

END OF SECTION

SECTION 32 11 26.16**PULVERIZED ASPHALT AND AGGREGATE BASE COURSE****PART 1 – GENERAL****1.1 SUMMARY**

- A. Section Includes
 - 4. Material testing.
 - 5. Foundation preparation.
 - 6. Pulverize asphalt and aggregate base course installation.

1.2 REFERENCES

- A. Wisconsin Department of Transportation Section 325

1.3 QUALITY ASSURANCE

- A. The Engineer will obtain an independent testing laboratory to provide quality control testing.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Stockpiling of Aggregates
 - 1. Store aggregates to prevent contamination by foreign matter or by aggregates of different sizes.
- B. Delivery of Aggregates
 - 1. Vehicles used to transport aggregates shall be of a type to minimize loss of materials and excessive segregation of particles.

PART 2 – PRODUCTS**2.1 MATERIALS**

- A. The maximum allowable recycled asphalt pavement (RAP) content in the salvaged material is 50%. This will be based on pulverizing depths. If RAP is above 50%, blending with virgin aggregate material will be required.
- B. 97% or more of RAP will pass a 2-inch sieve.

PART 3 – EXECUTION

3.1 PREPARATION OF FOUNDATION

- A. Pulverize the full depth (shown on plans or elsewhere) of the existing asphaltic pavement and aggregate until 97 percent or more will pass the 2-inch sieve. Windrow material as construction operations dictate.
- B. Preparation of foundation for pulverized asphalt and aggregate base course shall be in accordance with requirements of Section "Excavation and Fill".
- C. Do not place the base course on a foundation that is soft or spongy or one that is covered by ice or snow.
- D. Do not place base material on a dry or dusty foundation when existing condition would cause rapid dissipation of moisture from base material and hinder or preclude its proper compaction.
 - 1. Apply water to such dry foundations and rework or re-compact as necessary.

3.2 PULVERIZE ASPHALT AND AGGREGATE BASE COURSE INSTALLATION

- A. Construct surface base course to the width, thickness, section, and location shown on the drawings.
 - 1. Maximum compacted thickness of any one layer shall not exceed 8 inches.
- B. Spreading Base Material
 - 1. Proceed with the work such that the hauling equipment will travel over previously placed material.
 - 2. Route hauling equipment as uniformly as possible over all portions of the previously constructed layers of the base course.
 - 3. Deposit the material on the foundation or previously placed layer in such a manner as to minimize segregation and to facilitate spreading to a uniform layer of the required dimensions.
- C. Compaction
 - 1. After a layer of aggregate has been placed and spread to the required thickness, width, and section, it shall be compacted.
 - 2. Compact the re-laid material first with either a rubber tired roller or 12.5-ton or heavier vibratory padfoot roller and second with an 8-ton or heavier vibratory steel roller. Add water, as required, both before and during compaction.
 - 3. Each layer or course placed shall be compacted to at least 95 percent of the maximum dry density as determined by the Modified Proctor Test (ASTMD1557).
 - 4. Areas where proper compaction is not obtainable due to segregation of materials, excess fines or other deficiencies shall be reworked or removed and replaced with material that will that will yield the desired results.

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5. Prior to and during compaction operations, shape and maintain the material to the proper dimensions.
- D. Maintenance
1. Provide maintenance of the base course until surface paving is complete or until the base is otherwise accepted.
- E. Dust Abatement
1. Minimize the dispersion of dust from the base course by the application of water or other approved dust control materials.

END OF SECTION

Attachment: 2018 Standard Specifications (6493 : Consider Updates to 2018 General Conditions and Standard Specifications)

SECTION 32 12 16

ASPHALTIC CONCRETE PAVEMENT

PART 1 – GENERAL

1.1 SUMMARY

- A. Section Includes
 - 1. Sampling and Testing Requirements
 - 2. Surface Preparation
 - 3. Asphaltic Concrete Paving

1.2 REFERENCES

- A. State of Wisconsin, Department of Transportation, Standard Specifications for Highway and Structure Construction, current edition, and all supplemental and interim supplemental specifications, as they may pertain, except the items: method of measurement and basis of payment shall not apply.

1.3 SUBMITTALS

- A. Submit copies of each asphaltic concrete mix design proposed for the project.
- B. Submit daily one (1) copy of weight tickets showing the net weight for each truckload of asphaltic concrete delivered and placed.

1.4 QUALITY ASSURANCE

- A. The City will perform density testing.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Store asphalt cement in tanks free of foreign substances and caked asphalt.
- B. Stockpile aggregate to prevent excessive segregation.
- C. Storage period for hot mix shall not exceed 2 hours.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Conform to WisDOT Standard Specifications for Highway and Structures Construction Sections 450, 455, and 460.

2.2 EQUIPMENT

- A. All equipment shall conform to WisDOT Standard Specifications for Highway and Structure Construction Section 450.

2.3 SOURCE QUALITY CONTROL TESTING

- A. Materials to be tested:
 - 1. Aggregate.
 - 2. Asphaltic concrete mix design confirmation.
- B. Tests for source quality control testing shall be in accordance with WisDOT Standard Specifications for Highway and Structures Construction Sections 450, 455 and 460.

PART 3 – EXECUTION

3.1 SURFACE PREPARATION

- A. Prepare a compacted foundation in accordance with Section "Crushed Aggregate Base Course".
- B. For existing pavement remove the following asphalt:
 - 1. Localized areas which tend to ravel, shove, or bleed.
 - 2. Areas unsuitable as a base.
 - 3. Unstable patching.
- C. Remove loose concrete and protruding joint material.
- D. Clean surface and joints of foreign material, e.g. dust, dirt, water, vegetation, etc.
- E. Control weeds with herbicide conforming to governing state or local authority, rules and regulations.

- F. Tack coat on existing asphaltic or concrete pavements at minimum rate of 0.025 gallon per square yard.
- G. Fill potholes and depressions with a leveling course of asphaltic concrete mix compacted to required density of surface course.
- H. Adjust and reset the casting after placing the binder course and prior to placing the surface course.

3.2 MIX PREPARATION

A. Aggregates

- 1. Separate into three sizes as defined under mix uniformity.
- 2. Store in separate bins until proportioned into mix.
- 3. When fillers are required, add through separate bin and feed.
- 4. Dry and heat aggregate.
- 5. Feed aggregate into mixer within 15°F plus or minus of required discharge temperature.

B. Asphalt Cement

- 1. Feed asphalt cement into mixer within 25°F plus or minus of required discharge temperature.

C. Mix Uniformity

- 1. Design mix tolerance (plus or minus):
 - a. Aggregates passing No. 4 and larger sieves: 6 percent.
 - b. Aggregates passing No. 4 and No. 100 sieves (inclusive): 4 percent.
 - c. Aggregates passing No. 200 sieves: 2 percent.
 - d. Bituminous Material: 0.4 percent.
- 2. Irrespective of tolerances, gradations shall be within the master range defined under aggregate gradation of this section.

3.3 ASPHALTIC CONCRETE INSTALLATION

A. Do not place asphaltic concrete pavement when following conditions exist:

- 1. Unstable or frozen base.
- 2. During rain or snow.
- 3. When air temperature is less than 35°F (1.5°C).

- B. Place to thickness, grade, section and location shown on the Drawings.
 - 1. When thickness of the lifts is not shown, thickness shall be 2 inches compacted.
 - 2. Finished surface shall be a true plane of 1/8 inch in 10 feet.
- C. Establish course thickness by placing in layers in accordance with WisDOT Standard Specifications Section 460.
- D. Hand Spreading
 - 1. Permitted only in areas inaccessible to finishing machines.
 - 2. Place by means of a shovel and shape with rake or lute.
 - 3. Do not rake over machine spread surfaces.
- E. Compaction
 - 1. Roll as soon as mixture will support roller without displacing or hair line cracking:
 - a. Initial pass shall be with drive roller toward paver.
 - b. Start at center and continue toward either edge.
 - c. Overlap successive trips.
 - 2. Subsequent strips laid shall start adjacent to previous laid strip and continue to opposite edge.
 - 3. Roll until:
 - a. Roller marks are eliminated.
 - b. Surface is of uniform density.
 - c. Required density is obtained.
- F. Bonding Joints
 - 1. Clean all joints.
 - 2. When joining new asphaltic concrete pavement to existing asphaltic concrete pavement, saw cut joints and tack coat.
 - 3. When joining new asphaltic concrete pavement to new asphaltic concrete pavement, saw cut end joints and tack coat cold joints.
 - 4. Milled joints may be acceptable if approved by the Engineer.
- G. Replace pavement full lane width with all joints saw cut and tacked when:
 - 1. Minimum density is not met.
 - 2. Minimum asphalt content is not met.
 - 3. There is significant segregation, raveling, rutting, or deformation.

3.4 FIELD QUALITY CONTROL

A. Density Testing

1. Perform by nuclear method in accordance with ASTM D2950.
2. Fifteen per production day or fifteen per 4,500 square yards placed, whichever number is greater.
3. Minimum density required shall be in accordance with WisDOT Standard Specifications Section 460.

END OF SECTION

SECTION 32 13 13

PORTLAND CEMENT CONCRETE PAVEMENT

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes

1. Sampling and testing requirements.
2. Surface preparation.
3. Portland cement concrete paving.

1.2 REFERENCES

A. American Association of State Highway and Transportation Officials (AASHTO):

1. M148 Liquid Membrane-Forming Compounds for Curing Concrete
2. M153 Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction
3. M171 Sheet Materials for Curing Concrete
4. M182 Burlap Cloth Made from Jute or Kenaf
5. M213 Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types)
6. M254 Corrosion Resistant Dowel Bars

B. American Society for Testing and Materials (ASTM):

1. A184 Spec. for Fabricated Deformed Steel Bar Mats for Concrete Reinforcement
2. A185 Spec. for Welded Steel Wire Fabric for Concrete Reinforcement
3. A615 Spec. for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
4. A617 Spec. for Axle-Steel Deformed and Plain Bars for Concrete Reinforcement
5. C31 Making and Curing Concrete Test Specimens in the Field
6. C33 Standard Specification for Concrete Aggregates
7. C39 Test for Compressive Strength of Cylindrical Concrete Specimens
8. C94 Spec. for Ready-Mixed Concrete
9. C143 Test for Slump of Portland Cement Concrete
10. C172 Sampling Fresh Concrete
11. C231 Test for Air Content of Freshly Mixed Concrete by the Pressure Method

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12. C309 Standard Specifications for Liquid Membrane – Forming Compounds for Curing Concrete
13. C1315 Spec. for Liquid Membrane-Forming Compounds Having Special properties for Curing and Sealing Concrete
14. C920 Spec. for Elastomeric Joint Sealants
15. D1751 Spec. for Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types)
16. D1752 Spec. for Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction
17. D3405 Spec. for Joint Sealants, Hot-Poured for Concrete and Asphalt Pavements
18. E329 Recommended Practice for Inspection and Testing Agencies for Concrete, Steel, and Bituminous Materials as Used in Construction

C. American Association of State and Highway Transportation Officials

1. T96 Standard Method of Test for Resistance to Degradation of Small-Size Course Aggregate by Abrasion and Impact in the Los Angeles Machine
2. T013 Standard Method of Test for Soundness of Aggregates by Freezing and Thawing
3. T104 Standard Method of Test for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate

D. Wisconsin Department of Transportation (WisDOT), State of Wisconsin Standard Specifications for Highway Construction, Latest Edition (State Specifications)

1.3 SUBMITTALS

A. Design Mixes

1. Submit copies of the composition and strength testing results for design mix for each type of concrete.
2. Manufacturer's certification of the curing compound.

B. Certificates

1. Provide producer's certification that the supplied materials meet the applicable specification requirements.
2. Provide the material content per cubic yard for each class of concrete furnished.
 - a. Dry weight of concrete.
 - b. Saturated surface-dried weights of fine and coarse aggregates.
 - c. Quantity, type, and name of any admixtures used.

- d. Weight of water.
- 3. Provide delivery tickets for each batch in accordance with ASTM C94.
 - a. Delivery tickets are not required for job-mixed concrete.

C. Samples

- 1. Provide all material samples needed for the required testing.
- 2. The Engineer will create and test concrete cylinders.

1.4 QUALITY ASSURANCE/QUALITY MANAGEMENT PLAN

A. General Requirements

- 1. Provide a Quality Management Plan (QMP) conforming to the WisDOT State Specifications based on the size of the project.
- 2. Small Quantity projects for class I is defined as follows:
 - a. Less than 150 cubic yards of structure concrete placed under a single bid item.
 - b. Less than 2500 cubic yards of slip-formed pavement placed using a single mix design.
 - c. Less than 1000 cubic yards of non-slipped formed pavement placed using a single mix design.

B. Small Quantity Project Requirements

- 1. Installation testing to be completed by the Owner includes the following:
 - a. Slump
 - b. Air-entrainment
 - c. Compressive strength test
- 2. Other testing per the WisDOT State Specification Sections 415 is to be completed by the Contractor including:
 - a. Probing method for depth on slipped form pavement per Section 415.3.16.4.2.
 - b. Surface Testing and Correction per 415.3.10.
- 3. Submit an abbreviated QMP per the WisDOT State Specification Sections 710.2.2 (2) and (3) and 710.2.
 - a. Eliminate sections regarding measurement and payment and incentive and disincentive based on the results.
- 4. Additional tests may be conducted by the Contractor for those conducted by the Owner.

C. Large Quantity Projects

1. Installation testing per the WisDOT State Specifications is to be completed by the Contractor.
2. Modify the WisDOT QMP for concrete pavement based on the following:
 - a. Arrange one pre-pour meeting to discuss concrete placement.
 - b. Number of compressive strength tests to be as noted below.
 - c. Eliminate sections regarding measurement and payment and incentive and disincentive based on the results.

D. Compressive Strength Testing

1. Small Quantity Projects
 - a. Tests to be taken for each 200 cubic yards of concrete placed or at least once each day for each design mix.
 - b. Test one cylinder at 7 days.
 - c. Test two cylinders at 28 days.
 - d. Remaining cylinder will be tested in the event a prior test fails.
2. Large Quantity Projects
 - a. Tests to be taken for each 500 cubic yards of concrete placed or at least once for each ½ day for each mix.
3. 28 Day Test Requirements
 - a. Compressive strength is 4,000 psi.
 - b. No individual test falls more than 500 psi below specified compressive strength.
 - c. If differential strengths of the two specimens is 350 psi or greater, the low strength specimen shall be discarded and the strength of the remaining cylinder shall then be the test result. If the test is below 3500 psi, the test is considered a failure. Also, if either of the two 28 day specimens falls below 3000 psi, the test result is considered a failure.
4. Failure of compressive strength tests shall result in the following additional testing:
 - a. Provide two core samples of each portion of work affected and perform compressive strength tests.
 - b. Replace work if core samples do not equal or exceed specified compressive strength
 - c. Additional testing shall be completed at the Contractor's expense, including traffic control to perform and replace nonconforming work.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Concrete

1. Conform to the WisDOT Standard Specifications for Highway and Structure Construction, Latest Edition.
 - a. Class I concrete
 - b. Twenty-eight day compressive strength: 4,000 psi
 - c. Air entrainment:
 - 1) Slip formed concrete – 7.0 percent, +/- 1.5%
 - 2) Other concrete – 6.0%, +/- 1.5%
 - d. Slump:
 - 1). 2.5 inch or less – Slipformed
 - 2). 4.0 inch or less – Non-Slip Formed

B. Aggregates

1. Conform to WisDOT State Specifications
 - a. Slip formed concrete aggregate shall conform to Soil Class A-6 (1 1/2-Inch Crushed Rock) (WisDOT Size No. 2 Aggregate per 501.2.5.4.5)
 - b. Hand formed concrete aggregate shall conform to either:
 - i. Soil Class A-7 (3/4-Inch Crushed Rock) (WisDOT Size No. 1 Aggregate per 501.2.5.4.5)
 - ii. Soil Class A-6 (1 1/2-Inch Crushed Rock) (WisDOT Size No. 2 Aggregate per 501.2.5.4.5)
2. Conform to ASTM C33.
3. Aggregate Wear: Loss of abrasion and impact shall not exceed 50 percent by mass (AASHTO T96)
4. Aggregate Soundness: The weighted average sodium sulfate loss shall not exceed 12 percent by mass (AASHTO T104)
5. Freeze-Thaw: The weighted average loss shall not exceed 18 percent by mass (AASHTO T103)

C. Reinforcement

1. Conform to the WisDOT Standard Specifications for Highway and Structure Construction, Latest Edition.

D. Joint Sealing

1. All concrete pavement joints shall be sealed.

E. Curing Material

1. Use linseed oil based material conforming to the WisDOT Standard Specifications for Highway and Structure Construction, Latest Edition.

2.2 EQUIPMENT

A. Concrete Spreader

1. Shall be capable of striking off the surface of the concrete in a longitudinal direction of the slab at any required elevation.

B. Slip-Form Paver

1. Shall be designed to consolidate, screed, and float-finish freshly placed concrete in one complete pass.
2. Shall be equipped to vibrate the concrete for the full width and depth of course.
3. Machine design shall prevent the spreading or slumping of the concrete.

C. Finishing Machine (for Formed Pavement)

1. Shall be of the screeding and troweling type, equipped with at least two oscillating transverse screeds, adjustable tilt, and crown.
2. Machine shall be capable of striking off and consolidating concrete.

D. Vibrators

1. May be pan type or the internal type with immersed tube or multiple spuds.
2. Frequency Requirements:
 - a. Pan Type: 4,000 impulses per minute minimum.
 - b. Internal Type:
 - 1) Tube Vibrators: 5,000 impulses per minute minimum.
 - 2) Spud Vibrators: 7,000 impulses per minute minimum.

2.3 SOURCE QUALITY CONTROL

A. Material Acceptance Testing

1. Design mix.

B. Perform additional testing under the following circumstances:

1. Material failure.
2. Change in ready-mix source.
3. Design mix changes requested by Contractor.

PART 3 – EXECUTION**3.1 PRE-POUR MEETING**

- A. Attend a pre-pour meeting prior to construction with a slip form paver for each paving event, as determined by the Engineer.

3.2 BASE PREPARATION

- A. Prepare in accordance with the WisDOT Standard Specifications for Highway and Structure Construction, Latest Edition.
- B. Before placing concrete:
 - 1. Remove loose material from compacted base.
 - 2. Proof-roll prepared base surface to check for unstable areas and the need for additional compaction.
 - 3. Correct any deficiencies prior to paving.
 - 4. Adjust all fixtures (i.e., castings, frames, inlets, and valve boxes) per City standards
 - 5. Moisten the compacted base as required to prevent the base from removing water from the placed concrete.

3.3 PLACING AND FINISHING CONCRETE

- A. Place and finish in accordance with the WisDOT Standard Specifications for Highway and Structure Construction, Latest Edition.
- B. Provide a concrete stamp per the detail.

3.4 CONCRETE CORES

- A. Concrete cores completed by the Contractor shall be repaired with like material as approved by the Engineer.

3.5 CONCRETE WORK WARRANTY

- A. Work shall be warrantied for a period of one year after substantial completion covering;
 - 1. Transverse cracking.
 - 2. Spalling.
 - 3. Popouts.
 - 4. Other detrimental impacts related to workmanship.

- B. Cost for repairs and traffic control shall be the responsibility of the Contractor.

3.6 OPENING ROADWAY TO TRAFFIC

- A. If additional strength tests are required to open the roadway to traffic prior to the 7-day break, the contractor shall cast cylinders to verify compressive strengths of 3000 pounds per square inch. Submit the compressive strength test results to the Engineer for verification. Compute the opening strength as the average of compressive strength test results for 2 cylinders. If the strength of a cylinder is less than 90 percent of the required strength, the Engineer will reject the resulting average.
- B. For concrete patches completed with high early strength concrete, the Engineer will complete a 3-day cylinder break to check strength prior to opening the roadway to traffic.

END OF SECTION

SECTION 32 16 13

CONCRETE CURB AND GUTTER

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes

1. Fine grading and compaction of subgrade.
2. Curb and gutter construction.
3. Backfilling and finish grading.
4. Landscaping.

1.2 REFERENCES

A. American Concrete Institute (ACI)

1. ACI 305 Recommended Practice for Hot Weather Concreting
2. ACI 306 Recommended Practice for Cold Weather Concreting

B. American Society for Testing and Materials (ASTM):

1. A615 Spec. for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
2. C31 Making and Curing Concrete Test Specimens in the Field
3. C33 Spec. for Concrete Aggregate
4. C39 Test for Compressive Strength of Cylindrical Concrete Specimens
5. C94 Spec. for Ready-Mixed Concrete
6. C143 Test for Slump of Portland Cement Concrete
7. C150 Spec. for Portland Cement
8. C172 Sampling Fresh Concrete
9. C231 Test for Air Content of Freshly Mixed Concrete by the Pressure Method
10. C309 Standard Specifications for Liquid Membrane – Forming Compounds for Curing Concrete
11. C1315 Spec. for Liquid Membrane-Forming Compounds Having Special properties for Curing and Sealing Concrete
12. D1557 Test Methods for Moisture-Density Relations of Soils and Soils-Aggregate Mixtures Using 10-Lb. (4.54 Kg) Rammer and 18-In. (457 mm) Drop
13. D1751 Spec. for Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types)

2018 Specifications

City of De Pere

14. E329 Recommended Practice for Inspection and Testing Agencies for Concrete, Steel, and Bituminous Materials as Used in Construction

C. American Association of State and Highway Transportation Officials

1. T96 Standard Method of Test for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
2. T013 Standard Method of Test for Soundness of Aggregates by Freezing and Thawing
3. T104 Standard Method of Test for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate.

D. Wisconsin Department of Transportation (WisDOT), State of Wisconsin Standard Specifications for Highway Structure Construction, Latest Edition (State Specification)

1.3 SUBMITTALS

- A. Concrete design mix of composition and strength testing results for design mix for each type of concrete.
- B. Producer's certification that the supplied materials meet the applicable specification requirements.
- C. Manufacturer's certification of the curing compound.

1.4 QUALITY ASSURANCE/QUALITY MANAGEMENT PLAN

A. General Requirements

1. Provide a Quality Management Plan (QMP) conforming to the WisDOT State Specifications for Class II concrete

B. Testing to be completed as follows:

1. Installation Testing by Owner:
 - a. Slump.
 - b. Air-entrainment.
 - c. Compressive strength test.
2. Other testing per the WisDOT State Specification is to be completed by the Contractor.
3. Additional tests may be conducted by the Contractor for those conducted by the Owner.

- C. The following shall be in accordance with the stated State Specifications and references:
 - 1. Inspection and Testing: ASTM E329.
 - 2. Sampling: ASTM C172.
 - 3. Slump: ASTM C143.
 - 4. Air-Entrainment: ASTM C231.
 - 5. Compressive Strength Test: ASTM C31 and C39.

- D. Compressive strength test shall consist of four standard test cylinders made from a single batch of concrete:
 - 1. Tests to be taken for each 200 cubic yards of concrete placed or at least once each day.
 - 2. Test one cylinder at 7 days.
 - 3. Test two cylinders at 28 days.
 - 4. Remaining cylinder shall be tested in the event prior tests fail.
 - 5. 28 Day Test Requirements:
 - a. Compressive strength is 4,000 psi.
 - b. No individual test falls more than 500 psi below specified compressive strength.
 - c. If differential strengths of the two specimens is 350 psi or greater, the low strength specimen shall be discarded and the strength of the remaining cylinder shall then be the test result.
 - d. If the test result is below 3500 psi, the test is considered a failure. Also, if either of the two 28 day specimens falls below 3000 psi, the test result is considered a failure.
 - 6. Failure of compressive strength tests shall result in following additional testing:
 - a. Provide two core samples of each portion of work affected and perform compressive strength tests.
 - b. Replace work if core samples do not equal or exceed specified compressive strength.
 - c. Additional testing shall be completed at the Contractor's expense.

PART 2 – PRODUCTS

2.1 CONCRETE

- A. Conform to ASTM C94, WisDOT State Specifications, and the following:
 - 1. Class II concrete
 - 2. Twenty-eight Day Compression Strength: 4000 psi.
 - 3. Aggregate shall conform to either of the following:

- a. Soil Class A-7 (3/4-Inch Crushed Rock) (WisDOT Size No. 1 Aggregate per 501.2.5.4.5)
 - b. Soil Class A-6 (1 1/2-Inch Crushed Rock) (WisDOT Size No. 2 Aggregate per 501.2.5.4.5)
- 4. Minimum Cement Content: 6 bags/c.y.
- 5. Air Content: 6 percent $\pm$ 1.5 percent.
- 6. Maximum Water-Cement Ratio: .44
- 7. Slump:
 - a. 2.5 inch or less – Slipformed
 - b. 4.0 inch or less – Non-slipformed
- B. Admixtures to lower freezing point of concrete are not permitted.

2.2 CEMENT

- A. Conform to ASTM C150, Type 1.

2.3 AGGREGATES

- A. Conform to WisDOT State Specifications
- B. Conform to ASTM C33.
- C. Aggregate Wear: Loss of abrasion and impact shall not exceed 50 percent by mass (AASHTO T96)
- D. Aggregate Soundness: The weighted average sodium sulfate loss shall not exceed 12 percent by mass (AASHTO T104)
- E. Freeze-Thaw: The weighted average loss shall not exceed 18 percent by mass (AASHTO T103)

2.4 EXPANSION JOINT

- A. Conform with ASTM D1751.
- B. Thickness: $\frac{3}{4}$ inch

2.5 REINFORCEMENT BAR

- A. Conform with WisDOT Standard Specifications for Highway Construction, Latest Edition, Section 505.
- B. Grade 60.
- C. Minimum Bar Size: #4, Epoxy Coated

2.6 CURING MATERIALS

- A. Use linseed oil based material conforming to the WisDOT Standard Specifications for Highway and Structure Construction, Latest Edition.

2.7 CRUSHED AGGREGATE BASE MATERIAL

- A. Aggregates shall consist of hard, durable particles of crushed stone or crushed gravel and a filler of natural sand, stone sand or other finely divided mineral matter.
 - 1. Remove oversize material by screening or by crushing to required sizes.
 - 2. Composite material shall be free from organic matter, shale, and lumps or balls of clay and shall conform to the gradation requirements below.
- B. Liquid Limit and Plasticity Index
 - 1. Aggregate, including any blended filler, shall have a liquid limit of not more than 25 and a plasticity index of not more than 6.
- C. Fracture Count
 - 1. At least 45 percent of particles retained on the No. 4 sieve shall have at least one fractured face.
- D. Soundness
 - 1. When the fraction of aggregate retained on the No. 4 sieve is subjected to five cycles of the sodium sulfate soundness test, weighted loss shall not exceed 18 percent by weight.

E. Filler for Blending

1. Additional mineral filler required to meet gradation requirements or for satisfactory binding of material shall be uniformly blended with base course material at the screening plant.

F. Moisture content shall not exceed 7 percent.

1. Additional mineral filler required to meet gradation requirements or for satisfactory binding of material shall be uniformly blended with base course material at the screening plant.
2. Mineral fillers shall be free from agglomerations or lumps and shall contain not more than 15 percent of material retained on a No. 4 sieve.

G. Aggregate Gradation Requirements shall conform to C-2 or C-4 from Soils and Aggregate.

PART 3 – EXECUTION

3.1 PREPARATION OF SUBGRADE

- A. Prepare the subgrade by excavating to the lines, grades, and cross-sections shown on the drawings as required for placing curb and gutter.
- B. If subgrade excavation in cut is required, stockpile the surplus material for use in fill areas behind the curb and gutter, or dispose of at a site provided by the Contractor.
- C. If subgrade excavation in fill is required, then furnish, install, and compact granular sub-base material.
 1. Sub-base material shall be Soil Class C-2 or C-4 or suitable material from cut areas.
- D. Compact to minimum 95 percent modified proctor density (ASTM D1557).

3.2 PLACING AND GRADING BASE COURSE

- A. Provide a minimum of 6 inches of base material.
- B. The subgrade shall be prepared by fine grading to the lines, grades, and cross-sections shown on the drawings as required for placing the curb and gutter.
- C. Compact to minimum 95 percent modified proctor density (ASTM D1557).

3.3 CATCH BASINS/INLETS

- A. Adjust catch basins/inlets to curb and gutter elevation per City standards.

3.4 FORMS

- A. Conform to ACI 347.
- B. Provide forms of the size and type of material required to properly construct the curb and gutter as required.
- C. Properly brace or tie together forms to maintain position and shape.
- D. Clean and coat forms with clear, non-staining mineral or paraffin base form oil prior to placement of the concrete against the forms.
- E. Removal of Forms
 - 1. The forms may be removed provided the concrete obtains sufficient strength so as not to be damaged and will retain its shape.
 - 2. Protect the curb and gutter until the concrete has attained design strength.

3.5 SLIPFORM CONSTRUCTION

- A. The use of slipform equipment will be acceptable.
- B. Coordinate the operations of mixing, delivering, and placing of the concrete to provide uniform progress with minimum stopping and starting of the curb machine.
- C. The curb machine shall be capable of placing the specified curb and gutter section with an adequate amount of vibration to preclude the possibility of honeycomb formation.

3.6 ENVIRONMENTAL CONSTRUCTION

- A. Hot Weather Concreting
 - 1. Follow ACI 305 whenever mean surrounding air temperature equals or exceeds 80°F (27°C).
 - 2. Do not place concrete whenever air temperature equals or exceeds 90°F (32°C).

B. Cold Weather Concreting

1. Follow ACI 306 whenever mean surrounding air temperature is below 40°F (4.5°C).

C. Do not place concrete during rain, sleet, or snow unless protection is provided.

3.7 PLACING CONCRETE

A. Construct curb and gutter to match the dimensions shown in the details.

B. Construct curb and gutter on the prepared and moistened foundation in one course.

C. Construct curb and gutter to the required lines and grades as shown on the drawings.

D. Place concrete by using the slipform or fixed form method.

E. Consolidate concrete as follows:

F. Contraction Joints

1. Sawcut at 10-foot intervals.
2. Cut to a minimum depth of two (2) inches.
3. Perform sawing as soon as practicable after concrete has set sufficiently to preclude raveling during the sawing and before any shrinkage cracks occur.

G. Place expansion joints as follows:

1. 300 feet maximum spacing on tangent sections.
2. Where radial curb and gutter meet tangent sections.
3. Adjacent to existing expansion joints in abutting concrete paving.
4. Three (3) feet from inlets.
5. Place at right angles to the flow line and surface of the gutters.

H. Place depressions for handicapped ramps and driveways as required and shown on the drawings.

I. Place a concrete stamp per the detail.

3.8 REINFORCEMENT

- A. Install two (2) - twenty (20) foot long number four (4) deformed reinforcement bars over all trenches that fall under any portion of the Concrete Curb & Gutter being constructed. The Engineer will determine the location of all deformed reinforcement bars.
- B. Install two (2) number four (4) epoxy coated deformed reinforcement bars, 12 inches long between new and existing slabs. The bars shall be drilled six inches into the existing concrete slab.

3.9 FINISHING

- A. Finish in accordance with the WisDOT Standard Specifications for Highway and Structure Construction, Latest Edition
- B. Thoroughly trowel and brush or lightly broom the face surfaces of the curb and gutter prior to concrete set.
- C. Round exposed edges of the curb and gutter to ¼ inch radius, both front and back, and edges adjacent to expansion joints.
- D. Pointed with mortar composed of three parts sand and one part Portland cement honeycombed areas as soon as possible after the curb and gutter has been placed.

3.10 CURB RAMPING

- A. Provide depressed and sloped curb at curb ramping locations and driveways shown on the Drawings or as directed by the Engineer.
- B. Provide appropriate longitudinal slope on curb as shown on the Drawings for curb ramps and for driveways or as directed by the Engineer.

3.11 CURING

- A. Start curing activities as soon as free water has disappeared from the surface of concrete after placing and finishing.
- B. Apply curing compound to all exposed surfaces by spraying a uniform coating in such a manner as to provide a continuous water impermeable surface. Apply in accordance with

manufacturer's recommendations to limit loss of water to not more than 0.40 kg/m² in 72 hours.

- C. Under hot weather conditions, conform to ACI 305.
- D. Under cold weather conditions, conform to ACI 306.
- E. During curing period, protect concrete from damaging mechanical disturbances, water flow, loading, shock, and vibration.

3.12 RESTORATION

A. Backfilling

- 1. Backfill low areas with Soils Class G-1 as defined in Section "Soils and Aggregates".
 - a. Between curb and property line.
 - b. In boulevard areas.
 - c. Shape to line and grade to permit landscaping.
 - d. Compact to 85 percent Modified Proctor density (ASTM D1557) and test roll.

B. Landscaping

- 1. Perform as defined in Section "Turf and Grasses".

3.13 CONCRETE WORK WARRANTY

- A. Work shall be warrantied for a period of one year after substantial completion covering;
 - 1. Transverse cracking.
 - 2. Spalling.
 - 3. Popouts.
 - 4. Other detrimental impacts related to workmanship.
- B. Cost for repairs and traffic control shall be the responsibility of the Contractor.

END OF SECTION

SECTION 32 16 20**CONCRETE SIDEWALKS AND DRIVEWAYS****PART 1 – GENERAL****1.1 SUMMARY****A. Section Includes**

1. Excavation.
2. Compaction aggregate base.
3. Sidewalk and driveway construction.

1.2 REFERENCES STANDARDS**A. American Society for Testing and Materials (ASTM)**

- | | | |
|-----|-------|---|
| 1. | A185 | Specification for Welded Steel Wire Fabric for Concrete Reinforcement. |
| 2. | C31 | Making and Curing Concrete Test Specimens in the Field. |
| 3. | C33 | Specification for Concrete Aggregates. |
| 4. | C39 | Test for Compressive Strength of Cylindrical Concrete Specimens. |
| 5. | C94 | Specification for Ready-Mixed Concrete. |
| 6. | C143 | Test for Slump of Portland Cement Concrete. |
| 7. | C150 | Specification for Portland Cement. |
| 8. | C172 | Sampling Fresh Concrete. |
| 9. | C231 | Test for Air Content of Freshly Mixed Concrete by the Pressure Method. |
| 10. | C309 | Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete. |
| 11. | C1315 | Specification for Liquid Membrane-Forming Compounds Having Special Properties for Curing and Sealing Concrete. |
| 12. | 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. |
| 13. | D1751 | Specification for Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Type). |
| 14. | E329 | Standard Recommended Practice for Inspection Testing Agencies for Concrete, Steel and Bituminous Materials Used in Construction. |

B. American Concrete Institute (ACI)

1. ACI 304 Measuring, Mixing, Transporting, and Placing Concrete.
2. ACI 305 Recommended Practice for Hot Weather Concreting.
3. ACI 306 Recommended Practice for Cold Weather Concreting.
4. ACI 347 Recommended Practice for Concrete Formwork.

C. American Association of State and Highway Transportation Officials

1. T96 Standard Method of Test for Resistance to Degradation of Small-Size Course Aggregate by Abrasion and impact in the Los Angeles Machine
2. T013 Standard Method of Test for Soundness of Aggregates by Freezing and Thawing
3. T104 Standard Method of Test for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate

D. Wisconsin Department of Transportation (WisDOT), State of Wisconsin Standards Specifications for Highway Construction, Latest Edition (State Specifications)

1.3 SUBMITTALS

- A. Concrete design mix of composition and strength testing results for design mix for each type of concrete.
- B. Producer's certification that the supplied materials meet the applicable specification requirements.
- C. Manufacturer's certification for curing compound.

1.4 QUALITY ASSURANCE/QUALITY MANAGEMENT PLAN

A. General Requirements

1. Provide a Quality Management Plan (QMP) conforming to the WisDOT State Specifications for Class II concrete.

B. Testing to be completed as follows:

1. Installation Testing by Owner:
 - a. Slump.
 - b. Air-entrainment.
 - c. Compressive strength test.

2. Other testing per the WisDOT State Specification is to be completed by the Contractor.
 3. Additional tests may be conducted by the Contractor for those conducted by the Owner.
- C. The following shall be in accordance with the State Specifications and stated references:
1. Inspection and Testing: ASTM E329.
 2. Sampling: ASTM C172.
 3. Slump: ASTM C143.
 4. Air-Entrainment: ASTM C231.
 5. Compressive Strength Test: ASTM C31 and C39.
- D. Compressive strength test shall consist of four standard test cylinders made from a single batch of concrete:
1. Tests to be taken for each 200 cubic yards of concrete placed or at least once each day.
 2. Test one cylinder at 7 days.
 3. Test two cylinders at 28 days.
 4. Remaining cylinder shall be tested in the event prior tests fail.
 5. 28 Day Test Requirements:
 - a. Compressive strength is 4,000 psi.
 - b. No individual test falls more than 500 psi below specified compressive strength.
 - c. If differential strengths of the two specimens is 350 psi or greater, the low strength specimen shall be discarded and the strength of the remaining cylinder shall then be the test result.
 - d. If the test result is below 3500 psi, the test is considered a failure. Also, if either of the two 28 day specimens falls below 3000 psi, the test result is considered a failure.
 6. Failure of compressive strength tests shall result in following additional testing:
 - a. Provide two core samples of each portion of work affected and perform compressive strength tests.
 - b. Replace work if core samples do not equal or exceed specified compressive strength.
 - c. Additional testing shall be completed at the Contractor's expense.

PART 2 – PRODUCTS

2.1 CONCRETE

- A. Concrete shall conform to ASTM C94, the WisDOT State Specification, and the following:
 - 1. Class II concrete
 - 2. Twenty-eight Day Compressive Strength: 4,000 psi.
 - 3. Aggregate shall conform to either of the following:
 - a. Soil Class A-7 (3/4-Inch Crushed Rock) (WisDOT Size No. 1 Aggregate per 501.2.5.4.5)
 - b. Soil Class A-6 (1 1/2-Inch Crushed Rock) (WisDOT Size No. 2 Aggregate per 501.2.5.4.5)
 - 4. Minimum Cement Content: 6 bags/c.y.
 - 5. Air Content: 6 percent $\pm$ 1.5 percent.
 - 6. Maximum Water-Cement Ratio: .44
 - 7. Slump:
 - a. 2.5 inch or less – Slipformed
 - b. 4.0 inch or less – Non-Slipformed

2.2 CEMENT

- A. Conform to ASTM C150, Type 1.

2.3 AGGREGATES

- A. Conform to WisDOT State Specifications
- B. Conform to ASTM C33.
- C. Aggregate Wear: Loss of abrasion and impact shall not exceed 50 percent by mass (AASHTO T96)
- D. Aggregate Soundness: The weighted average sodium sulfate loss shall not exceed 12 percent by mass (AASHTO T104)
- E. Freeze-Thaw: The weighted average loss shall not exceed 18 percent by mass (AASHTO T103)

2.4 CURING MATERIALS

- A. Use linseed oil based material conforming to the WisDOT Standard Specifications for Highway and Structure Construction, Latest Edition.

2.5 EXPANSION JOINT

- A. Conform to ASTM D1751.
- B. Thickness: ½ inch.

2.6 REINFORCEMENT BAR

- A. Conform with WisDOT Standard Specifications for Highway Construction, Latest Edition, Section 505.
- B. Grade 60.
- C. Minimum Bar Size: #4., Epoxy Coated

2.7 CURB RAMP DETECTABLE WARNING FIELD

- A. Provide detectable warning fields in curb ramps in accordance with the requirements of the current edition of the Standard Specification for the State Department of Transportation.
- B. Fields to be unpainted cast iron.
- C. Acceptable products are:
 - 1. Neenah Foundry
 - 2. Cast DWD by Pioneer Detectable LLC
 - 3. Other Engineer approved equal cast iron plate.

PART 3 – EXECUTION

3.1 PREPARATION OF THE SUBGRADE

- A. Excavate subgrade to line and grade shown on plans and details.

- B. Provide a minimum of 4 inches of base.
 - 1. Soil Class C-2 or C-4 as defined in Section "Soils and Aggregates".
- C. Compact to minimum 95 percent modified proctor density, ASTM D1557.
- D. Surplus material may be used in fill areas.
- E. Excess material shall be disposed at a site provided by Contractor.
- F. The foundation shall be six (6) inches wider than the sidewalk.

3.2 FORMS

- A. Conform to ACI 347.
- B. Forms shall be of the size, shape and type of material required to construct the sidewalk and driveway as required.
- C. Brace and tie together forms to maintain position and shape.
- D. Clean and coat forms with clear, non-staining mineral or paraffin base form oil prior to placement of concrete against forms.
- E. Surfaces in contact with concrete shall be free from frost, debris, and other deleterious material.
- F. Moisten the base prior to placement of concrete.
- G. Remove laitance and other unsound material before freshly placed concrete is placed against previously placed concrete.
- H. Have materials available to protect concrete from damage until it has hardened sufficiently to resist damage.
- I. Unless noted otherwise, furnish the following minimum thicknesses:
 - 1. Sidewalks: 4"
 - 2. Curb Ramps: 6" unless directed otherwise by the Engineer.
 - 3. Driveways: Residential: 6"

- 4. Driveways: Industrial, Business, Commercial: 8"
- 5. Alleys: 8"
- J. Sidewalk shall be 5 feet in width for new construction. Match width of existing sidewalk for reconstruction unless directed otherwise by the Engineer.
- K. The sidewalk shall slope a maximum of $\frac{1}{4}$ inch per foot towards the street or as shown on the Plan or as directed by the Engineer.
- L. Edges of sidewalks and edges adjacent to expansion joints or construction joints shall be finished with an edging tool having a radius of $\frac{1}{4}$ inch.

3.3 EXPANSION JOINTS

- A. Location and geometry of expansion joints shall be as shown on the Drawings or according to the following criteria:
 - 1. At right angle or tee intersections.
 - 2. At sidewalk and stoop intersections.
 - 3. Where sidewalk and driveway adjoin vertical surfaces.
 - 4. Where sidewalk and driveway adjoin existing pavements.
 - 5. Where driveway and sidewalk adjoin curb and gutter.
 - 6. Where 4" thick sidewalk meets 6" thick sidewalk at curb ramps.
 - 7. Maximum spacing 300 feet.
- B. Extend filler full width and depth of concrete, with top slightly below finished surface of concrete.

3.4 CONTRACTION JOINTS

- A. Locate in accordance with details and following criteria:
 - 1. Transverse joints in the sidewalk shall be spaced at an average spacing of 5 foot intervals.
 - 2. When matching existing concrete sidewalk results in a variable joint spacing, transverse joint spacing in the new sidewalk shall be modified to a minimum spacing of 4 feet and a maximum spacing of 6 feet, unless additional variation is approved by the Engineer.
 - 3. Transverse joints shall be placed down the center of the approach portion of the driveway.

4. Joints shall not deviate more than five degrees from a right angle measured at intersecting joints or flatwork edge, and more than ½ inch from a straight line.

B. Joint Dimensions

1. Depth:
 - a. Minimum 1 inch or one-fifth of slab depth whichever is greater.
2. Width:
 - a. Minimum ⅛ inch for sawed joints, ¼ inch for other types.
 - b. Maximum ¼ inch for sawed joints, ⅜ inch for other types.

3.5 ENVIRONMENTAL REQUIREMENTS

A. Hot Weather Concreting

1. Follow ACI 305 whenever mean surrounding air temperature equals or exceeds 80°F (27°C).
2. Do not place concrete whenever air temperature equals or exceeds 90°F (32°C).

B. Cold Weather Concreting

1. Follow ACI 306 whenever mean surrounding air temperature is below 40°F (4.5°C).

C. Do not place concrete during rain, sleet, or snow unless protection is provided.

3.6 PLACING CONCRETE

A. Conveying Concrete

1. Convey concrete from mixer to place of final deposit by methods that will prevent separation or loss of materials.
2. Equipment for chuting, pumping, or pneumatically conveying concrete shall be capable of providing a supply of concrete at site of work without separation of ingredients and without interruptions sufficient to permit loss of plasticity between successive placements.
3. Unless otherwise approved, conform to ACI 304.

B. Depositing Concrete

1. Place concrete on prepared and moistened foundation in a single lift.
2. Deposit concrete as nearly as practicable to its final position to avoid segregation due to rehandling or flowing.

3. Carry on concreting at such a rate that concrete is at all times plastic, and flows readily into spaces between reinforcing.
4. Do not deposit concrete that has partially hardened or that has been contaminated by foreign materials.
5. Do not use retempered or remixed concrete.
6. After concreting is started, it shall be carried on as a continuous operation until placing a section is completed.
7. Thoroughly consolidate concrete by suitable means during placement, and thoroughly work concrete around reinforcement and embedded fixtures, and into corners of forms.

C. Provide a concrete stamp per the detail.

3.7 REINFORCEMENT

- A. Install two (2) number four (4) epoxy coated deformed reinforcement bars over all trenches that fall under any portion of the concrete sidewalk or driveway being constructed. The Engineer will determine the final location of all deformed reinforcement bars. In general, reinforcement bars shall be extended into the adjacent concrete slab that is outside of the trench as follows:
 1. When the adjacent concrete slab is existing, drill 6" into the concrete.
 2. When the adjacent concrete slab is new, overlap the reinforcement bar at least 12 inches into the adjacent concrete slab.
- B. Install two (2) number four (4) epoxy coated deformed reinforcement bars, 12 inches long between new and existing slabs. The bars shall be drilled six inches into the existing concrete slab.

3.8 FINISHING

- A. Strike off concrete to a true and even surface.
- B. Finish float and trowel surface smooth.
- C. Brush or lightly broom surface at right angles to traffic.

3.9 CURING

- A. Start curing activities as soon as free water has disappeared from surface of concrete after placing and finishing.
- B. Apply curing compound to exposed surfaces by spraying a uniform coating to provide a continuous water impermeable surface. Apply in accordance with manufacturer's recommendations to limit loss of water to not more than 0.40 kg/m² in 72 hours.
- C. Maintain all exposed concrete surfaces moist for the first 7 days after placement.
- D. Under hot weather conditions conform to ACI 305.
- E. Under cold weather conditions conform to ACI 306.
- F. During curing period, protect concrete from damaging mechanical disturbances, water flow, loading, shock, and vibration.

3.10 EXISTING CONCRETE FLATWORK

- A. When abutting to existing flatwork, provide the following:
 - 1. Saw cut existing concrete at construction limits.
 - 2. Install expansion joints between existing and new construction.

3.11 CURB RAMPS

- A. Install curb ramps where shown on Drawings or as directed by the Engineer.
- B. Provide detectable warning field run parallel to the direction of travel of the ramp to allow wheel chairs unimpeded access to the road or sidewalk.
- C. Elevation of the warning field is to be equal to the elevation of the curb cut to allow drainage.
 - 1. Equal elevations of the warning field, curb ramp and curb at the curb interface are also required so there is no tripping hazard or impediment to wheel chairs or walkers.
 - 2. Do not recess the warning field.

- D. Install warning fields 0 to 2 inch from back of curb.
 - 1. For installations on a radius, the leading edge of the detectable warning field is to remain within the 0 to 2 inch offset from back of curb.
 - 2. The opposite corner adjacent to the curb will be a varying distance in order to keep the warning fields parallel to the direction of travel.
- E. Slope longitudinal sidewalk to meet the curb ramp with a slope 12 horizontal to 1 vertical or flatter.
- F. Install warning fields per standard detail 8D5, A through E, from the Wisconsin Department of Transportation Facility Development Manual.

3.12 CONCRETE WORK WARRANTY

- A. Work shall be warrantied for a period of one year after substantial completion covering;
 - 1. Transverse cracking.
 - 2. Spalling.
 - 3. Popouts.
 - 4. Other detrimental impacts related to workmanship.
- B. Cost for repairs and traffic control shall be the responsibility of the Contractor.

END OF SECTION

SECTION 32 17 23
PAVEMENT MARKINGS

PART 1 – GENERAL

1.1 SUMMARY

- A. Section Includes
1. Furnishing and applying pavement line markings.

1.2 REFERENCES

- A. State of Wisconsin, Department of Transportation, Standard Specifications for Highway and Structure Construction, current edition, and all supplemental and interim supplemental specifications, as they may pertain, except the items: method of measurement and basis of payment shall not apply.
- B. American Association of State Highway and Transportation Officials (AASHTO):
1. M247 Standard Specification for Glass Beads Used in Pavement Markings

1.3 SUBMITTALS

- A. Submit a certificate of compliance certifying that the epoxy and/or paint supplied under the contract conforms to these specifications.
- B. Submit a certificate of compliance certifying that the beads supplied under the contract conform to these specifications.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Deliver paint and epoxy materials to the job site unopened, in manufacture's containers legibly marked with the contents, color, batch number, date manufactured, and manufacture's name and address. Do not use material more than one year old.

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PART 2 – PRODUCTS

2.1 MATERIALS

A. Conform to WisDOT Standard Specifications for Highway and Structures Construction Sections 646.

B. Glass Beads

1. Furnish glass beads conforming to AASHTO M247, except for gradation conform to the following:

Sieve Size	(%) Percent Passing by Weight	
	For Epoxy	For Paint
No. 20	100	95-100
No. 30	75-95	70-90
No. 40	---	60-80
No. 50	15-35	10-30
No. 80	---	0-3
No. 100	0-5	0-1

2.2 EQUIPMENT

A. All equipment shall conform to WisDOT Standard Specifications for Highway and Structure Construction Section 646.3.2.

PART 3 – EXECUTION

3.1 SURFACE PREPARATION

A. All surface preparation shall conform to WisDOT Standard Specifications for Highway and Structure Construction Section 646.3.1.

3.2 LINE MARKING

A. All line marking shall conform to WisDOT Standard Specifications for Highway and Structure Construction Section 646.3.3.

END OF SECTION

SECTION 32 92 00
TURF AND GRASSES

PART 1 – GENERAL

1.1 SUMMARY

- A. Section Includes
 - 1. Topsoil
 - 2. Salvaged Topsoil
 - 3. Fertilizer
 - 4. Seeding
 - 5. Mulch

1.2 REFERENCES

- A. Association of Official Seed Analysis (AOSA)
 - 1. Rules for testing seed.

1.3 SUBMITTALS

- A. Topsoil
 - 1. Provide topsoil analysis performed in accordance with ASTM D5268 and demonstrating the topsoil meets Natural Resource Conservation Service (NRCS) specified soil types.
 - 2. Submit results of tests for nutrient levels and provide recommendations for fertilizer type and application.
- B. Fertilizer
 - 1. Furnish certification from supplier attesting to:
 - a. Brand name, chemical analysis, and guarantee of analysis.
- C. Seed
 - 1. Furnish certification of conformance with AOSA "Rules for Testing Seed" and attest to:
 - a. Mix, age, weed content, purity, and germination.

D. Mulch Material

1. Furnish sample of mulch material when requested by the Engineer.

E. Erosion Mat

1. Furnish sample of erosion mat material along with a certification of its physical properties.

PART 2 – PRODUCTS

2.1 TOPSOIL

- A. Consists of adequate mineral content to support the growth of the intended vegetation, consists of Soils Class F-1 or F-2 (Soils and Aggregates) as required and shall meet the definition and specification stated in ASTM D5268, and meets one of the following NRCS soil textures:

1. Loam.
2. Sandy Loam.
3. Silt Loam.
4. Silty Clay Loam.
5. Clay Loam.

- B. The topsoil shall consist of adequate mineral content to support the growth of the intended vegetation and shall not contain herbicides which would be detrimental for the intended use.

- C. The topsoil shall have adequate fertility for quick establishment of vegetation.

- D. The pH of the topsoil shall be between 6.0 and 7.0.

- E. Topsoil shall be free from deleterious substances.

- F. Topsoil shall be free from roots, sticks, weeds, brush, stones or other litter and waste products.

- G. Pulverize and screen the topsoil such that 100 percent passes the 1-inch (25 mm) sieve and at least 90 percent passes the No. 10 (2.00 mm).

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2.2 SALVAGED TOPSOIL

- A. Consists of the natural loam, sandy loam, silt loam, silty clay loam or clay loam humus-bearing soils available from the overlying portions of the areas contemplated by the plans.
- B. Salvaged topsoil shall be free from deleterious substances, roots, sticks, weeds, brush, stones or other litter and waste products.
- C. Pulverize and screen the salvaged topsoil such that 100 percent passes the 1-inch (25 mm) sieve and at least 90 percent passes the No. 10 (2.00 mm).

2.3 FERTILIZER

- A. Fertilizer shall meet the recommendations of the supplier.

2.4 SEED

- A. Conform with the requirements of the governing authority for seeding and for restrictions on noxious weed seed.
- B. Seed mixture shall be composed of seeds of the purity, germination, and proportion by weight as follows:

Seed Mix #10 – Heavy Soil			
Percent	Variety	Min. % Purity	Min. % Germination
40	Kentucky Bluegrass	98	85
25	Red Fescue	97	85
20	Perennial Ryegrass	97	90
10	White Clover	95	90
5	Redtop	92	85
100% Total			

Seed Mix #20			
Percent	Variety	Min. % Purity	Min. % Germination
6	Kentucky Bluegrass	98	85
24	Hard Fescue (varieties below)	97	85
40	Turf Type Tall Fescue (varieties below)	98	85
30	Perennial Ryegrass	97	90
100% Total			

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Hard Fescue Varieties: Choose one or both:

- Scaldis Hard Fescue
- SR3100 Hard Fescue

Turf type tall fescue varieties: Choose two of the five:

- Tulsa turf type tall fescue
- Regiment turf type tall fescue
- Crossfire turf type tall fescue
- Shortstop turf type tall fescue

- SR8200 turf type tall fescue

Seed Mix #30

Percent	Variety	Min. % Purity	Min. % Germination
10	Kentucky Bluegrass	98	85
30	Red Fescue	97	85
15	Improved Fine Perennial Ryegrass	97	90
25	Hard Fescue (varieties below)	97	90
10	Salt Grass	98	85
10	Birdsfoot Trefoil	95	80
100% Total			

Seed Mix #40

Percent	Variety	Min. % Purity	Min. % Germination
35	Kentucky Bluegrass	98	85
20	Hard Fescue	97	85
20	Red Fescue	97	85
25	Improved Fine Perennial Ryegrass	96	85
100% Total			

C. Temporary Nurse Crop

1. When required the Contractor shall furnish one of the following seed mixtures:

Species	Min. % Purity	Min. % Germination	Lbs. per Acre
Oats	98	90	80
Rye	98	85	100

2.5 MULCH

- A. Mulch shall consist of straw, hay, marsh hay, or wood chips which are free of noxious weeds and other objectionable foreign matter.
 - 1. If wood chips are used, the mulch area shall be treated with one (1) pound of available nitrogen per 1,000 square feet.
- B. Mulch binder shall conform to one of the following:
 - 1. Emulsified asphalt shall meet the requirements for Type SS-1 AASHTO M140.
 - 2. Terra Tack I, or equal.

PART 3 – EXECUTION

3.1 TOPSOILING (TOPSOIL OR SALVAGED TOPSOIL)

- A. Topsoil all areas which are required to be seeded. Place topsoil to the following depth of 4 inches when settled.
- B. Topsoil placement for seeding lawns:
 - 1. Mechanically level subgrade to allow uniform placement of topsoil.
 - 2. Remove rocks, roots, clods, and other foreign material.
 - 3. Place topsoil to required depth.
 - 4. Mechanically level topsoil.
 - 5. Rake topsoil smooth and remove all lumps.
 - 6. Seed as required.

3.2 SALVAGED TOPSOIL STRIPPING

- A. Remove available topsoil from the site of work in such amounts and to such depths as available or required and the transporting and stockpiling of such topsoil in accordance with the plans, required in the contract or directed by the Engineer.
- B. All areas from which topsoil is procured shall be cleared, if necessary, by means of mowing weeds or other vegetation to a height of approximately six inches and freed from any litter such as brush, rock or foreign material of objectionable size or quantity.
- C. The humus-bearing soil shall then be stripped off to such depth as available, or as necessary to produce sufficient volumes required by the contract, taking all practicable care to avoid incorporation of any of the underlying sterile soil therewith.

- D. The topsoil thus stripped from these areas will be stockpiled and leveled as directed so that it can be reclaimed.
- E. Any appreciable volumes excavated in excess of the amounts required to accomplish these requirements shall be disposed of by the Contractor at the Contractor's cost and expense.

3.3 SEEDING

- A. Selection of seed mixtures, rate of seeding and intended use of the mixtures shall be as follows:

Seed Mixture	Rate of Seeding (lbs. per 1,000 sq. ft.)	Intended Use
No. 10	3-4	Average loam or heavy clay soils
No. 20	5-6	Light, sandy or gravelly soils. All ditches, inslopes.
No. 30	5-6	For medians and on slopes generally within 15 feet of the shoulder where a salt tolerant turf is preferred.
Seed No. 40	Rate of Seeding 3-4	In urban area or other areas where a lawn type turf is desired.

- B. Seeding period shall be as recommended by the seed supplier.
- C. Seeding
 - 1. Utilize a machine or combination of machinery which will produce the following:
 - a. Apply seed uniformly at the rate specified.
 - b. Cover seed with approximately ¼ inch of topsoil.
 - c. Roll lightly.
 - d. Apply seed at right angles to surface drainage.

3.4 MULCHING

- A. Complete mulching as follows:
 - 1. Within 48 hours after seeding has been completed.
 - 2. Place all mulch uniformly to a loose depth of 1 to 1½ inches (2 to 3 tons per acre).
 - 3. Mulching operation shall begin at the top of slopes and proceed downward.
 - 4. Do not mulch under high winds.

- B. Mulching shall be secured using one of the following methods:
 - 1. Method "A":
 - a. Secure mulch with heavy twine or netting.
 - 1) Twine to be fastened with pegs or staples to form a grid of 6- to 10-foot spacing.
 - 2. Method "B":
 - a. Anchor mulch in soil by means of a mulch tiller.
 - b. Mulch shall be impressed in the topsoil to a depth of 1½ to 2½ inches in one pass of the tiller.

3.5 SEQUENCE

- A. Topsoil, seed, and mulch restoration shall be completed prior to final asphaltic concrete pavement placement.

3.6 MAINTENANCE

- A. Maintain all seeded areas until all the following conditions are met.
 - 1. Seeding: Establish a good stand of grass (uniform in density and color) satisfactory to Owner.
 - 2. Capable of resisting erosion.
- B. Watering of turf shall be included in maintenance.

END OF SECTION

SECTION 33 00 01**CONCRETE PIPE - REINFORCED****PART 1 – GENERAL****1.1 SUMMARY****A. Section Includes**

1. Circular storm sewer.
2. Elliptical storm sewer pipe.

1.2 REFERENCES**A. American Association of State Highway and Transportation Officials (AASHTO):**

1. M198 Joints of Circular Concrete Sewer
2. M273 Precast Reinforced Concrete Box Sections for Culverts, Storm Drains and Sewers with less than 2 ft. of Cover Subjected to Highway Loadings

B. American Society for Testing and Materials (ASTM):

1. C76 Standard Specification for Reinforce Concrete Culvert, Storm Drain, and Sewer Pipe.
2. C443 Standard Specification for Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber Gaskets.
3. C444 Standard Specification for Perforated Concrete Pipe
4. C497 Standard Test Methods for Concrete Pipe, Manhole Sections, or Tile
5. C506 Standard Specification for Reinforced Concrete Arch Culvert, Storm Drain, and Sewer Pipe
6. C507 Standard Specification for Reinforced Concrete Elliptical Culvert, Storm Drain, Sewer Pipe
7. C877 Standard Specification for External Sealing Bands for Concrete Pipe, Manholes, and Precast Box Sections
8. C990 Standard Specification for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants
9. C1433 Standard Specification for Precast Reinforced Concrete Box Sections for Culverts, Storm Drains, and Sewers

1.3 SUBMITTALS

- A. Manufacturer's certification that the material delivered has been satisfactorily tested in accordance with ASTM C497.
- B. Provide a detail design of the pipe joints and gasket.
- C. Manufacturer's certification that culvert box sections and culvert box endwalls conform with ASTM 1433.
- D. Provide manufacturer's certification that the material for sealing bands conforms with ASTM C-877.

1.4 QUALITY ASSURANCE

- A. Pipe shall be available to Owner's Representative for inspection.
- B. Material brands and/or pipe shall not be mixed.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Upon delivery insure that the pipe is clearly marked with the following information:
 - 1. Specification designation.
 - 2. Pipe class or strength designation.
 - 3. Date of manufacture.
 - 4. Name or trademark of manufacturer.
 - 5. Plant identification.
 - 6. Letters E or Q indicating elliptical or quadrant reinforcement.
- B. Store material to protect from damage and do not stack in layers.

PART 2 – PRODUCTS

2.1 CIRCULAR PIPE

- A. Conform to ASTM C76 of the classification stated in the drawings.
- B. Provide bell and spigot joints conforming to ASTM C443 with flat rubber gaskets meeting standard gasket requirements.

2.2 ELLIPTICAL PIPE

- A. Conform to ASTM C507 of the classification stated on the drawings.
- B. Provide tongue and groove joints with flexible plastic Type B gaskets conforming to AASHTO M198 and joint sealants conforming to ASTM C990.

PART 3 – EXECUTION

3.1 APPLICATION

- A. Storm Sewer
 - 1. Use circular pipe ASTM C76 "B" or "C" wall unless stated otherwise on drawings.
 - 2. Use elliptical pipe, arch pipe and box sections only where shown on drawings.
 - 3. Use perforated pipe only where shown on drawings.

3.2 FIELD QUALITY CONTROL

- A. Inspect and reject pipe for the following defects:
 - 1. Improper marking.
 - 2. Fractures or cracks passing through wall, except for a single end crack that does not exceed depth of joint.
 - 3. Defects indicating non-compliance with proportioning, mixing and molding of the concrete.
 - 4. Surface defects indicating honeycombed or open texture.
 - 5. Ends are not normal to the wall and center line of the pipe.
 - 6. Damaged or cracked ends.
 - 7. Any continuous crack having a width of 0.01 inch or more and extending for a length of 12 inches or more.

END OF SECTION

SECTION 33 00 02**POLYVINYL CHLORIDE (PVC) PIPE AND FITTINGS****1.1 SUMMARY****A. Section Includes:**

1. PVC pipe for mainline gravity sewer.
2. PVC pipe for sewer services.
3. PVC pipe for water main
4. PVC pipe for pressure sewer (force main)

B. The products described are not installed under this Section.**1.2 REFERENCES****A. American Society for Testing and Materials (ASTM):**

- | | | |
|-----|---------|---|
| 1. | A307-00 | Specification for Carbon Steel Bolts and Studs, 60,000psi Tensile Strength |
| 2. | D1784 | Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride)(CPVC) Compounds |
| 3. | D1785 | Specifications for Poly (Vinyl Chloride) (PVC) Plastic Pipe Schedules 40, 80, and 120 |
| 4. | D2241 | Standard Specification for Poly (Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR Series) |
| 5. | D2466 | Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40 |
| 6. | D2467 | Specification for Socket-Type Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80 |
| 7. | D2564 | Standard Specifications for Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Pipe Systems |
| 8. | D2672 | Standard Specifications for Joints for IPS PVC Pipe Using Solvent Cement |
| 9. | D2855 | Standard Practice for Making Solvent-Cemented Joints with Poly (Vinyl Chloride) (PVC) Pipe and Fittings |
| 10. | D3034 | Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings |
| 11. | D3139 | Specification for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals |
| 12. | D3212 | Specifications for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals |
| 13. | F477 | Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe |
| 14. | F679 | Specification for Poly (Vinyl Chloride) (PVC) Large Diameter Plastic Gravity Sewer Pipe Fittings |

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B. American Water Works Association (AWWA)

1. C104 Cement Mortar Lining for Cast Iron and Ductile Iron Pipe and Fittings for Water
2. C110 Gray Iron and Ductile Iron Fittings, 3-inch through 48-inch for Water and Other Liquids
3. C111 Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Rittings
4. C153 Ductile-Iron Compact Fittings, 3-inch through 16-inch, for Water and Other Liquids
5. C900 Standard for Polyvinyl Chloride (PVC) Pressure Pipe, 4-inch through 12-inch for water
6. C905 Standard for Polyvinyl Chloride (PVC) Water Transmission Pipe, Nominal Diameters 14-inch through 36-inch

1.3 SUBMITTALS

A. Submit the following:

1. Certification of productions date of all materials.
2. Manufacturer's certification that the materials delivered were manufactured, sampled, tested, and inspected in accordance with this specifications and appropriate referenced standards.
3. Product data sheet.
4. Manufacturer's recommendations for assembly.

1.4 QUALITY ASSURANCE

A. Make pipe available to the Engineer's Representative for inspection.

B. Pipe shall be considered defective and will be rejected when:

1. Pitted or cratered.
2. Flaking.
3. Straightness varies more than ½ inch in 10 feet.
4. Any defect which prevents assembly according to manufacturer's recommendations.
5. Not utilized within six months of date of production.
6. Pipe is not properly marked.

C. Material brands and/or pipe classes shall not be mixed.

D. Pipe Marking – pipe and fittings shall be marked as follows:

1. Manufacturer's name, trademark or logo.
2. Nominal size.
3. PVC cell classification.
4. Pipe stiffness designation, dimension ration, or schedule size and pressure class.

5. ASTM or AWWA specification designation.
6. National Sanitation Foundation approval (pipe for potable water).
7. Production date.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Inspect the pipe shipment to identify shifted loads, broken packaging or rough treatment, which could be an indication of damage.
- B. Unload the pipe in a manner which will not put stress on the pipe or strike anything causing damage.
- C. Place and store the pipe package units on level ground stacked no more than 8 feet high. Do not store close to heat sources.
- D. Store gaskets away from excessive exposure to heat, direct sunlight, ozone, oil or grease.
- E. Store Solvent cement in tightly sealed containers away from excessive heat.
- F. Handle pipe in a manner to prevent impact blows, abrasion damage, gouging or cutting.
- G. When handling pipe in cold weather, provide additional care to prevent damage due to impact. Impact strength is reduced in cold weather.

PART 2 – PRODUCTS

2.1 NON-PRESSURE RATED PIPE

- A. Mainline Gravity Sewer and Sewer Services
 1. Pipe fittings and repair couplings shall be manufactured and tested in accordance with the following standards:
 - a. Sizes 8 inch through 15 inch and depths up to 30 feet: ASTM D3034, PSM SDR-35 PVC
 - b. Sizes 18 inch through 48 inch and depths up to 30 feet: ASTM F679, PS46 PVC, T-1 minimum cell classification
 2. Elastomeric Gaskets: Conform with ASTM F477
 3. Elastomeric Joints: Conform with ASTM D3212
 4. Solvent Weld Joints: Not permitted.
 5. Repair couplings for transition between ABS composite pipe and PVC shall be Fernco eccentric couplings with stainless steel shear rings, bands, nuts, and housings.

B. Sewer Services

1. Pipe shall be manufactured and tested in accordance with ASTM D2665.
2. Fittings to conform with ASTM F1866.
3. Pipe for sizes 4-inch and 6-inch: Schedule 40.
4. Solvent Weld Joints: ASTM D2672.
 - a. Solvent Cements: ASTM D2564
 - b. Joints shall be made in accordance with ASTM D2855.

2.2 PRESSURE RATED PIPE

A. Water Main

1. Manufacture and test the pipe and joints in accordance with the following standards:
 - a. Pipe sizes 4-inch through 12-inch: AWWA C900 pressure Class 235, thickness Class DR 18.
 - b. Pipe sizes 14-inch through 36-inch: AWWA C905, pressure Class 235, thickness Class DR 18.
2. Elastomeric gaskets shall be manufactured as defined in ASTM F477.
3. Joints shall conform to ASTM D3139.
4. Fittings:
 - a. Standard ductile iron mechanical or push-on joint conforming to AWWA C110 or compact ductile iron mechanical or push-on joint conforming to AWWA C153.
 - b. Cement mortar lined conforming to AWWA C104.
 - c. Rubber gasket joints conforming to AWWA C111.
 - d. Tee-head bolts and hexagonal nuts shall be 304 stainless steel with anti-seize mechanism.

B. Thrust Restrained Joint PVC pipe for Trenchless Construction of Water Main

1. Manufacture and test the pipe and joints in accordance with the following standards:
 - a. Pipe sizes 4-inch through 12-inch: AWWA C900, pressure Class 150, thickness Class DR 18.
 - b. Pipe sizes 14-inch through 36-inch: AWWA C905, pressure Class 150, thickness Class DR 18.
2. Provide twin elastomeric gaskets manufactured in accordance with ASTM F477.
3. Design joint so be used with non-metallic couplings with high-strength flexible thermoplastic splines inserted into mating precision-machined grooves in the pipe and coupling to provide full 360 degree restraint.
4. Fittings:
 - a. Standard ductile iron mechanical or push-on joint conforming to AWWA C110 or compact ductile iron mechanical or push-on joint conforming to AWWA C153.

- b. Cement mortar lined conforming to AWWA C104.
- c. Rubber gasket joints conforming to AWWA C111.
- d. Bolts and nuts shall be 304 stainless steel with anti-seize mechanism.

END OF SECTION

SECTION 33 00 03**HIGH DENSITY POLYETHYLENE (HDPE) PIPE AND FITTINGS****PART 1 – GENERAL****1.1 SUMMARY****A. Section Includes**

1. Pressure pipe and fittings for water distribution.

1.2 REFERENCES**A. American Water Works Association (AWWA)**

1. C901 Standard for Polyethylene (PE) Pressure Pipe and Tubing, ½ in.(13 mm) Through 3 in. (76 mm) for Water Service
2. C906 Standard for Polyethylene (PE) Pressure Pipe and Fittings, 4 in. (100 mm) Through 63 in. (1,575 mm), for Water Distribution and Transmission

B. American Society for Testing and Materials (ASTM):

A307-00 Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength

1. D638 Standard Test Method for Tensile Properties of Plastics
2. D1238 Standard Test Method for Melt Flow Rates of Thermoplastics by Extrusion Plastometer
3. D1505 Standard Test Method for Density of Plastics by the Density-Gradient Technique
4. D1598 Standard Test Method for Time-to-Failure of Plastic Pipe Under Constant Internal Pressure
5. D1599 Standard Test Method for Resistance to Short-Time Hydraulic Failure Pressure of Plastic Pipe, Tubing and Fittings
6. D2122 Standard Test Method for Determining Dimensions of Thermoplastic Pipe and Fittings
7. D2290 Standard Test Method for Apparent Hoop Tensile Strength of Plastic or Reinforced Plastic Pipe by Split Disk Method
8. D2837 Standard Test Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials
9. D3261 Standard Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Pipe and Tubing
- 10.. D3350 Standard Specification for Polyethylene Plastics Pipe and Fittings Materials

C. National Sanitation Foundation

1. NSF No. 14 Plastics Piping Components and Related Materials

1.3 SUBMITTALS

A. Product Data

1. Provide product data on pipe and fittings including dimensions.

B. Quality Assurance/Control Submittals

1. Certification that the tests required by this specification section were performed and meet the stated minimum requirements.
2. Evidence from the pipe manufacturer that the personnel completing joints is qualified to perform the thermal butt fusion.
3. Manufacturer's instructions and procedures for joining the pipe and pipe fittings.

1.4 QUALITY ASSURANCE

- A. Pipe shall be available to Owner's Representative for inspection.
- B. Material manufacturer, pipe diameters and pressure classes shall not be mixed.
- C. Personnel completing the joints shall be certified by the pipe manufacturer as being qualified to perform the thermal butt fusion.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Upon delivery inspect pipe and fittings for damage, cracks, holes, or foreign inclusions.
- B. Check date of production to verify the pipe will be installed within six (6) months of date of production.
- C. Store pipe and accessories on flat level ground with no rocks or other objects under the pipe.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Pipe Sizes 4-inch and Larger

1. Pipe and fittings shall be high density polyethylene (HDPE) meeting AWWA C906 standards.
 2. Materials used for the manufacture of the HDPE pipe and fittings shall be made from a PE 3608 resin compound meeting the minimum cell classification of PE 345434C in accordance with ASTM D3350 and the hydrostatic design basis of 1,600 psi determined in accordance with ASTM D2837.
 3. Provide ductile iron outside diameter of nominal size shown on the Drawings or stated in the Bid Schedule.
 4. Provide pipe with a dimension ratio (DR) of 9, pressure class 200.
 5. Pipe shall be installed within 6 months of the production date.
- B. Pipe sizes up to 2 inches:
1. Polyethylene (PE) tubing shall conform to the requirements of AWWA C901, PE 3608, DR 9.
- C. Pipe sizes greater than 2 inches up to 3 inches:
1. Polyethylene (PE) pipe shall conform to the requirements of AWWA C901, PE 3608, DR 9.
- D. Fittings
1. Fittings shall meet the requirements of AWWA C901 or AWWA C906 whichever applies.
 2. Fittings for pipe greater than 3 inches diameter shall be HDPE molded fittings and HDPE fabricated fittings of the same pressure rating and outside diameter as the connecting pipe.
 - a. The pipe manufacturer shall mold or fabricate and supply all HDPE molded fittings, fabricated fittings, accessories and adapters required to perform the Work. No Contractor fabricated fittings shall be used.
 - b. Molded fittings shall be manufactured with thermal butt-fused joints meeting the requirements of ASTM D3261.
 - c. Fabricated fittings shall be made by heat fusion joining specially machined shapes cut from pipe, polyethylene sheet stock, or molded fittings.
 3. Fittings for pipe 3 inches diameter or less shall be capable of restraining PE pipe from pullout with the same pressure class as the connecting pipe.
 - a. Provide metal compression connections with ferrule and compression nut.
 - b. Provide a stainless steel insert stiffener to insert inside the tube.
 - c. Insert fittings shall not be used.

2.2 PIPE IDENTIFICATION

- A. Mark the pipe and fittings with the appropriate standard AWWA C901 or AWWA C906 whichever is applicable to affirm the product was manufactured, inspected, sampled, and tested in accordance with the standard.
- B. Pipe and fittings shall be marked with the following at intervals between markings of no greater than 5 feet:
 - 1. Nominal size and OD based on ductile iron OD sizing.
 - 2. Standard material code designation of PE 3408 or PE 3608 (as applicable).
 - 3. Dimension ratio.
 - 4. Pressure class 200
 - 5. AWWA C901 or AWWA C906, whichever is applicable.
 - 6. Manufacturer's production code to include day, month, year produced.

2.3 JOINTS

- A. HDPE Pipe and Pipe Fittings Greater than 3 inches Diameter
 - 1. Pipe and pipe fittings shall be designed for joining by thermal butt fusion.
 - 2. Joining method shall be capable of conveying water at the pressure designated by the pressure class.
 - 3. Joints shall be pipe end to pipe end and pipe end to fitting.
- B. Transition from HDPE to Ductile Iron Pipe or PVC Pipe
 - 1. Provide a molded flange connector adapter with a ductile iron back-up flange for making a flange to flange connection. If the connecting pipe is plain end then use an EBAA Iron Inc. Megaflange 2100 Restrained Flange Adaptor on the connecting pipe.
 - 2. For buried connections use a mechanical joint connection adaptor with a mechanical joint flange backup connecting to a mechanical joint pipe ductile iron pipe and when connecting to a plain end PVC pipe provide an EBAA Iron Inc. use the series 15PF00 for Restraint for C900 PVC Pipe.
 - a. Provide extended T-bolts for the connection.
 - b. Provide stainless steel stiffener inserted in the pipe.
 - 3. From the transition joint pipe restrains shall be provided at all joints within the following distances of the transition joint:
 - a. 6" diameter pipe - 15 linear feet.
 - b. 8" diameter pipe - 19 linear feet.
 - c. 10" diameter pipe - 24 linear feet.

- d. 12" diameter pipe - 28 linear feet.
 - e. 14" diameter pipe - 33 linear feet.
 - f. 16" diameter pipe - 36 linear feet.
- C. Transition from HDPE to stainless steel.
- 1. Provide a molded flange connector adaptor with a stainless steel backup flange for making a flange to flange connection.
 - 2. Bolts and nuts shall be 304 stainless steel with anti-seize mechanism.

2.4 SOURCE QUALITY CONTROL

- A. The following tests shall be performed on the production pipe:
- 1. Measurement of pipe dimensions in accordance with ASTM D2122
 - a. Pipe dimensions shall be within the tolerances stated in AWWA C906 or AWWA C901 whichever is applicable.
 - b. Wall thickness variability in any diametrical cross section of the pipe shall not exceed 12%.
 - c. The outside diameter measured at the cut-end of the pipe length shall not be more than 1.5% smaller than the average outside diameter specified in AWWA C906 or AWWA C901, whichever is applicable, when measured at any point not closer than 12 inches to the squarely cut-end of the pipe length.
 - 2. Thermal stability of a pipe specimen from mid-wall area in accordance with the method described in ASTM D3350. The minimum induction temperature shall be 220°C.
 - 3. Ring-tensile strength test of pipe specimens tested in accordance with ASTM D2290. Tensile strength shall be not less than 2,900 psi.
 - 4. Quick burst test of pipe specimens in accordance with ASTM D1599. The test pressure at failure shall not be less than that which results from the minimum hoop stress value of 2,900 psi.
 - 5. Elongation at break test of five pipe specimens cut equally spaced around the circumference of the pipe in the longitudinal direction tested in accordance with ASTM D638 using a cross-head separation of 2 inches per minute. The elongation at break for each test specimen shall not exceed 400%.
 - 6. Five-second pressure test of a section of pipe tested in accordance with ASTM D1598. The pipe shall not burst, crack, spit, or otherwise fail a test pressure four times the pipe pressure class applied for five seconds. This test is also required for fittings.

7. Melt index of pipe specimens tested in accordance with ASTM D1238. The resultant index shall be less than 0.15.
 8. Density of pipe specimens tested in accordance with ASTM D2839. The result shall be minimum 0.955 grams per cubic centimeter.
 9. Bend-back test in accordance with AWWA C901 or AWWA C906 whichever is applicable. Any indication of cracking or crazing shall reject the pipe.
- B. Test the PE compounds by an accredited testing agency in accordance with the applicable requirements of NSF No. 14 to demonstrate the materials are suitable for use with potable water.

PART 3 – EXECUTION

3.1 POLYETHYLENE PIPE INSTALLATION

- A. In addition to the applicable sections for installing piping, conform to the following:
1. Thermal butt fuse all joints as per ASTM D2657.
 2. Utilize certified personnel for jointing operation.

END OF SECTION

SECTION 33 00 04**CORRUGATED METAL CULVERT PIPE (CMCP) AND FITTINGS****PART 1 – GENERAL****1.1 SUMMARY**

- A. Section Includes
 - 1. Circular corrugated steel pipe.
 - 2. Flared end sections.

1.2 REFERENCES

- A. American Association of State Highway and Transportation Officials (AASHTO)
 - 1. M36 Standard Specification for Corrugated Steel Pipe, Metallic-Coated, for Sewers and Drains
 - 2. M190 Bituminous-Coated Corrugated Metal Culvert Pipe and Pipe Arches
- B. American Society for Testing and Materials (ASTM):
 - 1. A760 Standard Specification for Corrugated Steel Pipe, Metallic-Coated, for Sewers and Drains

1.3 SUBMITTALS

- A. Shop Drawings
 - 1. Submit shop drawings for sectional plate pipe, sectional plate arches, or sectional plate pipe arches.
 - 2. Include shop detail, erection, and other drawings showing dimensions, sizes of material, details, and other information necessary for the complete fabrication and erection of the metal work
- B. Quality Assurance/Control Submittals
 - 1. Provide manufacturer's certification.

1.4 QUALITY ASSURANCE

- A. Mark each piece of pipe as follows:
 - 1. Manufacturer's name or trademark.
 - 2. Date of manufacture.

3. Pipe size.

- B. Provide manufacturer's certification that samples representing each lot have been tested and inspected in accordance with ASTM A760/AASHTO M36 have been found to meet the requirements for material required per this Specification Section.

1.5 DELIVERY, STORAGE AND HANDLING

A. Shipping, Handling and Unloading

1. Package pipe and fittings to prevent damage during shipping.
2. Fittings shall be on a pallet.
3. Use lifts for loading or unloading to avoid shock.
4. Do not drop materials.
5. Do not drag pipe or strike with hard objects which could scratch coatings.

B. Acceptance at the Site.

1. Inspect pipe and pipe fittings when delivered to the site and prior to installation.
2. Reject pipe for any of the following:
 - a. Uneven laps.
 - b. Variation from a straight centerline of more than ½ inch.
 - c. Ragged or diagonal sheared edges.
 - d. Loose bolts or rivets.
 - e. Fasteners which are unevenly lined.
 - f. Poorly formed seams.
 - g. Illegible brand marking.
 - h. Poorly formed seams.
 - i. Dents or bends in the metal.
 - j. Elliptical shape on round pipe.
 - 1) The average inside diameter of the pipe shall not vary more than ½ inch or 1 percent, whichever is greater.
 - 2) Measure on the inside crest of the corrugations.
 - 3) Clearly mark rejected pipe as "Rejected" with OSHA yellow paint.

C. Storage and Protection

1. Provide safe storage for material.
2. Store materials to keep free from dirt and foreign matter.
3. Store fittings in a manner that will allow them to drain and protect them from freezing.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Pipe Material

1. Corrugated steel pipe material, manufactured and fabricated in accordance with ASTM A760/AASHTO M36.
2. Metallic Coating – Zinc (galvanized).
3. Circular pipe shall be Type I.
4. Corrugation size 2 2/3" x 1/2" for pipe sizes 12" diameter through 84" diameter.
5. Material sheet thickness:
 - a. 6" diameter - 0.052 inches
 - b. 8" diameter to 21" diameter – 0.064 inches
 - c. 24" diameter to 30" diameter – 0.079 inches
 - d. 36" diameter to 54" diameter – 0.109 inches
 - e. 60" diameter to 72" diameter – 0.138 inches
 - f. 78" diameter to 96" diameter – 0.168 inches
6. Flared end sections shall meet the same requirements as the connecting pipe.

B. Gaskets

1. Band of expanded rubber in accordance with ASTM A760/AASHTO M36.

C. Band Connectors

1. Corrugations to match the pipe sections in accordance with ASTM A760/AASHTO M36.

D. Coating

1. Provide Type A, fully bituminous-coated pipe in accordance with AASHTO Standard M190.

PART 3 – EXECUTION (Not Used)

END OF SECTION

SECTION 33 05 05**UTILITY PIPING – GENERAL PROVISIONS****PART 1 – GENERAL****1.1 SUMMARY****A. Section Includes**

1. Safety and related matters.
2. Interference with the work of others
3. Existing utilities and structures.
4. Conflict with utilities.
5. Work on streets, highways, railroad right-of-way, and work in waterways and wetlands.
6. Easements.
7. Protection of property markers.
8. Cold weather.
9. Cleaning of the work.

PART 2 – PRODUCTS (Not Used)**PART 3 – EXECUTION****3.1 SAFETY AND RELATED MATTERS****A. Comply with all federal, state, and local rules and regulations concerning:**

1. Construction safety including confined entry.
2. Noise control.
3. Dust and smoke control.
4. Stormwater.

B. Access to Services

1. Insure free access to all fire hydrants, valve boxes, manholes, curb stops, fire alarms, police call boxes, etc.

C. Protection of Work, Public, and Property

1. Provide safe passage for local vehicular and pedestrian traffic.
2. Provide vehicular and pedestrian access to properties abutting street where utilities are being constructed.

3. Provide all necessary barricades, warning lights, and signs, signals, flagmen, etc. in accordance with federal, state, and local regulations.
- D. Organize and perform construction activities to minimize the creation of airborne dust and the tracking of mud and dirt into public streets.
 1. If dust is generated, implement control measures such as:
 - a. Street sweeping and cleaning.
 - b. Water sprinkling or application of chemical dust suppressant.
 - c. Cover dusty materials in piles or in transit.
 - d. Protect buildings that may be adversely affected.
 - e. Protect new and existing machinery, motors, instrument panels or similar equipment with suitable dust screens.
 - 1) Provide proper ventilation with dust screens.

3.2 INTERFERENCE WITH THE WORK OF OTHERS

- A. Arrange work in a manner as to not interfere with any other work.
 1. Coordinate work with other contracts through Owner's Representative.

3.3 EXISTING UTILITIES AND STRUCTURES

- A. The existing utilities and structures as shown on the drawings may not be all inclusive.
- B. The locations of existing utilities and structures are shown on the drawings for information to the Contractor, but should not be construed as a representative of the exact location.
- C. Maintain or provide:
 1. Service of water, sewers, gas, culverts, drains, electricity, or other utilities encountered.
 2. Temporary connections and outlets for all private and public utilities that are interrupting construction.
 3. Disposal for all drainage and sewage resulting from relocations and/or interruptions in accordance with regulations and permits of the controlling governmental agency(s).
- D. Correct any damage to below or above ground utilities and structures encountered during construction.

3.4 CONFLICT OF UTILITIES

A. Separation of Water Mains and Sewers

1. The following separations shall be minimum:
 - a. Parallel.
 - 1) 8 feet, measured center to center.
 - b. Vertical (when pipelines cross or when horizontal clearance is impossible).
 - 1) Water Main Below a Sewer: 18 inches clear. (Both pipes must be constructed of water main quality pipe and joints for ten feet either side of the crossing).
 - 2) Water Main Above a Sewer: 6 inches clear.
2. When crossing a sewer, center a full length of water main or sewer to position joints as far as possible from sewer.

B. Utility Location

1. Coordinate relocation of any utilities with the work schedule.

C. Crossing Existing Water Services

1. If water services are crossed during utility construction, and located above the utility, the Engineer may direct the contractor to insulate the water service.
2. If the depth of cover over the water service is less than six feet, insulate as required by the Engineer.

3.5 WORK ON STREET, HIGHWAY, RAILROAD RIGHT-OF-WAY AND WORK IN WATERWAYS AND WETLANDS

- A. Work on street, highway, railroad right-of-ways, or in waterways and wetlands are subject to provisions of special permits required and issued by governmental agencies having jurisdiction in addition to requirements of specifications for this work.
- B. Do not commence Work prior to receiving required permits.
- C. Provide special bonds when required by permit.
- D. Notify controlling authority prior to beginning and after completing any construction in right-of-ways or streams.
- E. Bear all expenses related to permit compliance.

3.6 EASEMENTS

- A. Owner will provide all easements.
- B. Work on the easements shall be in strict compliance with the terms of the easements agreements.
- C. Owner, easement grantee, and Contractor shall be in full agreement on the method of execution prior to beginning work.
 - 1. Only structures, trees, shrubs, and other obstructions are to be removed as mutually agreed.
 - 2. Restoration shall be equal to original condition or the conditions of the agreement.

3.7 PROTECTION OF ESTABLISHED PROPERTY MARKERS

- A. Protect all property markers (iron pipe, concrete, or wood posts, etc.) from movement from original position.
- B. Pay costs of replacement of property markers moved during construction.
- C. Re-establishment of removed property lot pins will be done by a Registered Land Surveyor in accordance with pertinent sections of the State of Wisconsin Statutes. The City of De Pere will have the right of approval of the Registered Land Surveyor. Certification of proper re-establishment of lot pins will be provided by the Contractor.

3.8 COLD WEATHER

- A. The Engineer reserves the right to order pipe laying discontinued whenever, in the Engineer's opinion, there is a danger of the quality of work being impaired because of cold weather.
- B. The Contractor shall be responsible for heating the pipe and jointing materials so as to prevent freezing of joints.
- C. No pipe shall be laid on frozen ground.
- D. When pipes are to be laid with rubber gaskets in cold weather, the gasket material shall be sufficiently warmed so as to facilitate making a proper joint.

- E. When pipes are to be laid with a solvent cemented joint in cold weather, care shall be taken to ensure the removal of all ice and snow from the jointed area prior to the application of the solvent cement.

3.9 CLEANING OF WORK

A. Pipelines

1. Interiors of utility pipelines (including existing) affected by construction procedures shall be free of all extraneous materials.
2. Pipelines shall be left clean at the completion of work.

B. Final Cleanup and Inspection

1. Remove the following:
 - a. Temporary offices and storage structures.
 - b. Temporary fencing and roads.
 - c. Surplus material and rubbish.
 - d. Material (liquid or solid) resulting from cleaning operations.
2. The Engineer and Owner may make a final inspection of the work during the progress of the final cleaning and repairing. Any portion of the work accepted by the Owner shall be kept clean by the Contractor until final acceptance of the entire project.
3. When the Contractor has completed the final cleaning operation, he shall notify the Engineer in writing that he is ready for final inspection.
4. After written notification to the Contractor, the Owner may elect to remove from the work site and/or adjacent properties, all rubbish, surplus or waste materials which the Contractor has neglected or refused to remove, and deduct the costs of removal from any monies due the Contractor.
5. During construction, the Contractor shall clean up as the Work proceeds. The premises shall be kept free of accumulations of waste materials and earth, rubbish and other debris resulting from the work. If in the judgment of the Engineer, the Contractor fails to keep the sites clean as described herein above, the Engineer will recommend to the Owner withholding all progress payments until the sites have been cleaned up to the Engineer's satisfaction.
6. All debris and waste materials and salvaged materials, unless required by the Specifications to be reused or delivered to the Owner, shall become the property of the Contractor and shall be removed by the Contractor from the construction sites.
7. Where truck crossings occur over sidewalks, they shall be kept free from all spilled earth and grading materials and shall at all times be maintained in a passable condition for foot traffic.

8. Generally, the transportation of materials to and from the sites shall be over regular streets. When the Contractor's operations or that of its shippers, haulers, or subcontractors are such that dirt, mud, or debris is spilled or otherwise deposited on streets, driveways, sidewalks, or other thoroughfares, the Contractor shall clean up the large chunks before the close of every day's operations or before it is broken up or becomes impacted on the surface. In case of dispute or Contractor's failure to perform this cleanup work, the Owner may clean the streets and walks, remove the rubbish, etc., and will charge the cost to the Contractor, by withholding monies due to cover all charged work.
9. After completion of work in any of the site work areas, the Contractor will remove all waste materials, rubbish and debris from and about the premises as well as all tools and surplus materials, and will leave the sites clean and ready for occupancy by the Owner. The Contractor will restore to their original condition any roads, utilities, walks, buildings, etc. disturbed or damaged by the Contractor's operations.
10. Open burning of debris will not be permitted unless specifically authorized in writing by the Owner, and then only following state, municipal or other local codes, ordinances, rules or regulations.
11. Payment for cleaning up and complying with all items in this Section shall be made incidental to construction.

END OF SECTION

SECTION 33 05 23**TRENCHLESS EXCAVATION CONSTRUCTION****PART 1 – GENERAL****1.1 SUMMARY****A. Section Includes**

1. Auger horizontal earth boring (boring and jacking).
2. Horizontal directional drilling.
3. Compaction methods.

1.2 REFERENCES**A. American Society for Testing and Materials (ASTM):**

1. A139 Standard Specification for Electric-Fusion (Arc) – Welded Steel Pipe (NPS 4 and over)

1.3 SUBMITTALS

- A. Certificate of compliance for the steel casing pipe.
- B. Horizontal and vertical location of the installed pipe during horizontal directional drilling.

PART 2 – PRODUCTS**2.1 MATERIALS****A. Steel Casing Pipe**

1. Meets the requirements of ASTM A139, Grade B.
2. No protective coating.
3. No hydrostatic test required.
4. Pipe shall be new and unused.
5. Pipe shall be straight and round.
6. Beveled ends for butt welding.
7. Straight seam or seamless pipe.
8. Minimum yield strength of 35,000 psi.
9. Pipe wall thickness to be determined by the Contractor designed for loads due to jacking and E80 loadings with the following minimums:

Nominal Pipe Diameter (inches)	Nominal Wall Thickness (inches)
Under 14	0.250
14 and 16	0.281
18	0.312
20	0.344
24	0.406
26	0.438
30	0.469
32	0.500
36	0.532
42	0.563

PART 3 – EXECUTION

3.1 INSTALLATION

A. Auger Horizontal Earth Boring (Boring and Jacking)

1. This method is to be used for the installation of a steel casing pipe under roads, railroads, streams and other obstacles as shown on the drawings.
2. Provide boring and receiving pits meeting the requirements of section "Trenching, Backfilling and Compacting."
3. The grades and slopes of the casing shall conform to the drawings.
 - a. Use a grade control head where grade is critical for sanitary and storm sewer.
 - b. Provide a water level or other device to measure the grade of the pipe casing while it is being installed.
 - c. Determine the grade of each end of the installed casing prior to removal of equipment.
4. Take care to ensure that developed thrust pressures do not disturb existing utilities in or around the bore pit area.
5. In soft unstable soil use an auger of slightly smaller diameter than the inside diameter of the casing so as not to create a void between the casing and the soil.
6. Pressure grout the void between the casing and the bore hole, if the outside diameter of the casing is over-excavated.
7. The casing pipe diameter shall be a minimum of 6" larger than the bell diameter of the carrier pipe.
8. Install casing horizontally and vertically to an accuracy of +0.5% of the length of the casing. Use an oversized casing where line and grade of the carrier pipe cannot be provided within this accuracy.

9. Provide continuous circumferential butt welds for a watertight straight and true casing pipe.
10. Support and brace the carrier pipe to prevent shifting.
11. Provide flowable fill between casing and carrier pipe conforming to the requirements for pipe abandonment under Section 31 05 10.

A. Horizontal Directional Drilling

1. This method is to be used for installation of the carrier pipe under roads, railroads, streams and other obstacles as shown on the drawings.
2. The drilling process shall be by mechanical cutting using a drill bit (cutting head) capable of drilling in rock.
3. A bentonite slurry shall be used to transport drill cuttings to the surface, stabilize the hole against collapse, lubricate and cool the cutting head.
4. The cutting head shall provide directional steering and monitoring of the actual position for a pipeline that is not straight.
5. During drilling of the pilot hole, continuously monitor the location of the cutting head and record locations at a maximum of 20 foot intervals to be used for as-built information.
6. The pilot hole exit shall provide an accuracy of 5 feet left or right, 1 foot up or down, and -5 feet to +15 feet in length from that shown on the drawings.
7. Provide tracer wire on carrier pipe.
8. Fill the annular space between the borehole and the carrier pipe with bentonite slurry.
9. Bentonite Slurry and Cuttings:
 - a. Collect slurry and cuttings by a mobile spoils recovery equipment and removed from the site.
 - b. Dispose of spoils at an acceptable site.
 - c. Do not dispose of drill cuttings (spoils) into sanitary, storm or other public drainage system.
 - d. Do not permit spoils to flow over land and contain all materials.
 - e. Upon completion of the boring and pipe installation, remove all spoils from the starting and termination pits. Restore pits to their original condition.
 - f. Cover stockpiled material when not being used to prevent runoff.
 - g. The pilot hole, preream, and pullback operations shall be in one continuous operation.

A. Compaction Methods

1. Restricted to use for lines smaller than 4" diameter in compressible soil conditions and less than 50 feet in length.

2. Do not use the backhoe bucket to push the tool or pipe.
3. Push rod, rotary or percussion methods are acceptable when the grade and slope is not critical.
4. Install the pipe horizontally and vertically to an accuracy of +1% of the length of the boring.
5. Provide boring and receiving pits meeting the requirements of section "Trenching, Backfilling and Compacting."
6. Where appropriate soil conditions permit use of compaction methods for installation of sewer laterals (4" and 6") to required grades, the following applies:
 - a. May use rotary method with track-type boring unit utilizing a rigid solid drill stem.
 - b. May use percussion method utilizing a launching platform and sighting device to obtain proper alignment.
 - c. Grade shall be maintained between 1.04% and 2.08%.
 - d. If grades cannot be maintained using these methods, then install using horizontal directional drilling.

END OF SECTION

SECTION 33 11 00 WATER DISTRIBUTION SYSTEMS

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes

1. Underground installation of pressure pipe, fittings and appurtenances.
2. Fire Hydrants
3. Valves
4. Polyethylene encasement for ductile iron pipe and fittings
5. Tracer wire
6. Insulation for pipe frost shield
7. Disinfection of water mains.

1.2 REFERENCES

A. American Water Works Association (AWWA):

1. C105 Polyethylene Encasement of Ductile-Iron Pipe Systems
2. C219 Bolted, Sleeve-Type Couplings for Plain-End Pipe
3. C502 Dry-Barrel Fire Hydrants
4. C504 Rubber-Seated Butterfly Valves
5. C512 Air-Release, Air/Vacuum and Combination Air Valves for Waterworks Service
6. C515 Reduced Wall, Resilient Seated Gate Valves for Water Supply Services
7. C550 Protective Epoxy Interior Coatings for Valves and Hydrants
8. C600 Installation of Ductile-Iron Water Mains and Their Appurtenances
9. C605 Underground Installation of Polyvinyl Chloride (PVC) Pressure Pipe and Fittings for Water
10. C651 Disinfecting Water Mains
11. C800 Underground Service Line Valves and Fittings
12. C901 Polyethylene (PE) Pressure Pipe and Tubing, ½ Inch through 3 Inch for Water Service
13. C906 Polyethylene (PE) Pressure Pipe and Fittings, 4 in. through 63 in. for Distribution and Transmission

- B. American Society for Testing and Materials (ASTM):
1. A48 Standard Specification for Grey Iron Castings
 2. A307-00 Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength.
 3. A575 Standard Specification for Steel Bars, Carbon, Merchant Quality, M-Grades
 4. B62 Standard Specification for Composition Bronze or Ounce Metal Castings
 5. B88 Standard Specification for Seamless Copper Water Tube
 6. B584 Standard Specification for Copper Alloy Sand Castings for General Applications
 7. C478 Standard Specification for Precast Reinforced Concrete Manhole Sections
 8. C578 Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation
 9. C923 Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes and Laterals
 10. C990 Standard Specification for Joints for Concrete Pipe, Manholes and Precast Box Sections Using Preformed Flexible Joint Sealants
 11. D2774 Standard Practice for Underground Installation of Thermoplastic Pressure Piping
 12. F1668 Standard Guide for Construction Procedures for Buried Plastic Pipe
- C. American Association of State Highway and Transportation Officials (AASHTO) :
1. H-20 Standard Specification for Highway Bridges
- D. Federal Specifications (FS):
1. SS-C-153C Cement, Bituminous, Plastic

1.3 SUBMITTALS

- A. A manufacturer's certification that the products were manufactured in accordance with the designated reference standards with these specifications and including test results and date of tests.
- B. Manufacturer's calculations and recommendations for joint restraint.
- C. Pipe location records.

PART 2 - PRODUCT

2.1 NO LEAD BRASS FITTINGS AND VALVES – GENERAL

- A. All fittings and valves shall be manufactured in accordance with AWWA Standard C-800, latest revision, and as further specified in these technical specifications.
 - 1. Exception: Any brass part of the fitting or valve in contact with potable water shall be made of a “No-Lead Brass”, defined for this specification as UNS Copper Alloy No. C89520 or C89833 in accordance with the chemical and mechanical requirements of ASTM B584 and AWWA C-800. This “No-Lead Brass” alloy shall not contain more than nine one hundredths of one percent (0.09% or less) total lead content by weight.
 - 2. Any brass part of the fitting or valve not in contact with potable water shall be made of 85-5-5 brass as defined for this specification as UNS Copper Alloy C83600 per ASTM B62, ASTM B584 and AWWA C-800.
- B. All brass fittings and valves shall be certified by an ANSI accredited test lab per NSF/ANSI standard 61, Drinking Water Components – Health Effects, Section 8 or NSF/ANSI Standards 372, Drinking Water System Components – Lead Content. Proof of certification is required.
- C. Brass fittings and valves shall comply with the United States of America Safe Drinking Water Act, and the U.S. Environmental Protection Agency.
- D. All brass fittings and valves shall have the manufacturer’s name or trademark permanently stamped or cast on it. Another marking identifying the “no lead” brass alloy, e.g., ‘NL’, shall be cast or permanently stamped on the fitting or valve.

2.2 FIRE HYDRANTS

- A. Conform to requirements of AWWA C502.
- B. Manufactured within one year of installation.
- C. Compression type shutoff with bronze by bronze seating design opening against the pressure and closing with the pressure.
- D. Main Valve Opening: 5 ¼”
- E. Minimum Barrel Diameter: 7”
- F. Provide traffic model with upper and lower barrels joined at the ground line by a separate and breakable and replaceable flange joint and providing 360 degrees rotation of upper barrel.

- G. Hydrant shall be designed to accept barrel extensions.
- H. Hydrant bolts and nuts shall be 304 stainless steel with anti-seize mechanism.
- I. Nozzles
 - 1. Provide three-way design with one 4 ½” NST pumper nozzle and two 2 ½” NST hose nozzles.
 - 2. Provide nozzle caps with nut the same size as the operating nut and chain.
- J. Bury depth shall be 6.5 feet measured to the nearest ½ foot from the bottom of the connecting pipe to the ground line of the hydrant.
- K. Inlet connection shall be 6 inch mechanical joint with 304 stainless steel bolts and nuts with anti-seize mechanism.
- L. The hydrant top section shall be painted the color yellow, excluding the caps.
- M. The caps on the hydrant shall be painted based on available fire flows as determined by the Engineer and shown on the plans.
 - 1. Class AA – Safety Blue – Rated capacity of 1500 gpm or greater
 - 2. Class A – Safety Green – Rated capacity of 1000-1499 gpm
 - 3. Class B – Safety Orange – Rated capacity of 500-999 gpm
 - 4. Class C – Safety Red – Rated capacity of less than 500 gpm
- N. Hydrant to have a 16” break-off section.
- O. 1 ½” pentagon operating nut to open left.
- P. Hydrant markers will consist of a five (5) feet long 3/8 inch diameter fiberglass shaft with chrome plated carbon steel spring mount for flexibility. The shaft will have alternating six (6) inch wide red and white reflective striping.
- Q. Acceptable Manufacturers:
 - 1. Mueller A-423
 - 2. Waterous WB67250

2.3 VALVES

- A. General
 - 1. Valves shall be for buried service.
 - 2. Valve ends shall be push-on or mechanical joint for buried service.
 - 3. Operating stem shall turn counterclockwise to open.
 - 4. Shaft or stem shall be sealed using O-ring seals.
 - 5. Manufactured within one year of installation.

B. Butterfly Valves

1. Conform to requirements of AWWA C504 mechanical joint end valves, Class 150B
2. Used where water main is larger than 12 inches diameter.
3. Equip with traveling nut or worm gear operators.
4. Valve Body: Cast iron ASTM A126, Class B.
6. Valve Shaft: Stainless steel 304.
7. Valve Disc: Ductile iron ASTM A536 with 304 stainless steel disc edge.
8. Shaft seals shall be the self-adjusting split-V type or standard O-ring seals.
9. Operators:
 - a. The operator shall be furnished with a standard AWWA 2-inch square nut for manual wrench operation as specified in Section 19 of AWWA C-500 which shall be positively secured to the operator input shaft.
 - b. Valve to open counter clockwise.
 - c. A self-draining, self-aligning base 4-3/4 to 5 inch diameter concentric with the input shaft, shall be provided to accept a circular valve box base.
 - d. The valve shall seat closed at an angle of 90 degrees from full open.
 - e. The operator shall be self-locking, and the disc shall not creep or flutter under service conditions.
 - f. The operator shall be furnished with a permanent factory set stop at each of its travel.
 - g. Maximum input torque required to develop the rated output torque shall not exceed 150 foot-pounds for any size valve.
 - h. The operator shall be designed for the output torque shown in Table 1 of AWWA C504.
 - i. The operator case shall be completely watertight, sealed by means of approved gaskets, gasket compounds, O-rings or threaded plugs.
 - j. Operators shall be filled with suitable oil lubricant or thoroughly coated with an approved grease at the factory. If the operator lubricant is oil, suitable fill and drain plugs shall be provided.
10. Bolts and nuts for end connections shall be 304 stainless steel with anti-seize mechanism.
11. Acceptable Manufacturers: See special provisions.

C. Resilient Wedge (Gate) Valves

1. Conform to requirement of AWWA C515 mechanical joint connectors with 304 stainless steel bolts with anti-seize mechanism or push-on connectors.
2. Use where water main is 12 inches in diameter or smaller.
3. Stem shall be non-rising.
4. Bolts and nuts on the valve shall be 304 stainless steel.
5. Bolts and nuts for end connections shall be 304 stainless steel bolts with anti-seize mechanism.
6. Tapping valves shall have one end flanged with alignment lip to attach tapping sleeve, and the other end with a special flange to attach the drilling machine and adaptor.

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7. Test Plugs:
 - a. The valve bonnet shall be provided with a ½ or 3/8 inch diameter threaded, solid, malleable or cast iron test plug.
8. Stem Seal:
 - a. The valve stem seal shall be O-rings. The compound shall be of Buna N or NBR rubber and have a durometer hardness of 70 +/- 5 when tested in accordance with ASTM Designation D-2240.
9. Operating Nut:
 - a. The valve shall be equipped with a standard 2 inch square operating nut with cast-on directional arrow.
 - b. Valve to open counter clockwise.
10. Valves will be fitted with a three (3) foot long diversified fabricators extension stem or equal.
11. Acceptable Manufacturers:
 - a. Mueller
 - b. Kennedy
 - c. Waterous
 - d. Clow

D. Valve Boxes

1. Cast iron, three-piece screw type, 5 ¼ inch shaft, round or oval base sized for valve.
2. Threads shall be cast into top and bottom sections.
3. Cover shall be anti-rattle type mark with the word "water" on top.
4. Acceptable Manufacturers:
 - a. Tyler 6860DD
 - b. Bingham Taylor

2.4 POLYETHYLENE ENCASEMENT FOR DUCTILE IRON PIPE AND FITTINGS

A. Conform to requirements of AWWA C105.

B. Type: I

C. Class: "A" (natural color) or "C" (black).

D. Grade: "E-1"

E. Thickness: 8 mils

2.5 WATER MAIN

- A. Pipe material and size shall be stated in the Proposal and shown in the Drawings.
- B. If the material is not stated, water main is to be Polyvinyl Chloride Pipe (PVC).

2.6 WATER SERVICES

A. Pipe and Tubing

1. Pipe and/or tubing material and size shall be as stated in the proposal and shown on the drawings.
2. Copper tubing shall conform to the requirements of ASTM B88, Type K for sizes up to 2 inches diameter.
3. Polyethylene (PE) tubing shall be blue and conform to the requirements of AWWA C901, PE 3608, DR 9 for sizes up to 2 inches.
4. Polyethylene (PE) pipe shall be blue and conform to the requirements of AWWA C901, PE 3608, DR 11, for sizes greater than 2 inches up to 3 inches.
5. Polyvinyl Chloride Pipe (PVC) shall conform to the requirements of AWWA C900 for sizes 4 inches or greater.

B. Corporation Stops/Valves

1. Conform to the requirements of AWWA C800.
2. Ball type valve with double O-ring seals.
3. Outlet shall include a copper flare connection for copper tubing or compression connection with stiffeners for polyethylene tubing.
4. The pipe stiffener length for polyethylene tubing shall match the length of the fitting at the location of the compression nut.
5. Acceptable Manufacturers:
 - a. Ford F1000
 - b. McDonald 4701Q

C. Curb Stops/Valves

1. Conform to the requirements of AWWA C800.
2. Ball type valve with double O-ring seals.
3. Inlet and outlet shall include a copper flare connection for copper tubing or compression connection with stiffeners for polyethylene tubing.
4. The pipe stiffener length for polyethylene tubing shall match the length of the fitting at the location of the compression nut.
5. Curb Stop to Curb Box Rod Connection
 - a. Material: Stainless steel 304
 - b. Bolt Size: $\frac{1}{4}$ - 20 x 1 $\frac{1}{4}$
 - c. Nylon Stainless Steel Locker
6. Acceptable Manufacturers:
 - a. Ford B44-444M
 - b. McDonald 6104Q
 - c. Mueller B25155

D. Tapping or Service Saddles

1. Stainless steel double strap designed for ductile iron pipe.

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2. Full circumference wide band stainless steel double bolt designed for PVC pipe.
3. Required for PVC service taps and taps over 1" in diameter for ductile iron pipe.
4. All taps shall be made with a Rockwell 372, Romac, or equal service saddle.

E. Curb Boxes

1. Minneapolis pattern.
2. Cast iron lid with a 1 ¼" threaded brass pentagon plug and the work "Water" on top in raised letters.
3. Upper section shall be a minimum 1 ¼" I.D. steel pipe.
4. Base section shall be a minimum 1 ¼" I.D. cast iron.
5. The casting shall be thoroughly coated with bituminous pitch varnish or pipe dip.
6. Provide a McDonald 566055 48 inch stationary Type 304 Stainless Steel curb box rod.
7. Length shall be 7 foot bury.
8. Acceptable Manufacturers:
 - a. Mueller H-10300
 - b. Ford EM2-60-57
 - c. McDonald 5614

2.7 TRACER WIRE

A. Wire for Water Main Construction.

1. #10 AWG solid, 21% conductivity annealed copper-clad high carbon steel extra high strength wire.
2. 1150 lbs. average tensile break load.
3. 30 mil high molecular weight high density blue polyethylene jacket, 30 volt rating.

2.8 TRACER WIRE ACCESS BOX

A. Provide access box device in accordance with the following:

1. The covered access device (tracer wire access box) shall have:
 - a. Two pieces to allow for telescoping action adjustment and for frost control.
 - b. Top piece to extend below ground a minimum of 12 inches.
 - c. 2 ½ inch minimum diameter extension from the top piece of the access box to the top of the sewer pipe.
 - d. Lid to be heavy cast iron manufactured in accordance with ASTM A48 Class 25. The top of the lid to be permanently engraved with "WATER" by the manufacturer. The lid is to be furnished with a means of locking the lid such as a

standard lockable pentagonal bolt head. Lid to be furnished with connection holes where the tracer wire is to be connected with stainless steel terminal bolts.

2. Acceptable access devices are:
 - a. The Valvco Water Tracer Wire Access Box manufactured by C. P. Test Services-Valvco, Inc, reference:
<http://www.fischer-harris.com/ValvcoTracerWireAccessBox.htm>

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- b. The Cathodic Test Box P200 series manufactured by Bingham & Taylor, reference: <http://www.binghamandtaylor.com/cathodic.htm>
- 3. In lieu of the above access devices furnish materials required as shown on the drawing detail for Tracer Wire Access.
- 4. In lieu of the above devices, a modified water valve box, approved by the Engineer will be considered, meeting the following requirements:
 - a. Cast iron, two-piece screw type, 5 ¼ inch shaft, with extension to top of sewer pipe.
 - b. Threads shall be cast into top section.
 - c. Cover shall be anti-rattle type mark with the word "WATER" on top.

2.9 COUPLINGS AND ADAPTERS

A. Flanged Coupling Adapters

- 1. Used for connecting plain end pipe to flanged equipment and fittings.
- 2. Ductile iron body and follower completely epoxy coated.
- 3. Plain rubber gasket.
- 4. Provide with anchor studs.

B. Bolted Couplings

- 1. Used for connecting plain end pipe to plain end pipe.
- 2. Steel sleeve completely epoxy coated.
- 3. Ductile iron follower.
- 4. Plain rubber gaskets.
- 5. Meet the requirements of AWWA C-219.

C. Tapping Sleeves

- 1. Tapping sleeves shall be rated at 200 psi working pressure up to 12" diameter and 150 psi working pressure above 12" diameter.
- 2. Sleeve and outlet flange shall be 304 stainless steel.
- 3. Sleeve gasket shall be full length of the sleeve waffle style 360 degree around the pipe.
- 4. Provide full face gasket between the outlet flange and the valve flange.
- 5. Tapping sleeves shall be Mueller H-034, Smith Blair 665, Dresser Style 630, or Romac.

D. Couplings and adapters shall be Dresser, Smith-Blair, or Romac Industries.

2.10 INSULATION BOARD

A. Extruded polystyrene conforming to ASTM C578, Type IV.

B. Each board shall be 2 inches thick x 4 feet wide x 8 feet long.

2.11 PIPE EMBEDMENT MATERIAL

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- A. Soil Class A-7 - $\frac{3}{4}$ " or A-8- $\frac{3}{8}$ " crushed rock per section "Soils and Aggregates for Earthwork."
- B. Soil Class G-2 - "Clean earth fill per section "Soils and Aggregates for Earthwork."
- C. Sand or engineer approved material for steel casing void.

2.12 THRUST RESTRAINTS

A. Mechanical Restraints

- 1. Ductile Iron Pipe and Fittings:
 - a. Megalug Series 1100 follower gland or equal for mechanical joint restraints.
 - b. Clow "Super Lock," American "Lok-Ring" or U.S. Pipe "TR Flex" for push-on joint restraint.
- 2. Polyvinyl Chloride (PVC) Pipe:
 - a. Megalug Series 2000 PV restraint gland or equal for mechanical joint restraint.
 - b. EBAA Iron, Inc. Series 1600 for AWWA C-900 pipe push-on joint restraint and EBAA Iron, Inc. Series 2800 for AWWA C-905 pipe push-on joint restraint, or equal.
- 3. Alpha™ ends may be used in lieu of a mechanical restraint.
- 4. Polyvinyl Chloride (PVC) Pipe:
 - c. Megalug Series 2000 PV restraint gland or equal for mechanical joint restraint.
 - d. EBAA Iron, Inc. Series 1600 for AWWA C-900 pipe push-on joint restraint and EBAA Iron, Inc. Series 2800 for AWWA C-905 pipe push-on joint restraint, or equal.

B. Concrete Thrust Blocks

- 1. Ready-mixed concrete conforming to the following:

Class	28-day Compressive Strength (PSI)	Max. Size Coarse Aggregate	Min. Cement Content (Bags/CY)	Air Content (%)	Slump
B	3000	1 ½ Inch	4.75	6 +/-1	3 to 4 Inch

- 2. Job-mixed concrete is permitted for amounts one cubic yard or less and shall meet the same material and strength requirements as ready-mixed concrete.

PART 3 - EXECUTION

3.1 WATER MAIN PIPE INSTALLATION

A. General

- 1. Vertical and Horizontal Alignment:
 - a. Install pipe to maintain vertical and horizontal alignment as shown on the drawings.

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- b. Place pipe to required line and grade with a tolerance of plus or minus 0.1 feet.
 - c. Install pipe without unplanned high points in the line, and a minimum cover over the top of pipe of six (6) feet.
 - d. Provide fittings, valves and hydrants at the required locations with joints centered, spigots bottomed and valve and hydrant stems plumb.
2. Commence pipe installation only after the trench has been dewatered below the trench bottom and all necessary sheeting and bracing is in place.
3. Use full length pipe except where necessary at valves and fittings.
4. Cut pipe to provide a smooth end at a right angle to the longitudinal axis of the pipe.
5. Assemble pipe in accordance with the written recommendations of the manufacturer.
6. When the interruption or operation of an existing pressure pipeline system is necessary to complete construction, conform to the following:
 - a. Owner will operate system at Contractor's request.
 - b. Confine requests to Owner's normal working schedule.
 - c. Do not operate controls or appurtenances.
7. Excavate to existing water main. Adjust line and grade if necessary to avoid use of extra fittings.
8. Unless otherwise ordered, pipe shall be laid with the bell ends facing the direction of laying. When the grade exceeds two feet of rise per one hundred feet of trench, the bells shall face upgrade.
9. Permissible joint deflection shall conform to the following table:

Maximum Permissible Joint Deflection – Rubber Gasket Joint			
Pipe Size	Max. Def. Degrees	Max. Def. in. per 18 ft	Radius Of Curve - ft
6	5-00	19	205
8	5-00	19	205
10	5-00	19	205
12	5-00	19	205

10. Remove and salvage plugs, flush pipes and incidental sections of existing water main as requested by Engineer.
11. Maintain five (5) feet between fittings.
12. Do not insert pipe beyond the stop marks at joints.
13. Bolts are to be tightened with a torque wrench to the manufacturer's recommendations.

B. Open Cut Method

1. Pipe construction of any pipe material shall follow the recommended procedures of ASTM F1668.
2. Trench requirements shall conform to section "Trenching, Backfilling and Compacting".
3. Keep pipe clean during and after laying.

4. Do not roll, drop, or dump pipe appurtenances into the trench.
5. When laying operations are interrupted or terminated, temporarily seal pipe ends to prevent entry of water, debris, small animals, or other types of contamination. Prevent flotation of the sealed pipe.

C. Trenchless Excavation Method

1. Boring and Jacking:
 - a. Provide casing pipe bored and jacked in-place in accordance with section "Trenchless Excavation Construction," at line and grade to accommodate the carrier pipe.
 - b. Install carrier pipe at line and grade through casing pipe blocked to prevent contact with the casing pipe.
 - c. Fill the annular space between casing pipe and carrier pipe with sand or pea gravel.
2. Horizontal Directional Drilling:
 - a. Install pipe directly by horizontal directional drilling in accordance with section "Trenchless Excavation Construction" at the line and grade shown on the drawings.
 - b. Design pipe as required above that specified to accommodate tensile stress during the installation process.

D. Ductile Iron Pipe Installation

1. Install pipe and appurtenances in accordance with AWWA C600.
2. Install pipe and fittings with polyethylene encasement in accordance with AWWA C105.
3. Pipe shall be cut at right angles to the centerline of the pipe. Cutting shall be done in a neat workmanlike manner without damage to the pipe so as to leave a smooth end. All pipes shall be cut with an approved mechanical cutter. The cut end of a pipe to be used with a rubber gasket joint shall be tapered by grinding or filing about 1/8 inch back at an angle of approximately 30 degrees with the centerline of the pipe, and any sharp or rough edges shall be removed.

E. Polyvinyl Chloride (PVC) Pipe Installation

1. Install pipe and appurtenance in accordance with AWWA C605.
2. Pipe bending is not permitted.
3. For shorter than standard pipe lengths, field cuts may be made with either hand or

mechanical saws or plastic pipe cutters. Ends shall be cut square and perpendicular to the pipe axis. Spigots shall have burrs removed and ends smoothly beveled by a mechanical beveler or by hand with a rasp or file. Field spigots shall be stop-marked with felt tip marker or wax crayon for proper length of assembly insertion. The angle and depth of field bevels and lengths to stop-marks shall be comparable to factory pipe spigots.

F. Polyethylene (PE) Pipe Installation

1. Install pipe in accordance with ASTM D2774.

G. Pipe Embedment

1. Prestressed concrete cylinder pipe and ductile iron pipe Class "C" embedment:

a. Bedding:

- 1) 4" below pipe place Soil Class A-7 or A-8 material.
- 2) 6" below pipe place Soil Class A-7 or A-8 material if trench bottom is rock.
- 3) Place and work bedding material by hand to insure all excavated voids are filled.

b. Haunching and Initial Backfill:

- 1) From bedding material to one-sixth of pipe outside diameter use Soil Class A-7 material placed and worked by hand to insure all excavated voids are filled.
- 2) From one-sixth of pipe outside diameter to 12" above the pipe use Soil Class G-2 material compacted in-place to 95% standard proctor density using hand tampers or impact tampers.

2. Plastic Pipe - Class "B" Embedment:

a. Bedding, Haunching and Initial Backfill:

- 1) 4" below pipe to 12" above the pipe, place Soil Class A-7 or A-8 material work by hand to insure all excavated voids are filled.
- 2) If in rock, place Soil Class A-7 or A-8 material 6" below pipe to 12" above the pipe and work by hand to insure all excavated voids are filled.

3. Block pipe installed through steel casing so as not to touch steel casing and fill the annular space between steel casing and carrier pipe.

3.2 THRUST RESTRAINTS

- A. Provide at mechanical joint and push-on joint connections including valves, hydrants, and fittings including plugs, caps, tees, reducers and bends.

1. Alpha™ ends may be used in lieu of a mechanical restraint.

- B. Provide thrust restraint with mechanical restraints and concrete thrust blocks which physically prevent joint separation. Thrust blocks are to be constructed to transfer the thrust load from the pipe to the undisturbed soil of the trench wall.

1. When using mechanical restraints, restrain the fitting joints within the following minimum pipe length on each side of the fitting unless manufacturer's submitted calculations and recommendations indicate otherwise:

Restrained/Tied Pipe Length Chart Minimum Length Requiring Restraints				
Fitting Type	6 inch	8 inch	10 inch	12 inch
11.25° Bend	10	10	10	10
22.5° Bend	10	10	10	10
30° Bend	10	10	10	10
45° Bend	10	10	10	10

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60° Bend	10	20	20	20
90° Bend	20	20	30	40
Restrained/Tied Pipe Length Chart				
Minimum Length Requiring Restraints				
Tee (Side Tied)	20	20	30	40
Stubs or Dead Ends	20	20	30	40
Cross with Plugged End	20	20	30	40
Valve at End of Line	20	20	30	40
*Use of 90° Bends requires Engineer Approval				

2. Where grade changes are made in the line by means of bends, secure the top bends by mechanical restraints and secure the bottom bends by means of poured in-place concrete thrust blocks and provide mechanical restraints within a pipe length of 30' of the joint.
- C. Install mechanical restraints in accordance with the manufacturer's recommendations. Use a torque limiting twist off nut without the need for a torque wrench to insure proper actuation of the restraint wedge.
- D. Encase mechanical restraints, associated materials, and the restrained pipe with polyethylene. Encasements are to extend five (5) feet beyond restraint.
- E. Restrain hydrants with mechanical restraints or with tie rods connecting all joints between the hydrant and the main line.

3.3 HYDRANTS

- A. Install where shown on the Drawings in accordance with AWWA C600.
- B. Install hydrants plumb with the nozzles parallel with or at right angles to the road as determined by the Owner.
- C. Set to grade with breakaway flange not more than 2 inches above or below the established grade.
- D. Provide drainage at the base of the hydrant placing crushed rock pipe bedding material.
- E. If groundwater is above the drain port or the drain port is within 8 feet of a sanitary sewer or storm inlet, then plug the port.
- F. Repair any paint chips or finish deficiencies that occur during construction.

3.4 VALVES

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- A. Install in accordance with AWWA C600.
- B. Provide resilient wedge (gate) valves for sizes to 12 inches.
- C. Provide butterfly valves for sizes over 12 inches.
- D. Valves shall be supported on 6 inches of soil class A-7 or A-8 crushed rock pipe bedding material.
- E. Install valves in the closed position.
- F. Provide a valve box centered plumb over the operating nut of the valve and placed such that the box will not transmit shock or stress to the valve. Adjust the top of the valve box flush with finished grade.
- G. Provide and connect air release, vacuum relief valves to the main with a tee fitting and isolation valve. Install per manufacturer's recommendations.

3.5 CONNECTIONS TO EXISTING WATER MAIN

- A. Cut-in Connection
 - 1. Cut existing main only large enough to accept a mechanical joint ductile iron fitting or valve directly connected to one end of the existing pipe.
 - 2. Connect the other end using a ductile iron cut-in sleeve connected to the fitting or valve and the other cut end of the existing water main connected by mechanical joint end of the cut-in sleeve.
 - 3. Fittings shall be mechanical joint ductile iron or Hymax.
- B. Tapped Connection
 - 1. Connect to the existing water main using a tapping sleeve and tapping valve.
 - 2. The cut in the existing water main shall be full diameter.
 - 3. Provide the type of connection stated in the drawings.

3.6 INSULATION FOR PIPE FROST SHIELD

- A. Provide where shown on the Drawings.
- B. Install insulation board in an inverted U around the pipe.
- C. The top width of the insulation board frost shield shall be the same as the trench width centered over the pipe.
- D. The sides of the U shall be 2' high with the bottom of the legs at least to the springline of the pipe.

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- E. Install the insulation board in layers to provide a minimum thickness of 4" or the thickness stated on the Drawings.
- F. Install such that there are no voids under the insulation.

3.7 POLYETHYLENE ENCASEMENT

- A. Wrap underground ductile iron pipe.
- B. Wrap underground fittings, valves and valve boxes.
- C. Wrap mechanical restraints and accessories.
- D. Wrap all portions of hydrants below grade.
- E. Install in accordance with AWWA C105.
- F. Provide Class "C" polyethylene when exposure to sunlight will exceed two weeks.
- G. The polyethylene wrap shall be cut approximately five (5) feet longer than that of the pipe section and fittings. After assembling the pipe joint, the polyethylene shall be overlapped approximately one (1) foot and at all joints sealed with approved adhesive tape. Additional taping shall be used at three (3) foot intervals along the pipe. Any rips, punctures or other damage to the polyethylene shall be wrapped immediately with adhesive tape. Before installing the polyethylene wrap the exterior of the pipe shall be free of foreign material.
- H. When valves, tees, crosses, etc., cannot be wrapped practically in a tube, flat sheet or split tube shall be used. All seams shall be taped securely.
- I. The bedding and cover material shall be placed with care so as to prevent damage to the polyethylene wrap. Any rips or punctures in the wrap shall be repaired immediately.

3.8 TRACER WIRE

- A. Provide for water main.
- B. Tape wire directly to pipe at a minimum of three points per 20 foot length of pipe.
- C. Extend on all hydrants from the water main and the hydrant lead up the hydrant and into a tracer wire access box then continue back down to the water main so that a continuous strand of wire is achieved. The access box will be located adjacent to the hydrant, on the street side.
- D. Water main tracer wire at the curb box will be brought to the surface and with eighteen

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(18) inches of slack fastened to the curb box with plastic wire tie. The lateral will be marked with an eight (8) feet long, treated four by four (4"x4").

- E. Extend wire up to the surface at access points.
- F. Splices
 - 1. Maximum of one splice between access points.
 - 2. Splice connections shall be made using solder connections or other connections approved by Engineer.
- G. Connect tracer wire to ductile iron by welding when connecting new water main to existing ductile iron water main.

3.9 WATER SERVICES

- A. Location
 - 1. Install service laterals per the detail.
- B. Corporation Stops
 - 1. Install a 2 o'clock and 10 o'clock position on the pipe circumference.
 - 2. Do not install taps closer than 2 feet from the end of the pipe and not closer than 18" between taps.
 - 3. Tap ductile iron pipe in accordance with AWWA C600.
 - 4. Install service connections to PVC pipe in accordance with AWWA C605 using service saddles.
 - 5. Install corporation stops with the pipeline at normal working pressure to visually observe any leaks.
 - 6. Tap the service with the use of manual feed equipment using a cutter designed specifically for the material being tapped.
 - 7. Provide seven (7) feet of depth at the property line.
 - 8. Construct services without any coupling from the corporation to the curb box.
 - 9. Water services from the main to the curb box shall be HDPE or PVC per the "Materials Section".
 - 10. Water services from the curb box to existing copper water service shall be copper, unless HDPE is approved by the Engineer. HDPE may be allowed to accommodate bending the water service to connect to a shallower existing service. Connect tracer wire to copper water service with clamp.

- C. Install service pipe with horizontal curve from the service connection back to the straight trench to the property line.
- D. Install curb stops at the property or as shown on the Drawings.
 - 1. Provide curb box centered over the operating nut of the valve.
 - 2. Provide shut-off extension rod on the curb stop valve operator.
 - 3. Provide a stainless steel bolt and locking nut to connect the curb stop to the stainless steel curb box rod.
 - 4. Top of the curb box shall be adjusted flush with the finished grade.
 - 5. Mark the location with a treated four by four (4"x4") board installed four (4) feet in the ground and four (4) feet out of ground. Water marker shall be painted blue.
 - 6. If an existing water service being replaced is shallow, the Engineer may direct the Contractor to replace the water service beyond the sidewalk.
- E. Construct a clay dam around the lateral at the end of the new lateral, prior to the curb stop.
 - 1. Clay dam is to be 12" thick.
 - 2. Install in place of the bedding stone and initial backfill.
- F. Insulate water service if within 12" to the bottom of a sewer.
- G. Do not install water main above a storm sewer without approval from the Engineer.

3.10 FIELD QUALITY CONTROL

- A. Provide the following pipe tests:
 - 1. Perform pressure and leakage test for pressurized pipelines prior to connecting water services.
 - 2. Perform a secondary leakage test after all services and curb stops are installed.
 - a. Notify all residents of test.
 - b. Test shall be performed at water system pressure following the procedure identified in Section 01 45 23.
 - c. Close all curb stops in the section during the test.
 - 3. Continuity testing for tracer wire installed.

3.11 DISINFECTION AND BACTERIOLOGICAL TESTING

- A. Provide disinfection and bacteriological testing according to AWWA C651-14 and section NR 811.73, Wisconsin Administrative Code.
- B. If piping was contaminated during storage, construction, or repair, the pipe shall be flushed to remove any foreign material that may have entered the pipe prior to disinfection.

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C. Disinfect with Tablet Method.

1. Place the required number of tablets as follows:

- a. The inlet end of each pipe section, including branch lines. The number of tablets shall be per the following:

Pipe Diameter (Inches)	13 or less feet (Number of Tablets)	18 feet (Number of Tablets)	20 feet (Number of Tablets)
4	1	1	1
6	1	1	1
8	1	2	2
10	2	3	3
12	3	4	4
16	4	6	7

Refer to AWWA C651-14 for larger diameters

- b. Each hydrant, hydrant lead, and other appurtenances.
 2. Attach tablets with food-grade adhesive to the top inside surface of the pipe.
 - a. Use adhesive approved by USDA for contact with edible products.
 - b. Adhesive shall be Permatex Form-A-Gasket No. 2, Permatex Clear RTV Silicone, or equal.
 - c. Permatex Form-A-Gasket No. 1 is not acceptable.
 3. Fill in a manner such that the water velocity within the main will not exceed 1 fps.
 4. Water is to remain in the pipe for a minimum of 24 hours. If the water temperature is less than 41 degrees F, the water is to remain in the pipe a minimum of 48 hours.
- D. Verify Chlorine Residual. Confirm the chlorine residual after 24 or 48 hours is greater than 0.2 ppm.
- E. Flush Chlorinated Water. Chlorinated water shall be flushed until the chlorine residual returns to background level for the distribution system. Water with a chlorine residual greater than distribution system must be de-chlorinated prior to discharge to the ground surface or storm sewer.
- F. Verify by Bacteriological Testing. Following flushing, the water main shall be tested for coliform analyses as follows:
1. New water mains.
 - a. Two sets of samples collected 16 hours apart; or
 - b. Two sets of samples collected after the fresh water has remained in the main for at least 16 hours. The sets shall be collected no less than 15 minutes apart.
 - c. A set of samples includes: one sample every 1200 feet, one sample at the end of the newly installed line and one sample at each branch greater than one pipe length.
 2. Repaired mains that are depressurized and partially or wholly depressurized.
 - a. One set of samples after flushing.

- b. The line may be reactivated prior to completion of the bacteriological analyses.
 - c. A set of samples includes: one sample downstream of the repair site (if flow direction is unknown, then one sample from each end of the repair site) and every 200 feet of pipe that was shut down.
- 3. Repaired mains that were maintained under pressure at all times. No bacteriological testing is required.
- G. Water from all new mains must successfully pass a bacteriological test in accordance with the requirements of the Department of Natural Resources before the main is placed in service. This test shall be taken by the Contractor with results provided to the Engineer.
- H. Upon successful completion of disinfection, place the water main in service to maintain system pressure.

END OF SECTION

SECTION 33 31 00 SANITARY SEWER SYSTEMS

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes

1. Gravity sanitary sewer installation.
2. Precast concrete and concrete masonry manholes.
3. Manhole castings.
4. Manhole drops.
5. Sewer services.
6. Tracer wire.

1.2 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. ASTM A48 Standard Specification for Gray Iron Castings
2. ASTM C139 Standard Specification for Concrete Masonry Units for Construction of Catch Basins and Manholes
3. ASTM A240 Standard Specification for Heat-Resisting Chromium and Chromium-Nickel Stainless Steel Plate, Sheet and Strip for Pressure Vessels
4. ASTM C270 Standard Specification for Mortar for Unit Masonry
5. ASTM C476 Standard Specification for Grout for Reinforced and Non-reinforced Masonry
6. ASTM C478 Standard Specification for Precast Reinforced Concrete Manhole Sections
7. ASTM C578 Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation
8. ASTM C913 Standard Specification for Precast Concrete Water and Wastewater Structures
9. ASTM C923 Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures and Pipes
10. ASTM C1173 Standard Specification for Flexible Transition Couplings for Underground Piping Systems
11. ASTM D2321 Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications
12. ASTM D4101 Standard Specification for Propylene Plastic Injection and Extrusion Materials

B. American Association of State highway and Transportation Officials (AASHTO):

C. Federal Specifications (FS):

1. FS SS-C-153C Cement, Bituminous, Plastic.

1.3 SUBMITTALS

- A. A manufacturer's certification for each product stating that the products were manufactured in accordance with the designated reference standards with test results and date of tests.

PART 2 – PRODUCTS

2.1 PIPE

A. Pipe Material

1. PVC Sewer Pipe shall be in accordance with Section 33 00 02 Polyvinyl Chloride (PVC) Pipe and Fittings.
2. Pipeline material shall be PVC Pipe unless stated elsewhere in the proposal schedule or as shown on drawings
3. Pipe diameters shall be as shown on drawings.

B. Wyes, Tees, Risers and Fittings

1. Wyes, tees and fittings shall be the same type of material and class as the mainline pipe.
2. Risers and fittings shall be the same material and class as the service connections.
3. Tees can only be used for connecting to existing sanitary sewers when approved by the Engineer.
4. Wye branches for a lined sewer shall be a saddle type connector compatible with the lined pipe. Acceptable manufacturers:
 - a. Fernco Tap Saddle
 - b. GPK gasketed sewer fittings,
 - c. Approved equals (saddle wye gasket branch and gasket skirt with straps) will be considered.

2.2 TRANSITION COUPLINGS

A. Couplings for transition between dissimilar pipe diameters or dissimilar pipe materials

1. Fernco Inc. or Mission Rubber Company are acceptable manufacturers.
2. Conform to ASTM C1173.
3. Provide stainless steel shear rings, bands, nuts and housings of marine grade stainless steel conforming to ASTM A240.

2.3 MANHOLES

A. Precast Reinforced Concrete Manholes

1. Components including base sections, riser sections, grade rings (adjustment rings), eccentric cone, flat slab top and manhole reducing bench shall meet ASTM C478.
2. Base section shall include base riser section with integral monolithic bottom extending minimum of 6 inches beyond riser section.
3. Tops for manholes shall be eccentric cone or, if required elsewhere, flat slab top.

4. Adjusting rings
 - a. Precast concrete minimum of 2 inches thick.
 - b. Rubber: Infra-Riser or approved equal.
 5. Eccentric cones, flat slab tops and adjusting rings.
 - a. Shall have a 24 inch diameter opening.
 - b. Shall support AASHTO H-20 loadings.
 6. Joints between components.
 - a. Joint design shall be in accordance with ASTM C990.
 - b. Gasket shall be the 1 ¼ inch thick butyl rubber material meeting requirements of AASHTO M-198 Type B flexible plastic gasket and ASTM C990 butyl rubber sealant.
 7. Connector between Precast Reinforced Manhole Structures
 - a. Resilient flexible connector shall meet ASTM C923.
 - b. The seal between the flexible connector and the manhole shall be by casting the connector integrally with the manhole wall.
 - c. The seal between the connector and the pipe shall be by compression of the resilient material against the outside of the pipe.
 - d. Factor made manholes shall use A-Lok, Z-Lok, or equal.
 - e. Where an existing manhole is core drilled in the field, the flexible connector shall be NPC Inc., Kor-N-Seal or Press-Seal Gasket Corporation PSX:Positive Seal.
- B. Bituminous plastic cement shall meet Federal Specification SS-C-153C, Type I.
- C. Manhole Steps
1. Steel reinforced copolymer polypropylene meeting ASTM C478.
 2. Copolymer polypropylene shall meet ASTM D4101.
 3. Steel reinforcement shall be ASTM A615, Grade 60, ½ inch minimum steel reinforcing rod.
 4. Step shall be 12 inches wide and project from the wall between 5 inches and 7 inches.
 5. Minimum design live load shall be a single concentrated load of 300 lbs. when in place.
- D. Castings
1. Shall be ASTM A48, Class 35B, gray iron.
 2. Manhole frame and covers shall be non-rocking.
 3. Manhole covers for sanitary sewer shall be self-sealing with concealed pick hole.
 4. Shall be of uniform quality free from blowholes, shrinkage, discoloration and other defects.
 5. Shall be heavy duty designed for AASHTO H-20 loads.
 6. Type 1 Frame and Cover: Neenah Foundry No. R1500 unless stated elsewhere in the proposal or as shown on the drawings.

2.4 PIPE EMBEDMENT MATERIAL

- A. Soil Class A-7 or A-8 crushed rock per section “Soils and Aggregates”.

2.5 TRACER WIRE

- A. Tracer wire will be continuous, single-strand #12 solid copper THHN wire with a continuous coating of polyethylene insulation suitable for direct burial in wet locations.
- B. Tracer wire on sanitary laterals will have green colored insulation.

PART 3 – EXECUTION

3.1 GRAVITY SEWER INSTALLATION

A. General

- 1. Vertical and Horizontal Alignment
 - a. Install sewer pipe to maintain vertical and horizontal alignment as shown on the Drawings.
 - b. Use laser equipment mounted in a manner to permit beam to shine through pipe.
 - c. Use a target to check each pipe installed.
 - d. Check laser beam alignment and grade a minimum of every 100 feet.
 - e. Use a fan to control air temperature variations in pipe and reduce bending of laser beam.
- 2. Commence pipe installation only after the trench has been dewatered below the trench bottom and all necessary sheeting and bracing is in place.
- 3. Install pipe starting at the downstream end and proceed toward the upstream.
- 4. Install plastic pipe in accordance with ASTM D2321, as revised by these specifications.

B. Pipe Embedment

- 1. Plastic Pipe – Class “B” Embedment:
 - a. Bedding, Haunching and Initial Backfill
 - 1) 4” below pipe to 12” above the pipe, place Soil Class A-7 or A-8 material work by hand to insure all excavated voids are filled.
 - 2) If in rock, place Soil Class A-7 or A-8 material 6” below pipe to 12” above the pipe and work by hand to insure all excavated voids are filled.

C. Pipe Installation

- 1. Open Cut Method:
 - a. Trench requirements shall conform to Section “Trenching, Backfilling, and Compacting.”
 - b. Do not use support blocking.
 - c. Proceed pipe laying upgrade with spigot pointing in direction of flow.
 - d. Lay each pipe true to line and grade within tolerances required for lamping.
 - e. When pipe installation is not in progress, provide the forward end of the pipe with a temporary plug to prevent foreign material from entering.
 - f. Push “home” the spigot end of the pipe joint in the socket before proceeding to install the next pipe.
 - g. When connecting to an existing sewer not terminating in a manhole, uncover the end of the existing sewer prior to laying sewer to allow horizontal and vertical

- adjustments.
- h. Install pipe such that pipe joints are located far enough from the manhole outside wall to permit future pipe repair without damaging the manhole and the joints shall not fall within manhole walls.
2. Trenchless Excavation Method
- a. Auger horizontal earth boring (boring and jacking)
 - 1) Bore and jack steel casing pipe at location and diameter or larger shown on the
 - 2) Drawings in accordance with Section "Trenchless Excavation Construction" at line and grade to accommodate the gravity carrier pipe.
 - 3) Install the gravity carrier pipe at line and grade through the casing pipe blocked to prevent contact with the casing pipe.
 - 4) Fill the annular space between casing pipe and gravity carrier pipe with sand or Engineer approved equal.
 - b. Horizontal directional drilling
 - 1) Install gravity carrier pipe in accordance with Section "Trenchless Excavation Construction" at line and grade and location shown on the Drawings.
 - 2) Fill the annular space between the bore hole and the gravity carrier pipe with a bentonite slurry.
- D. Manholes
- 1. General Installation Requirements:
 - a. Depths shown on Drawings shall be considered approximate.
 - b. Establish flow lines and casting elevations from grade stakes and cut sheets.
 - c. Provide 6 feet minimum height from top of casting to flowline.
 - d. Place bases on a minimum of four (4) inches of bedding material:
 - 1) Soil Class A-7 or A-8.
 - 2) Place and work by hand to insure all excavated voids are filled.
 - 3) The maximum amount of adjusting rings is twelve inches.
 - e. Seal exterior of lift holes with bituminous plastic cement.
 - f. Fill the following with mortar and finished smooth.
 - 1) Interior joints and lift holes.
 - 2) Annular space around pipes: interior bottom half only.
 - g. Construct manholes in accordance with the appropriate detail drawings.
 - h. Install structures plumb.
 - 2. Detailed Installation:
 - a. Unless indicated otherwise, provide precast concrete manhole construction.
 - b. Four foot diameter shall be considered standard.
 - c. Pitch casting to match street crowns where applicable.
 - d. Provide precast risers in a combination of lengths to minimize the number of joints.
 - e. Install Butyl Rubber Joint Sealant at risers:
 - 1) Rope configuration.
 - 2) Install to be compressed by subsequent riser.
 - f. Manhole adjusting
 - 1) Manholes must have only **ONE** concrete ring (2", 4", or 6") on top of the cone section.
 - a) Asphaltic Concrete Pavement - Secure ring to the pre-cast cone section with a 3 and ½ inch wide Kent Seal or equal.

- b) Concrete Pavement – Secure ring to pre-cast cone section with concrete vibrated in place during the paving operation.
 - 2) For manholes in pavement, above the concrete ring attach ½ inch thru 3 inch thick tapered rubber ring using two (2) 5/16 inch bead above and below the ring, of sealant type as recommended by the rubber ring manufacturer.
 - g. The maximum amount of adjusting rings is twelve inches. Do not enter manhole with pipe through cone section.
 - h. The pipe shall enter the barrel of the manhole through a flexible, watertight gasket or connector.
 - i. Precast flat top may be used in lieu of a cone section when elevation is limited.
 - j. Provide Type 1 frames and covers for each manhole unless otherwise shown on the plan details.
 - k. Manhole Drops:
 - 1) Conform to the detail Drawings.
 - 2) Furnish where designated on Drawings.
 - l. Inverts:
 - 1) Shall conform to the following:
 - a) Shape to the lower half diameter of the largest connecting pipe.
 - b) Slope concrete bench upward to manhole wall.
 - c) Maintain a uniform flow line slope through manhole which matches minimum pipe slope.
 - 2) Precast manholes shall be furnished with a manufacturer installed invert.
 - m. Future Sewer Connections:
 - 1) Pipe stubs shall be provided as shown on the drawings.
 - 2) Stubs shall extend a maximum of 12 inches from outer wall of structure unless otherwise stated.
 - 3) Stub shall be capped or bulkheaded and water tight.
- E. Sewer Services
- 1. Laterals:
 - a. Unless otherwise specified, terminate laterals at the property line.
 - b. In the absence of grade stakes, install laterals deep enough to pick up the lowest service point, or a minimum depth of 10 feet, whichever is greater.
 - c. Install laterals in conformance with all plumbing codes and ordinances.
 - d. Provide cleanouts required by plumbing codes and ordinances as part of the lateral installation.
 - e. When a lateral is not connected for immediate use:
 - 1) Mark the location with a 4" x 4" pressure treated board, installed 4 feet in the ground and 4 feet out of the ground. Sanitary marker shall be painted green.
 - 2) Provide a watertight cap on the lateral end.
 - f. Install sewer lateral and water services with location and separation per the details.
 - g. Construct a clay dam around the lateral at the right-of-way, or at end of the new lateral.
 - 1) Clay dam is to be 12" thick
 - 2) Install in place of the bedding stone and initial backfill
 - 2. Risers:
 - a. Risers shall be located at the mainline pipe unless noted otherwise on the plans or in the special provisions.
 - b. Bends shall be 45 degrees.

- c. Riser pipe shall be placed on a minimum of four (4) inches of bedding material.
- 3. Service Branches:
 - a. New Sewers: Install a factory assembled wye branch wherever possible.
 - b. Existing and Lined Sewers:
 - 1) Provide "Y" branches with a saddle type connector compatible to the pipe material being used.
 - 2) Provide concrete or hard wood blocking under the wye.
- F. Connecting New Pipe to Existing Pipe
 - 1. If pipe are of the same material and size, then use a coupling of the same pipe material designed for coupling of the same material and size.
 - 2. If pipe are of dissimilar material or size or there is no coupling made of the same material, then provide a transition coupling with a stainless steel shear ring or approved equal. Provide bushings or inserts to maintain the flow line through the connection.
- G. Joints
 - 1. Construct joints in compliance with manufacturer's recommendations.
 - 2. Utilize full length pipe except at manholes or service branches.
- 3.2 INSULATION FOR PIPE FROST SHIELD
 - A. Provide where shown on the Drawings.
 - B. Install insulation board in an inverted U around the pipe.
 - C. Install insulation board with the top insulation board the same width as the trench centered over the pipe.
 - D. Install the sides of the U-shape two feet high with the bottom of the legs at least to the springline of the pipe.
 - E. Install the insulation board in layers to provide a minimum thickness of 4 inches or the thickness stated on the Drawings.
 - F. Install such that there are no voids under the insulation.
- 3.3 BULKHEADS
 - A. Bulkhead new construction to protect existing sewers from water, dirt, and debris.
 - B. Do not remove bulkheads until new construction is accepted for use.
 - C. Prior to removal of bulkhead, remove all material (liquid or solid) which accumulated behind bulkheads.

3.4 CLEANING AND REPAIRING SEWER LINES

- A. Clean as follows:
 - 1. All new sewer lines installed under this contract.
 - 2. Any existing sewer lines which are affected by construction.
- B. Furnish water and jetting equipment for cleaning operation.
- C. Repair all visible leads and defects, whether or not the sewer lines have been subject to all required tests.
- D. Remove any stuck cleaning, inspection or testing equipment from sewer lines.

3.5 TRACER WIRE

- A. Provide for all non-metallic service laterals within public right-of-way.
- B. Lateral or branch tracer wire splice connections will be typical Western Union-type solder splice made by stripping the coating off the main run tracer wire and then tightly wrapping the branch tracer wire around the main run tracer wire a minimum of 8 times. Both wire splices would then be soldered with a self-flux, 50-50 rosin core solder and tightly wrapped with a 1 ½ " wide by 3.2 mm Scotchfill™ electrical insulation tape, or equivalent then coated with 3M Scotchkote™ electrical coating, or equivalent so that no copper wire is exposed. A stripping tool shall be used to remove the plastic coating on the wire. The Contractor will be responsible to have all the correct types of tools necessary to install the tracer wire materials as specified above and to ensure that the tools are in good working order.
- C. Tracer wire will be securely attached to the mainline sewer pipe, within (6) six inches of each end of the pipe, and at equally spaced locations with a maximum spacing of (6) six feet. Any exposed copper wire will be sealed and covered with materials approved by the Engineer.
- D. Tracer wire at the end of laterals on new sewer construction shall be brought to the surface at the right-of-way perpendicular to the end of the lateral and will be inserted into a three (3) foot long piece of a one (1) inch PVC with a double slotted cap and securely attached to the treated four by four (4"x4"). The top of the four by four will be placed such that four (4) feet extends above the finished grade. The one (1) inch PVC shall be placed such that eighteen (18) inches extend above the finished grade. The tracer wire at the top of the PVC will protrude out of one of the slots and back into the PVC pipe through the other slot with at least eighteen inches of slack.
- E. Tracer wire at the end of laterals on sanitary sewer replacements with connections to existing laterals shall be as follows:

1. Wrapped around the curb stop.
2. If the lateral is not located near the curb stop, provide a ½ -inch diameter by 4 ft. long rod to connect the tracer wire at the connection to the existing lateral.

3.6 FIELD QUALITY CONTROL

- A. Provide the following service in accordance with the section on Testing and Inspection of Pipeline Appurtenances.
 1. Televiser all sanitary sewers.
 2. Lamp sanitary sewers if required by the Engineer.
 3. Perform a low pressure air test.
 4. Perform a deflection test on all plastic pipes.
 5. Perform a continuity test on all tracer wire.

END OF SECTION

SECTION 33 41 00 STORM SEWER SYSTEMS

PART 1 – GENERAL

1.1 SUMMARY

- A. Section Includes
1. Gravity storm sewer installation.
 2. Precast concrete manholes.
 3. Precast concrete inlets.
 4. Manhole, inlet and catch basin castings.
 5. Sewer services.

1.2 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. ASTM A48 Standard Specification for Gray Iron Castings
2. ASTM A240 Standard Specification for Heat-Resisting Chromium and Chromium-Nickel Stainless Steel Plate, Sheet and Strip for Pressure Vessels
3. ASTM C139 Standard Specification for Concrete Masonry Units for Construction of Catch Basins and Manholes
4. ASTM C91 Standard Specification for Masonry Cement
5. ASTM C207 Standard Specification for Hydrated Lime for Masonry Purposes
6. ASTM C270 Standard Specification for Mortar for Unit Masonry
7. ASTM C476 Standard Specification for Grout for Reinforced and Nonreinforced Masonry
8. ASTM C478 Standard Specification for Precast Reinforced Concrete Manhole Sections
9. ASTM C578 Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation
10. ASTM C564 Standard Specification for Rubber Gaskets for Cast Iron Soil Pipe and Fittings
11. ASTM C913 Standard Specification for Precast Concrete Water and Wastewater Structures
12. ASTM C923 Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures and Pipes
13. ASTM C990 Standard Specification for Joints for Concrete Pipe, Manholes and Precast Box Sections Using Preformed Flexible Joint Sealants
14. ASTM C1173 Standard Specification for Flexible Transition Couplings for Underground Piping Systems
15. ASTM D2321 Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications
16. ASTM D4101 Standard Specification for Propylene Plastic Injection and Extrusion Materials

B. American Association of State highway and Transportation Officials (AASHTO):

1. AASHTO H-20 Standard Specification for Highway Bridges.
2. AASHTO M198 Joints for Circular Concrete Sewer and Culvert Pipe Using Flexible Watertight Gaskets.

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C. Federal Specifications (FS):

1. FS SS-C-153C Cement, Bituminous, Plastic.

1.3 SUBMITTALS

- A. A manufacturer's certification for each product stating that the products were manufactured in accordance with the designated reference standards with test results and date of tests.

PART 2 – PRODUCTS

2.1 PIPE

A. Sewer Pipe

1. Concrete sewer pipe shall be in accordance with 33 00 01 Concrete Pipe-Reinforced.
2. PVC Sewer Pipe shall be in accordance with Section 33 00 02 Polyvinyl Chloride (PVC) Pipe and Fittings.
3. CMCP shall be in accordance with Section 33 00 04 Corrugated Metal Culvert Pipe and Fittings.
4. Pipeline material shall be as stated in the proposal schedule or as shown on drawings
5. Pipe diameters shall be as shown on drawings.

B. Wyes, Tees, Risers and Fittings

1. Wyes, tees and fittings shall be the same type of material and class as the mainline pipe.
2. Risers and fittings shall be the same material and class as the service connections.
3. NPC Kor-N-Tee Lateral, Fernco Multi-Tite Pipe Gaskets or Saddle Connector as recommended by the manufacturer may be used where mainline pipe is greater than 12" diameter.

2.2 TRANSITION COUPLINGS

A. Couplings for transition between dissimilar pipe diameters or dissimilar pipe materials

1. Fernco Inc. or Mission Rubber Company are acceptable manufacturers.
2. Conform to ASTM C1173.
3. Provide stainless steel shear rings, bands, nuts and housings of marine grade stainless steel conforming to ASTM A240.

2.3 MANHOLES AND INLETS

A. Precast Reinforced Concrete Manholes and Inlets

1. Components including base sections, riser sections, grade rings (adjustment rings), eccentric cone, flat slab top and manhole reducing bench shall meet ASTM C478 and rectangular, inlets and catch basins shall meet ASTM C913.
2. Base section shall include base riser section with integral monolithic bottom extending minimum of 6 inches beyond riser section.

3. Tops for manholes shall be eccentric cone or, if required elsewhere, flat slab top.
 4. Adjusting rings
 - a. Precast concrete: minimum of 2 inches thick.
 - b. Rubber: Infra-Riser or approved equal.
 5. Eccentric cones, flat slab tops and adjusting rings.
 - a. Shall have a 24 inch diameter opening.
 - b. Shall support AASHTO H-20 loadings.
 6. Joints between components.
 - c. Joint design shall be in accordance with ASTM C990.
 - d. Gasket shall be the 1 ¼ inch thick butyl rubber material meeting requirements of AASHTO M-198 Type B flexible plastic gasket and ASTM C990 butyl rubber sealant.
 7. Connection between Manhole Structures and Storm Sewer Pipe.
 - a. Provide a non-shrink grout.
- B. Bituminous plastic cement shall meet Federal Specification SS-C-153C, Type I.
- C. Manhole Steps
1. Steel reinforced copolymer polypropylene meeting ASTM C478.
 2. Copolymer polypropylene shall meet ASTM D4101.
 3. Steel reinforcement shall be ASTM A615, Grade 60, ½ inch minimum steel reinforcing rod.
 4. Step shall be 12 inches wide and project from the wall between 5 inches and 7 inches.
 5. Minimum design live load shall be a single concentrated load of 300 lbs. when in place.
- D. Castings
1. Shall be ASTM A48, Class 35B, gray iron.
 2. Manhole frame and covers shall be non-rocking.
 3. Shall be of uniform quality free from blowholes, shrinkage, discoloration and other defects.
 4. Shall be heavy duty designed for AASHTO H-20 loads.
 5. Manhole Castings: Neenah Foundry No. R1500, unless stated elsewhere in the proposal or as shown on the drawings.
 6. Type A Field Inlet Casting: Neenah Foundry No. 1500 with R2100 Grate Type "A".
 7. Type B Inlet Casting: Neenah Foundry No. 3067-L, R-3235 curb box with language for dump no waste drains to river.
 8. Beehive Grate and Casting: Neenah Foundry No. R-2560-D3.
- 2.4 MORTAR
- A. Cement
1. Furnish masonry cement conforming to ASTM C91, type S.
 2. Furnish hydrated lime conforming to ASTM C207.
- B. Sand
1. Use sand conforming to 501.2.5, WisDOT State Specifications, except as follows:

- a. Ensure that sand subjected to the mortar strength test has a tensile or compressive strength at 3 days and 7 days of not less than 85 percent of that developed by mortar of the same proportions and consistency, made of the same cement and standard Ottawa sand.
- b. Use sand uniformly graded from coarse to fine conforming to the following gradation requirements:

SIEVE	PERCENT PASSING BY WEIGHT
No. 8	95-100
No. 100	25 Maximum
No. 200	10 Maximum

C. Mortar

1. Use mortar composed of 3 parts of sand for mortar, and one part of either a mixture of 50 percent portland cement and 50 percent of masonry cement, or a mixture of 75 percent portland cement and 25 percent hydrated lime.
2. Use a machine to mix the mortar unless the engineer allows otherwise.
 - a. Prepare machine-mixed mortar in an engineer-approved mixer and mix not less than 1 ½ minutes.
 - b. If preparing hand-mixed mortar, mix the sand and cement thoroughly in a clean, tight mortar box until uniform in color, then add clean water in a quantity that forms a stiff paste.
 - c. Do not use mortar mixed longer than 30 minutes or that develops its initial set.

2.5 GEOTEXTILE FABRIC FOR FILTRATION AND SEPARATION

- A. Fabric shall be non-woven polyester, polypropylene or polyethylene conforming to the following minimums:
 1. Grab Tensile Strength: 180 lbs.
 2. Puncture strength: 68 lbs.
 3. Apparent Breaking Elongation: 30%
 4. Apparent Opening Size (Sieve Size): 50
 5. Permittivity

2.6 PIPE EMBEDMENT MATERIAL

- A. Soil Class A-7, or A-8 crushed rock per section "Soils and Aggregates."

2.7 TRACER WIRE

- A. Tracer wire will be continuous, single-strand #12 solid copper THHN wire with a continuous coating of polyethylene insulation suitable for direct burial in wet locations.
- B. Tracer wire on storm sewer laterals will have brown colored insulation.

2.8 ENDWALLS

- A. Reinforced concrete apron endwalls shall be installed on the outlets of reinforced concrete storm sewer as called for on the plans. The concrete apron endwalls shall be constructed to conform to Section 33 00 01 Reinforced Concrete Pipe.
- B. Corrugated metal apron endwalls shall be installed on outlets corrugated metal culverts as called for on the plans. The metal apron endwalls shall be constructed to conform to Section 33 00 04 Corrugated Metal Culvert Pipe.

PART 3 – EXECUTION

3.1 GRAVITY SEWER INSTALLATION

A. General

- 1. Vertical and Horizontal Alignment
 - a. Install sewer pipe to maintain vertical and horizontal alignment as shown on the Drawings.
 - b. Use laser equipment mounted in a manner to permit beam to shine through pipe.
 - c. Use a target to check each pipe installed.
 - d. Check laser beam alignment and grade a minimum of every 100 feet.
 - e. Use a fan to control air temperature variations in pipe and reduce bending of laser beam.
- 2. Commence pipe installation only after the trench has been dewatered below the trench bottom and all necessary sheeting and bracing is in place.
- 3. Install pipe starting at the downstream end and proceed toward the upstream.
- 4. Install plastic pipe in accordance with ASTM D2321, as revised by these specifications.

B. Pipe Embedment

- 1. Circular Concrete Pipe – Class “C” Embedment:
 - a. Bedding:
 - 1) 4” below pipe place Soil Class A-7 or A-8 material.
 - 2) 6” below pipe place Soil Class A-7 or A-8 material if trench bottom is rock.
 - 3) Place and work bedding material by hand to insure all excavated voids are filled.
 - b. Haunching and Initial Backfill:
 - 1) From bedding material to one-sixth of pipe outside diameter, use Soil Class A-7 or A-8 material place and worked by hand to insure all excavated voids are filled.
 - 2) From one-sixth of pipe outside diameter to 12” above the pipe, use Soil Class G-2 material compacted in-place to 95% standard proctor density using hand tampers or impact tampers.
- 2. Plastic Pipe and Corrugated Metal Pipe – Class “B” Embedment:
 - b. Bedding, Haunching and Initial Backfill
 - 1) 4” below pipe to 12” above the pipe, place Soil Class A-7 or A-8 material work by hand to insure all excavated voids are filled.
 - 2) If in rock, place Soil Class A-7 or A-8 material 6” below pipe to 12” above the pipe and work by hand to insure all excavated voids are filled.

3. Perforated Pipe – Class “B” Embedment
 - a. Bedding, Haunching and Initial Backfill
 - 1) 4” below pipe to 12” above the pipe, place Soil Class A-7 or A-8 material work by hand to insure all excavated voids are filled.
 - 2) If in rock, place Soil Class A-7 or A-8 material 6” below pipe to 12” above the pipe and work by hand to insure all excavated voids are filled.
- C. Pipe Installation
 1. Open Cut Method:
 - a. Trench requirements shall conform to Section “Trenching, Backfilling, and Compacting.”
 - b. Do not use support blocking.
 - c. Proceed pipe laying upgrade with spigot pointing in direction of flow.
 - d. Lay each pipe true to line and grade within tolerances required for lamping.
 - e. When pipe installation is not in progress, provide the forward end of the pipe with a temporary plug to prevent foreign material from entering.
 - f. Push “home” the spigot end of the pipe joint in the socket before proceeding to install the next pipe.
 - g. When connecting to an existing sewer not terminating in a manhole, uncover the end of the existing sewer prior to laying sewer to allow horizontal and vertical adjustments.
 - h. Install pipe such that pipe joints are located far enough from the manhole outside wall to permit future pipe repair without damaging the manhole and the joints shall not fall within manhole walls.
 2. Trenchless Excavation Method
 - a. Auger horizontal earth boring (boring and jacking)
 - 1) Bore and jack steel casing pipe at location and diameter or larger shown on the Drawings in accordance with Section “Trenchless Excavation Construction” at line and grade to accommodate the gravity carrier pipe.
 - 2) Install the gravity carrier pipe at line and grade through the casing pipe blocked to prevent contact with the casing pipe.
 - 3) Fill the annular space between casing pipe and gravity carrier pipe with sand or Engineer approved equal.
 - b. Horizontal directional drilling
 - 1) Install gravity carrier pipe in accordance with Section “Trenchless Excavation Construction” at line and grade and location shown on the Drawings.
 - 2) Fill the annular space between the bore hole and the gravity carrier pipe with a bentonite slurry.
- D. Manholes and Inlets
 1. General Installation Requirements:
 - a. Depths shown on Drawings shall be considered approximate.
 - b. Establish flow lines and casting elevations from grade stakes and cut sheets.
 - c. Provide four feet eight inches (4’-8”) minimum height from top of casting to base.
 - d. Place bases on a minimum of four (4) inches of bedding material:
 - 1) Soil Class A-7 or A-8.
 - 2) Place and work by hand to insure all excavated voids are filled.

- e. Seal exterior of lift holes with bituminous plastic cement.
- f. Fill the following with mortar and finished smooth.
 - 1) Interior joints and lift holes.
 - 2) Annular space around pipes
- g. Construct manholes and inlets in accordance with the appropriate detail drawings.
- h. Install structures plumb.
- 2. Detailed Installation:
 - a. Unless indicated otherwise, provide precast concrete manhole construction.
 - b. Four foot diameter shall be considered standard.
 - c. Pitch casting to match street crowns where applicable.
 - d. Provide precast risers in a combination of lengths which minimize the number of joints.
 - e. Install Butyl Rubber Joint Sealant at Risers:
 - 1) Rope configuration.
 - 2) Installed to be compressed by subsequent riser.
 - f. Manhole and Inlet Adjusting.
 - 1) Manholes and inlets must have only ONE concrete ring (2", 4", or 6") on top of the cone section.
 - a) Asphaltic Concrete Pavement – Secure ring to the pre-cast cone section with a 3 and ½ inch wide Kent Seal or equal.
 - b) Concrete Pavement – Secure ring to pre-cast cone section with concrete vibrated in place during the paving operation.
 - 2) For manholes in pavement, above the concrete ring attach a ½ inch thru 3 inch thick tapered rubber ring using two (2) 5/16 inch bead above and below the ring, of sealant type as recommended by the rubber ring manufacturer.
 - 3) For inlets in pavement, above the concrete ring attach a ½ inch thru 3 inch thick rubber ring using two (2) 5/16 inch bead above and below the ring, of sealant type as recommended by the rubber ring manufacturer. The ring shall be tapered along the flow line for at all locations excluding inlets at low points.
 - 4) The maximum amount of adjusting rings is 12 inches.
 - g. Do not enter manhole with pipe through cone section.
 - h. Pipe connections to manholes
 - 1) grout pipe in-place inside and outside the manhole with mortar or gasket providing a soil tight seal.
 - i. Precast flat top may be used in lieu of a cone section when elevation is limited.
 - j. Provide Type 1 frames and covers for each manhole unless otherwise shown on the plan details.
 - k. Inverts:
 - 1) Shall conform to the following:
 - a) Shape to the lower half diameter of the largest connecting pipe.
 - b) Slope concrete bench upward to manhole wall.
 - c) Maintain a uniform flow line slope through manhole which matches minimum pipe slope.
 - 2) Precast manholes shall be furnished with a manufacturer installed invert.
 - l. Future Sewer Connections:
 - 1) Pipe stubs shall be provided as shown on the drawings.
 - 2) Stubs shall extend a maximum of 12 inches from outer wall of structure unless

otherwise stated.

- 3) Stub shall be capped or bulkheaded and water tight.

E. Sewer Services

1. Laterals:

- a. Unless otherwise specified, terminate laterals at the property line.
- b. In the absence of grade stakes, install laterals deep enough to pick up the lowest service point.
- c. Install laterals in conformance with all plumbing codes and ordinances.
- d. Provide cleanouts required by plumbing codes and ordinances as part of the lateral installation.
- e. When a lateral is not connected for immediate use:
 - 1) Mark the location with a 4" x 4" pressure treated board installed 4 feet in the ground and 4 feet out of the ground. Storm marker shall be painted brown.
 - 2) Provide a watertight cap on the lateral end.
- f. Install sewer laterals and water service with location and separation per the details.

2. Risers:

- a. Risers shall extend from the main and be installed to maintain at least ten feet of depth on the lateral at the right-of-way or at the height shown on the plans.
- b. Bends shall be 45 degrees.
- c. Riser pipe shall be placed on a minimum of four (4) inch of bedding material.

3. Service Branches:

- a. New Sewers:
 - 1) Install a factory assembled wye branch wherever possible.
 - 2) For concrete pipe, core drill and use a flexible water tight tee connector that mechanically expands in the cored opening.
- b. Existing Sewers:
 - 1) Provide "Y" branches with a saddle type connector compatible to the pipe material being used.
 - 2) For concrete pipe, core drill and use a flexible water tight tee connector that mechanically expands in the cored opening.

F. Connecting New Pipe to Existing Pipe

1. If pipe are of the same material and size, then use a coupling of the same pipe material designed for coupling of the same material and size.
2. If pipe are of dissimilar material or size or there is no coupling made of the same material, then provide a transition coupling with a stainless steel shear ring. Provide bushings or inserts to maintain the flow line through the connection.

G. Joints

1. Construct joints in compliance with manufacturer's recommendations.
2. Utilize full length pipe except at manholes or service branches.

H. Endwalls

1. Reinforced concrete endwalls shall be connected to concrete pipe with steel bolts conforming to WisDOT Standard Specifications for Highway Construction, Latest Edition.

2. Reinforced concrete endwalls shall be connected to PVC Pipe with a band on the PVC and steel bolt on the endwall.
3. Corrugated metal endwalls and pipe shall be banded.

3.2 INSULATION FOR PIPE FROST SHIELD

- A. Provide where shown on the Drawings.
- B. Install insulation board in an inverted U around the pipe.
- C. Install insulation board with the top insulation board the same width as the trench centered over the pipe.
- D. Install the sides of the U-shape two feet high with the bottom of the legs at least to the springline of the pipe.
- E. Install the insulation board in layers to provide a minimum thickness of 4 inches or the thickness stated on the Drawings.
- F. Install such that there are no voids under the insulation.

3.3 BULKHEADS

- A. Bulkhead new construction to protect existing sewers from water, dirt, and debris.
- B. Do not remove bulkheads until new construction is accepted for use.
- C. Prior to removal of bulkhead, remove all material (liquid or solid) which accumulated behind bulkheads.

3.4 CLEANING AND REPAIRING SEWER LINES

- A. Clean as follows:
 1. All new sewer lines installed under this contract.
 2. Any existing sewer lines which are affected by construction.
- B. Furnish water and jetting equipment for cleaning operation.
- C. Repair all visible leaks and defects, whether or not the sewer lines have been subject to all required tests.
- D. Remove any stuck cleaning, inspection or testing equipment from sewer lines.

3.5 TRACER WIRE

- A. Provide for all non-metallic service laterals within public right-of-way.
- B. Lateral or branch tracer wire splice connections will be typical Western Union-type solder splice made by stripping the coating off the main run tracer wire and then tightly wrapping the branch tracer wire around the main run tracer wire a minimum of eight (8) times. Both wire splices would then be soldered with a self-flux, 50-50 rosin core solder and tightly with a 1 1/2 " wide 3.2 mm Scotchfill™ electrical insulation tape, or equivalent then coated with 3M Scotchkote™ electrical coating, or equivalent so that no copper wire is exposed. A Klein™ stripping tool shall be used to remove the plastic coating on the wire. The Contractor will be responsible to have all the correct types of tools necessary to install the tracer wire materials as specified above and to ensure that the tools are in good working order.
- C. Tracer wire will be securely attached to the mainline sewer pipe, within (6) six inches of each end of the pipe, and at equally spaced locations with a minimum spacing of (6) six feet. Any exposed copper wire will be sealed and covered with materials approved by the Engineer.
- D. Tracer wire at the end of laterals will be brought to the surface at the right-of-way perpendicular to the end of the lateral and will be inserted into a three (3) foot long piece of a one (1) inch PVC with a double slotted cap and securely attached to an eight (8) feet long, treated four by four ("4x4"). The top of the four x four will be placed such that thirty (30) inches extend above the finished grade. The one (1) inch PVC shall be placed such that eighteen (18) inches extend above the finished grade. The tracer wire at the top of the PVC will protrude out of one of the slots and back into the PVC pipe through the other slot with at least eighteen inches of slack.
- E. Tracer wire at the end of laterals on storm sewer replacements with connections to existing laterals shall be as follows:
 - 1. Wrapped around the curb stop.
 - 2. If the lateral is not located near the curb stop provide a 1/2 -inch diameter by 4 foot long rod to connect the tracer wire at the connection to the existing lateral.

3.6 FIELD QUALITY CONTROL

- A. Provide the following service in accordance with the section on Testing and Inspection of Pipeline Construction.
 - 1. Televiser all storm sewers.
 - 2. Perform a deflection test on all mains that are not reinforced concrete.
 - 3. Perform a continuity test on all tracer wire.

END OF SECTION



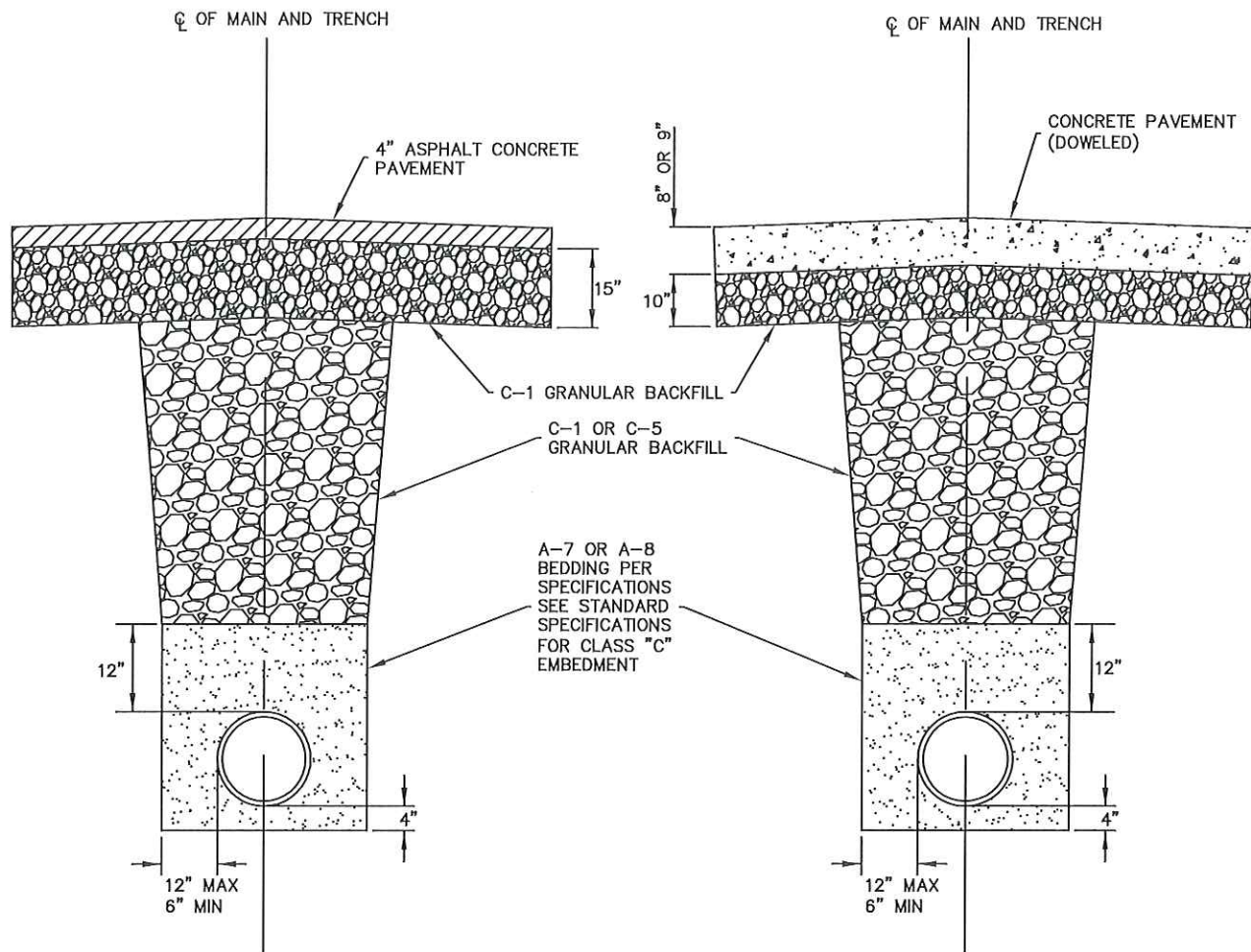
DEPARTMENT OF PUBLIC WORKS

STANDARD DETAILS

DECEMBER 11, 2017

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ASPHALT PAVEMENT BACKFILL

CONCRETE PAVEMENT BACKFILL

NOTES:

1. SIDE SLOPE BELOW ELEVATION ON FOOT ABOVE OF PIPE SHALL BE VERTICAL.
2. BACKFILL TO ONE FOOT ABOVE THE TOP OF THE PIPE SHALL BE TAMPED UNDER AND AROUND THE PIPE.



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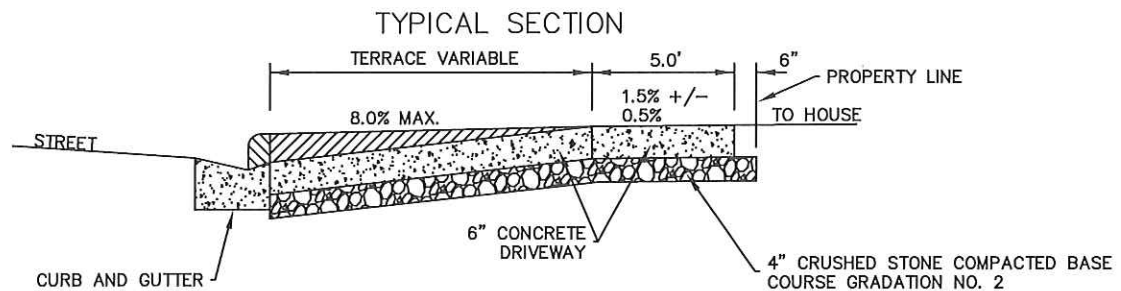
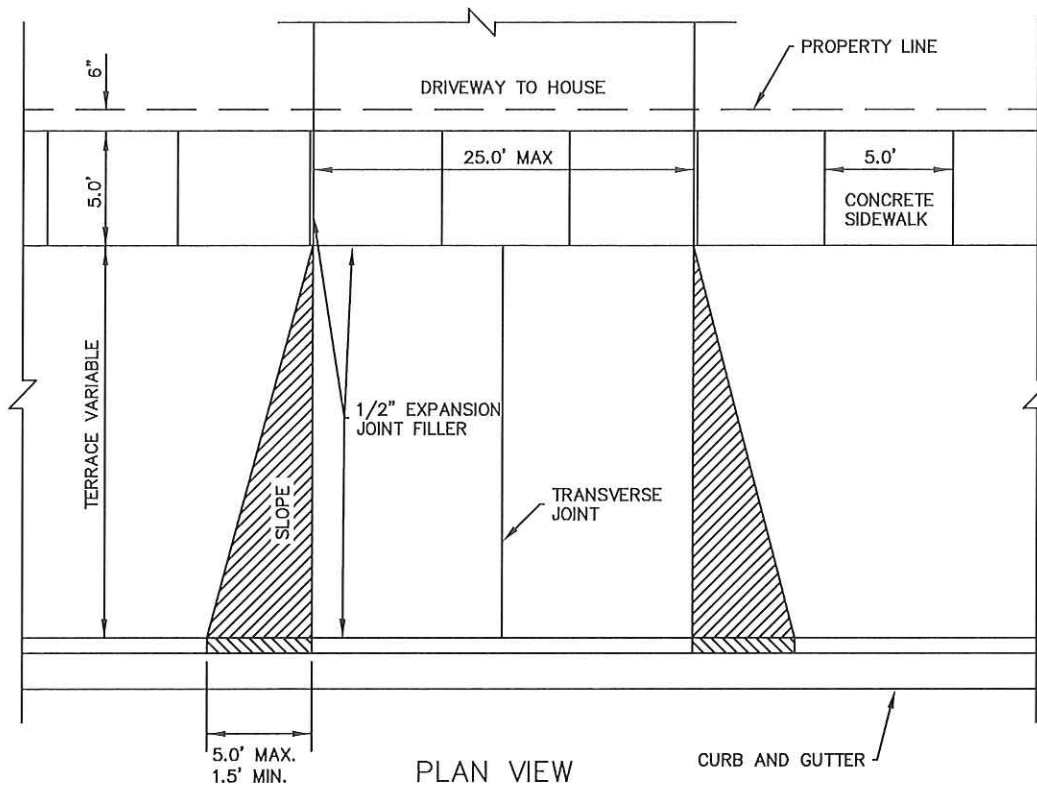
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 BACKFILLING

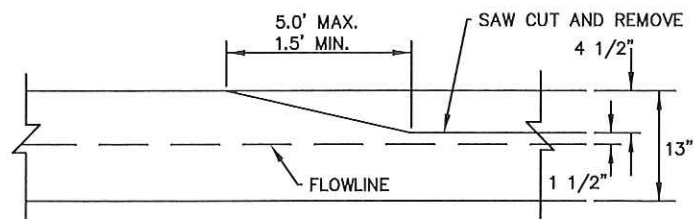
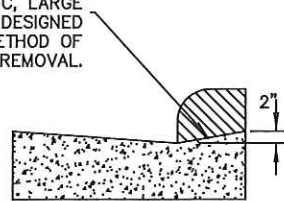
DIVISION: 31

DRAWING NO:
 TB-1

DATE: 4/2016
 BY: SRL
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ALL CURB CUTS WILL BE MADE BY A RAIL MOUNTED, HYDRAULICALLY CONTROLLED OR HIGH CYCLE ELECTRIC, LARGE DIAMETER CONCRETE SAW DESIGNED SPECIFICALLY FOR THIS METHOD OF THE CURB HEAD REMOVAL.



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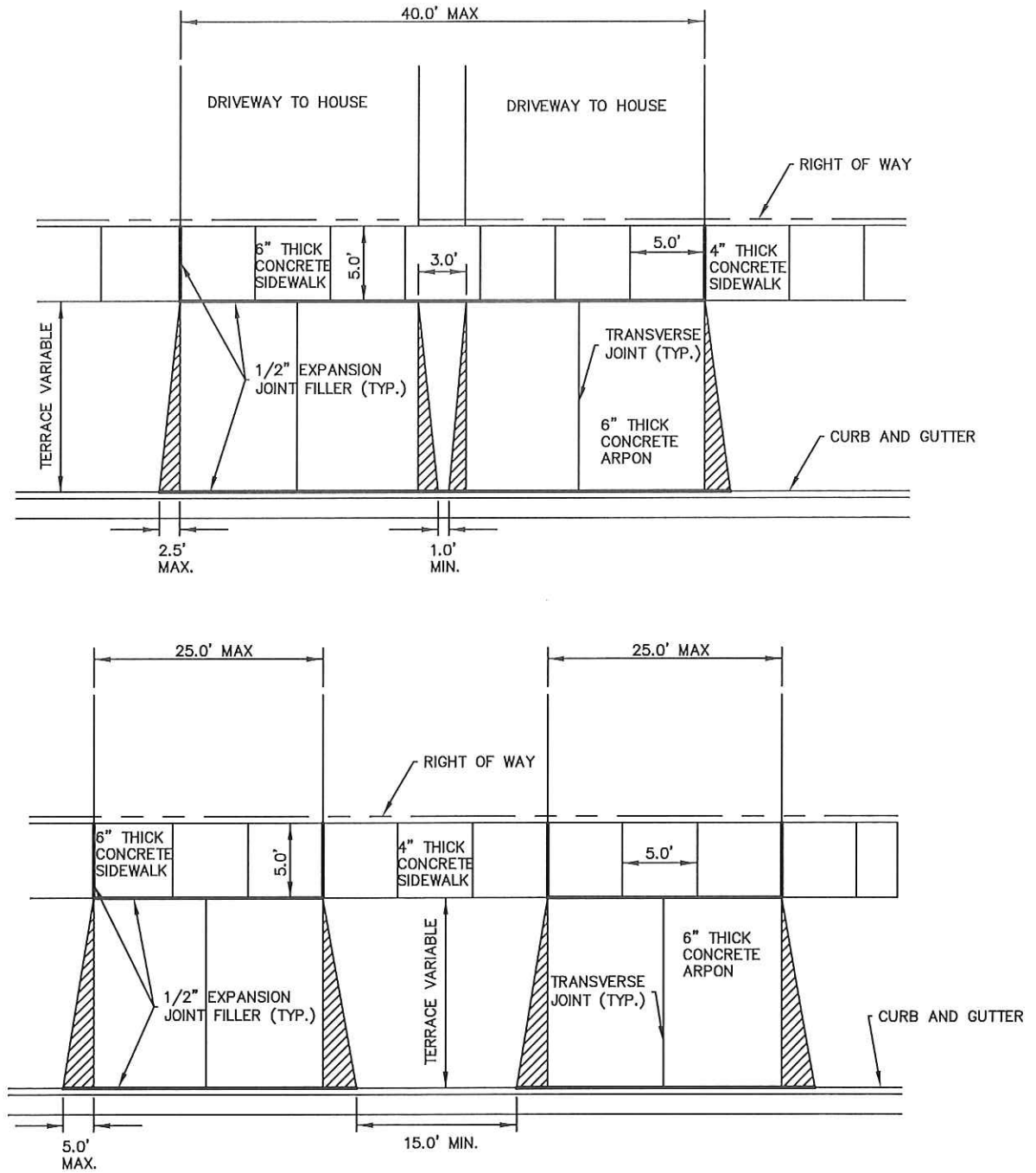
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TITLE:
CONCRETE DRIVEWAYS

DIVISION: 32

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C-1

DATE: 4/2016
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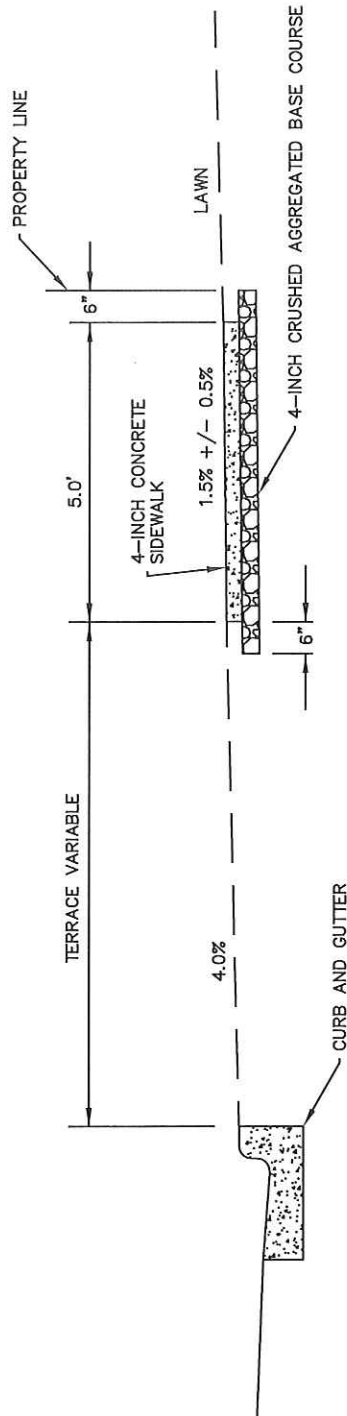
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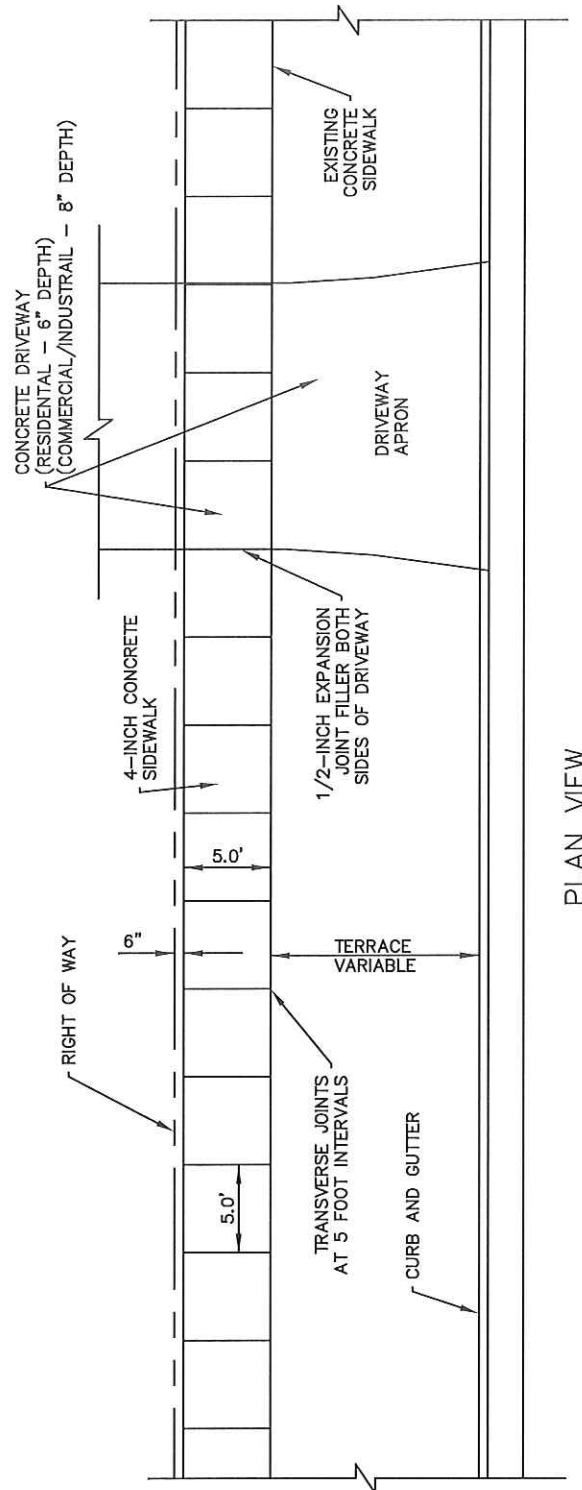
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DATE: 4/2016
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TYPICAL SECTION



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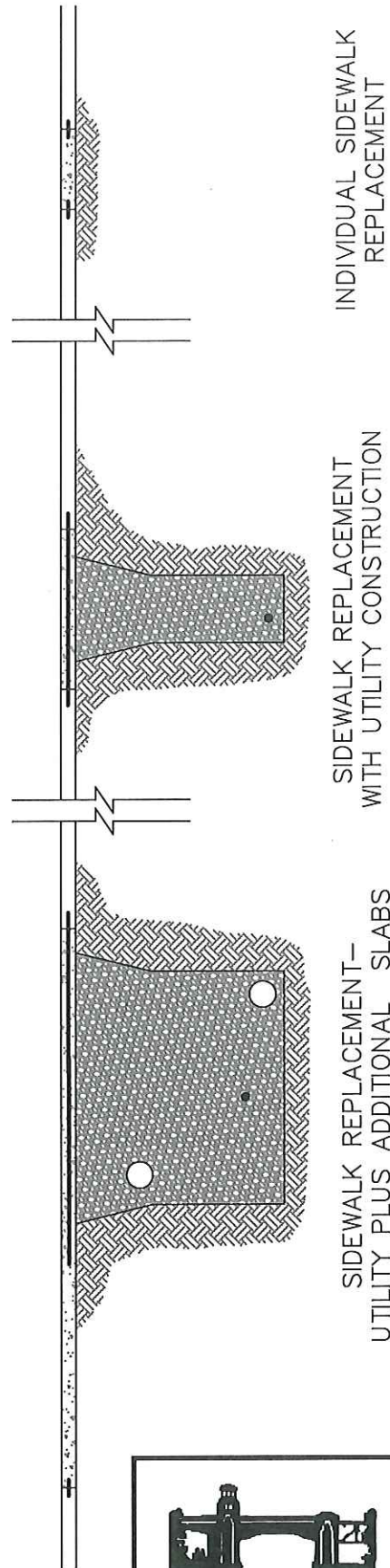
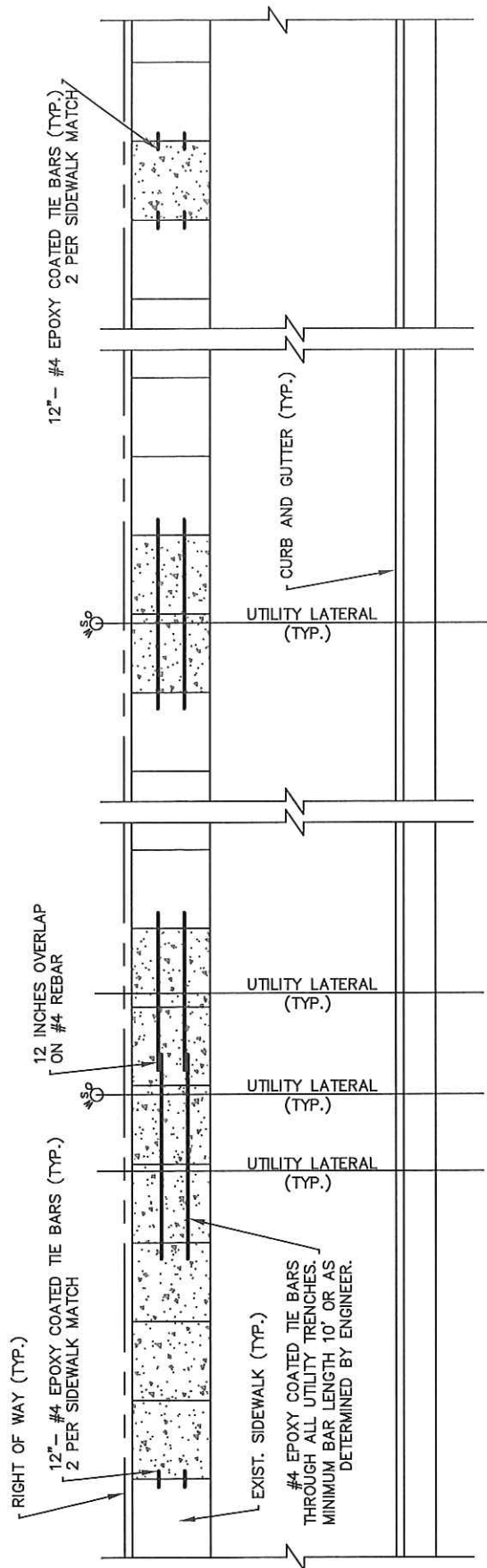
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TITLE:
CONCRETE SIDEWALKS
AND DRIVEWAY

DIVISION: 32

DRAWING NO:
C-3

DATE: 4/2016
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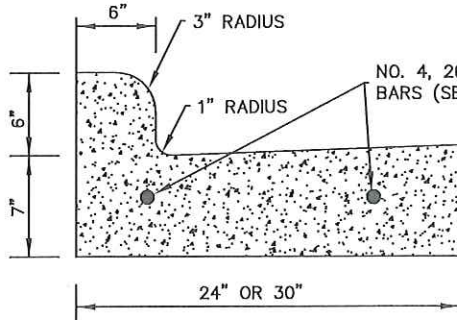
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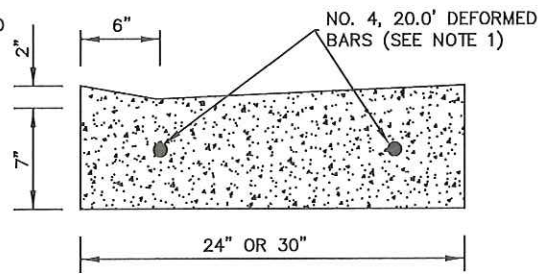
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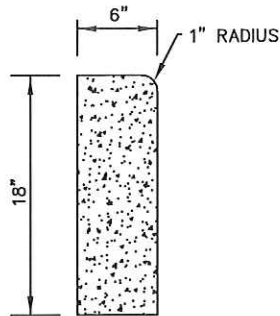
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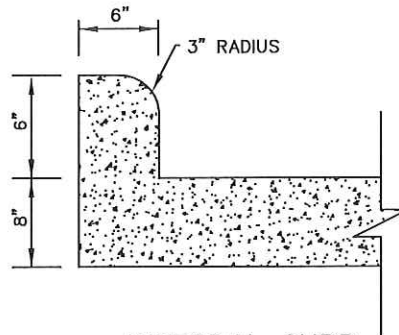
CURB AND GUTTER



GUTTER



CURB



INTEGRAL CURB

NOTES:

1. 2-NO. 4, 20.0' DEFORMED BARS SHALL BE INSTALLED CENTERED OVER EACH SERVICE AND UTILITY TRENCH OR AS DIRECTED BY THE ENGINEER. FOR TRENCHES LYING UNDER THE CURB AND RUNNING PARALLEL TO THE CURB THE BARS SHALL BE INSTALLED FULL LENGTH OF THE TRENCH.
2. ALL EXPOSED EDGES OF THE CONCRETE SHALL BE FINISHED WITH AN EDGING TOOL HAVING A RADIUS OF 1/4 INCH UNLESS OTHERWISE NOTED.



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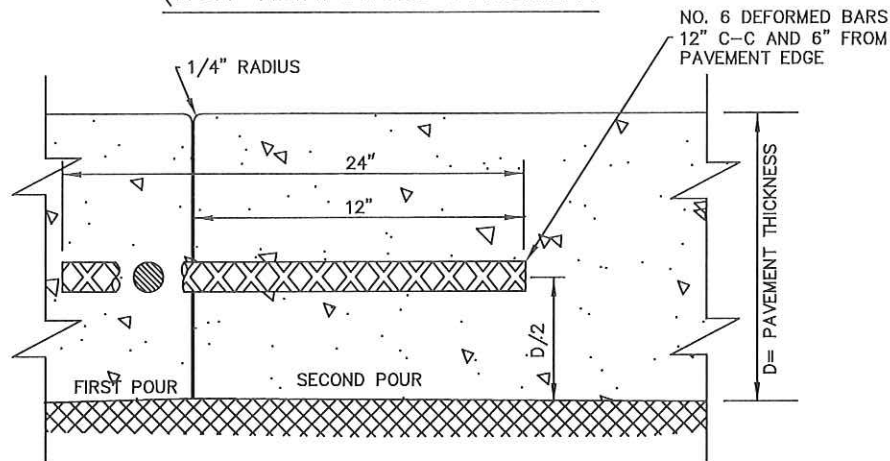
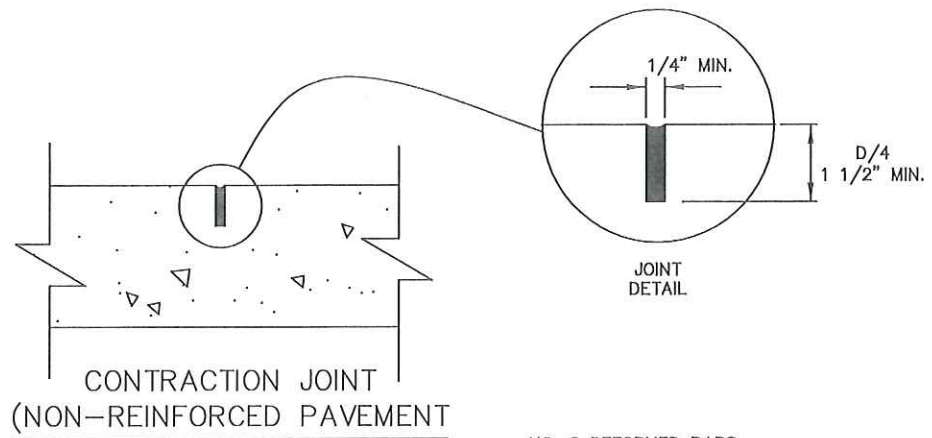
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TITLE:
CONCRETE CURB
CURB AND GUTTER
AND GUTTER

DIVISION: 32

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C-5

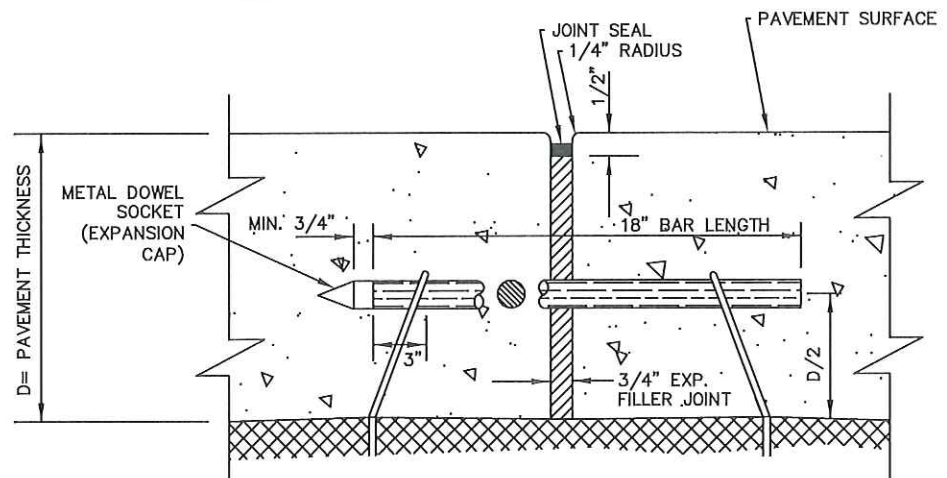
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CONSTRUCTION JOINT

PAVEMENT DEPTH, DOWEL BAR SIZE
AND JOINT SACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5 1/2", 6", 6 1/2"	NONE	12"
7", 7 1/2"	1"	14"
8", 8 1/2"	1 1/4"	15"
9", 9 1/2"	1 1/4"	15"
10" & ABOVE	1 1/2"	15"



EXPANSION JOINT

NOTES:

- ALL TIE BARS, PAVEMENT TIES AND DOWELS SHALL BE EPOXY COATED.
- RIGID BASKET ASSEMBLY FOR EXPANSION JOINT MUST HOLD DOWELS IN PERFECT ALIGNMENT.



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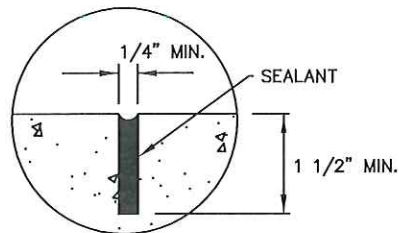
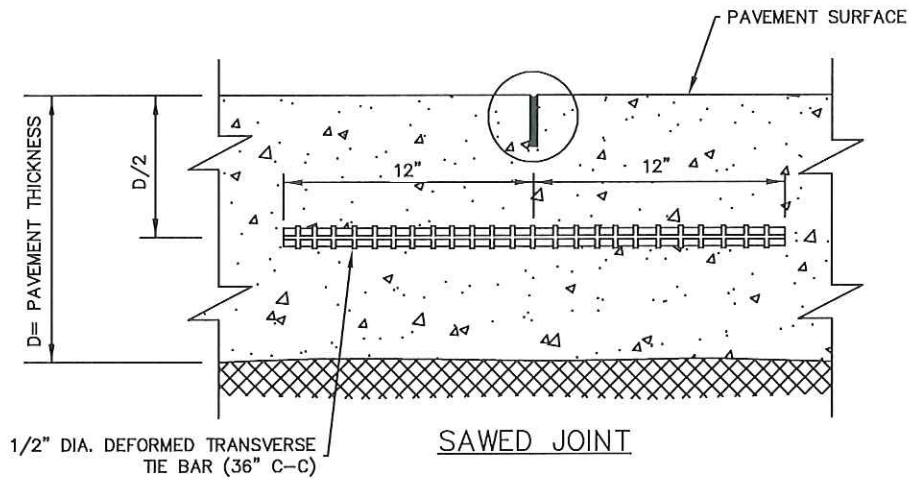
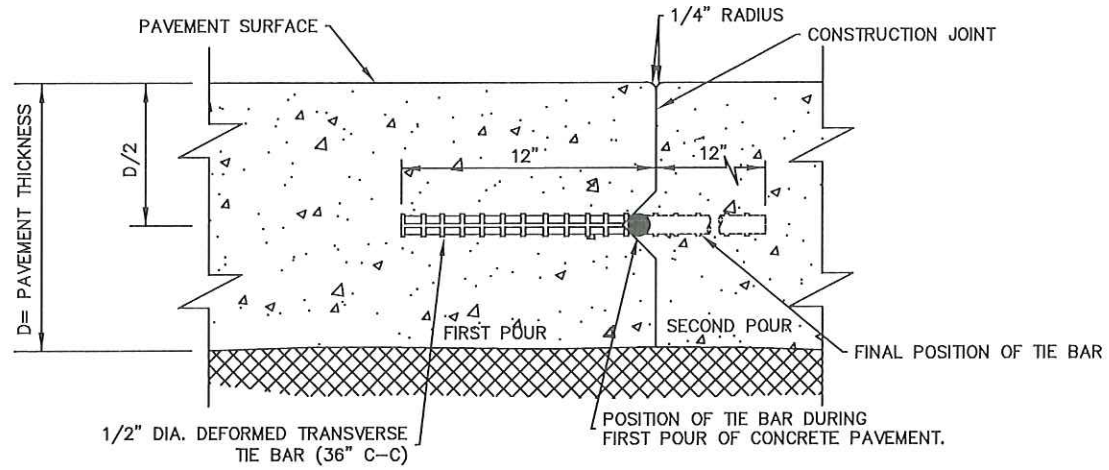
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TITLE:
TRANSVERSE
JOINTS

DIVISION: 32

DRAWING NO:
C-6

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CONTRACTION JOINT

NOTE:

1. ALL TIE BARS, PAVEMENT TIES AND DOWELS SHALL BE EPOXY COATED.



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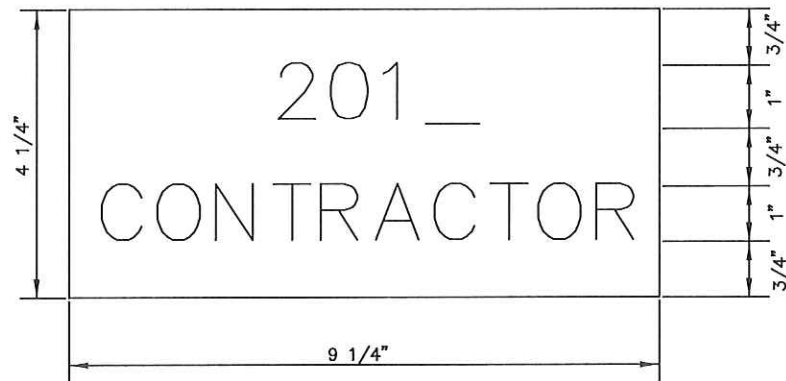
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TITLE:
LONGITUDINAL
JOINTS

DIVISION: 32

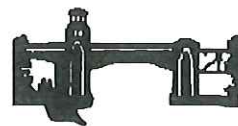
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C-7

DATE: 4/2016
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NOTE:

1. THE ENDS OF ALL CONCRETE WORK SHALL BE MARKED WITH A STAMP AS SHOWN, WITH THE CURRENT YEAR.
2. THE DATE OF CONSTRUCTION SHALL BE STAMPED ON ALL CONCRETE PAVEMENTS AND ALLEYS WITH 1-INCH NUMERALS AT THE ENDS OF EACH SECTION PAVED.



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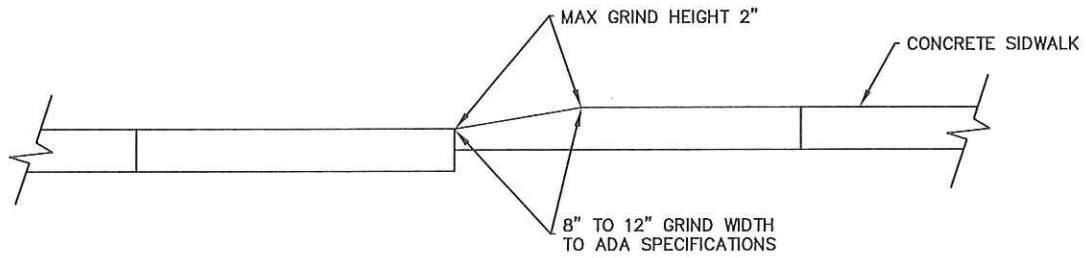
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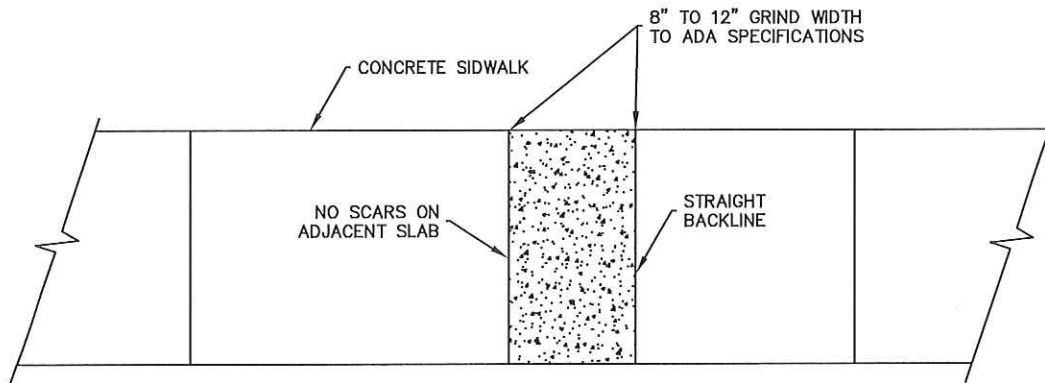
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C-8

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TYPICAL SECTION



PLAN VIEW



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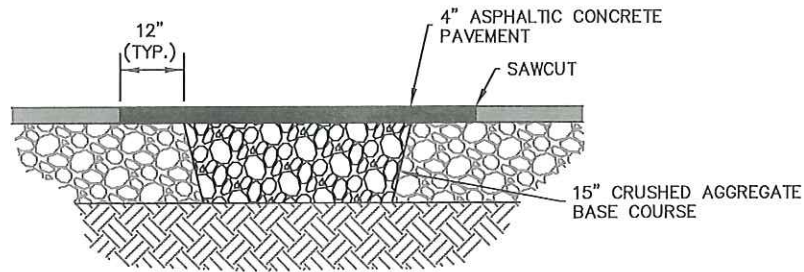
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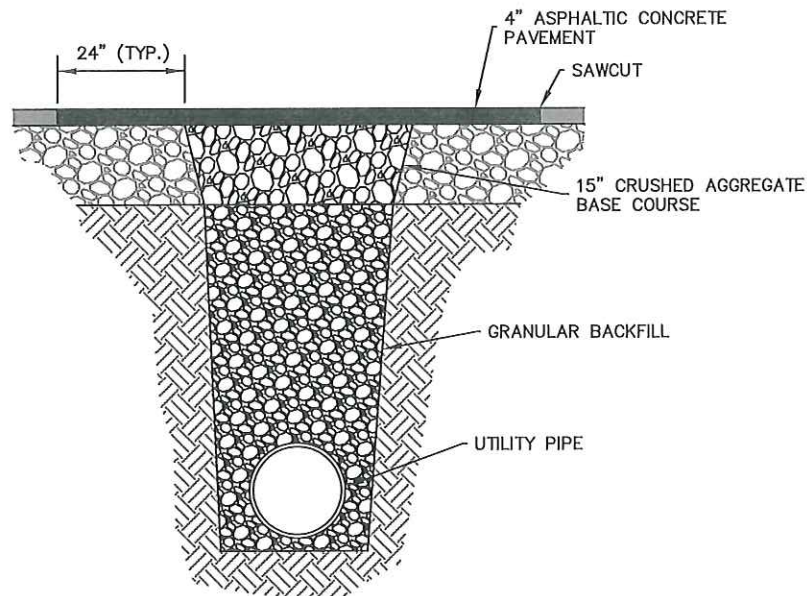
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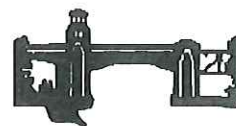
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CHECKED: EPR



WORK WITHIN ASPHALT AND AGGREGATE



EXCAVATION EXTENDS INTO THE SUBGRADE



ENGINEERING DIVISION
925 S. SIXTH ST
DE PERE, WI 54115

OFFICE 920-339-4061
FAX 920-339-4071

TITLE:
EXCAVATION IN
ASPHALT PAVEMENT

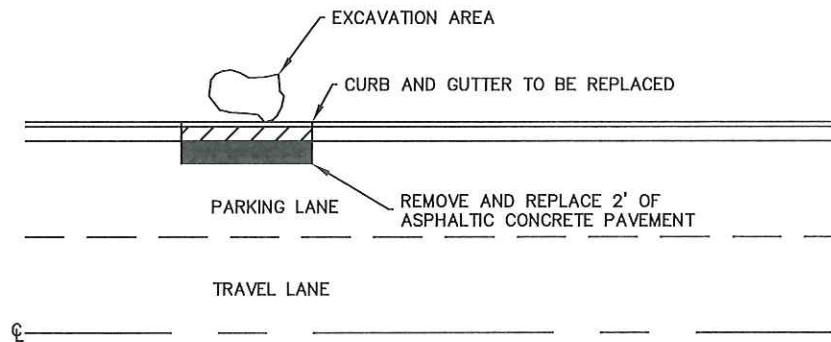
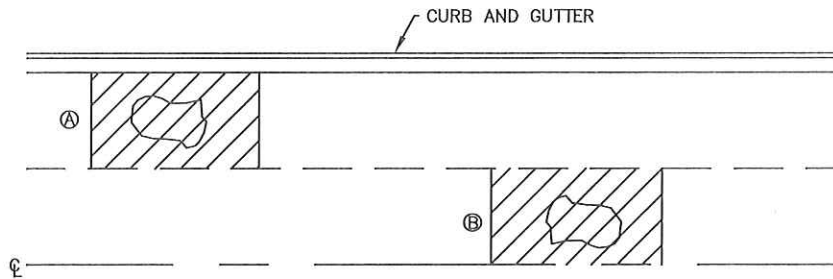
DIVISION: 32

DRAWING NO:
P-1

DATE: 4/2016
BY: SRL
CHECKED: EPR

EXCAVATION IN ASPHALT

- Ⓐ — EXCAVATION IN PARKING LANE
— REPAIR PARKING LANE
- Ⓑ — EXCAVATION IN TRAVEL LANE
— REPAIR TRAVEL LANE



CURB AND GUTTER REMOVAL ON ASPHALTIC CONCRETE PAVEMENT

NOTE:

- IF EXCAVATION OCCURS BEHIND THE CURB AND GUTTER AND INVOLVES CURB AND GUTTER REMOVAL AND REPLACEMENT, A TWO (2) FEET WIDE STRIP OF ASPHALT CONCRETE PAVEMENT SHALL BE REMOVED AND REPLACED.



ENGINEERING DIVISION
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DE PERE, WI 54115

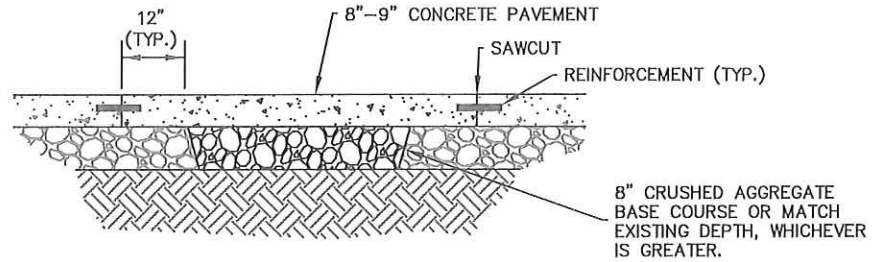
OFFICE 920-339-4061
FAX 920-339-4071

TITLE:
PATCH WORK IN
ASPHALT PAVEMENT

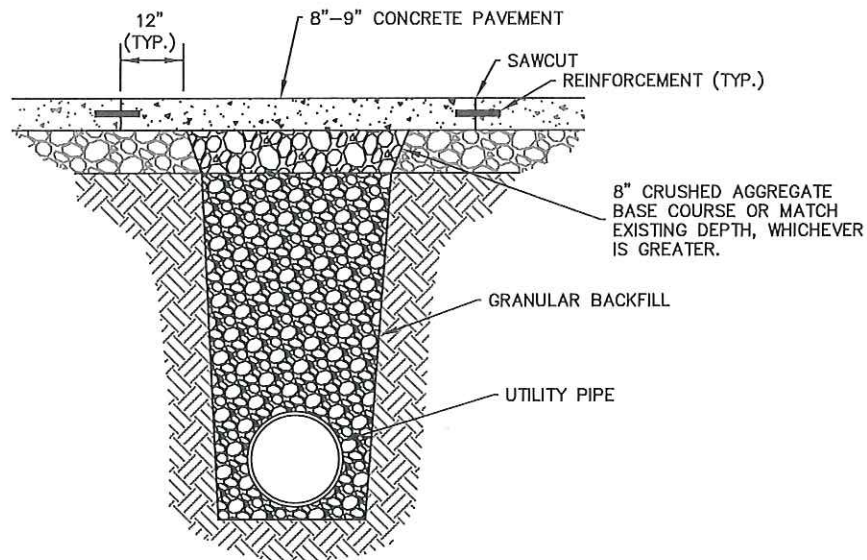
DIVISION: 32

DRAWING NO:
P-2

DATE: 4/2016
BY: SRL
CHECKED: EPR



WORK WITHIN CONCRETE AND AGGREGATE



EXCAVATION EXTENDS INTO THE SUBGRADE



ENGINEERING DIVISION
925 S. SIXTH ST
DE PERE, WI 54115

OFFICE 920-339-4061
FAX 920-339-4071

TITLE:
EXCAVATION IN
CONCRETE PAVEMENT

DIVISION: 32

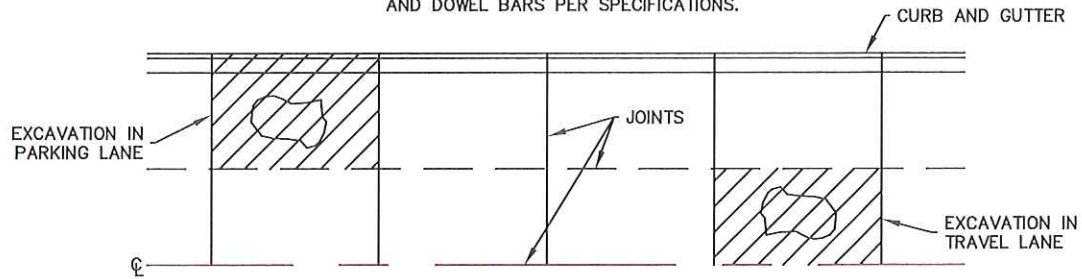
DRAWING NO:
P-3

DATE: 4/2016
BY: SRL
CHECKED: EPR

EXCAVATION ON CONCRETE STREETS LESS THAN 15 YEARS

NOTE:

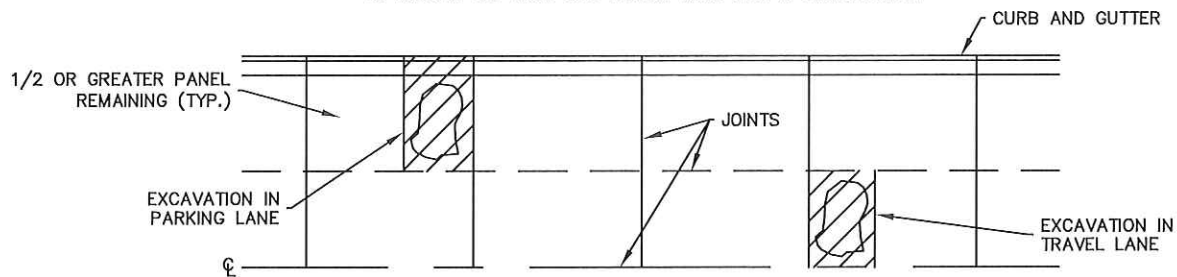
1. REPAIR TO A JOINT LINE. INSTALL TIE BARS AND DOWEL BARS PER SPECIFICATIONS.



EXCAVATION ON CONCRETE STREETS GREATER THAN 15 YEARS

NOTES:

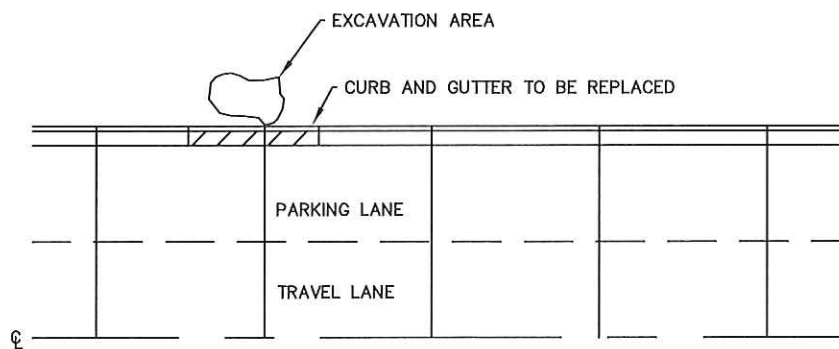
1. CONTRACTOR TO REMOVE TO THE JOINT IF REMAINDER OF PANEL IS CRACKED.
2. CONTRACTOR TO SAWCUT 12 INCHES BEYOND TRENCH WALL OR DAMAGED CONCRETE. MINIMUM PATCH MUST BE 7 FEET.
3. INSTALL TIE BARS AND DOWEL BARS PER SPECIFICATIONS.



CURB AND GUTTER REMOVAL ON ASPHALTIC CONCRETE PAVEMENT

NOTE:

1. IF EXCAVATION OCCURS BEHIND THE CURB AND GUTTER AND INVOLVES CURB AND GUTTER REMOVAL AND REPLACEMENT, INSTALL TIE BARS PER SPECIFICATIONS.



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OFFICE 920-339-4061
FAX 920-339-4071

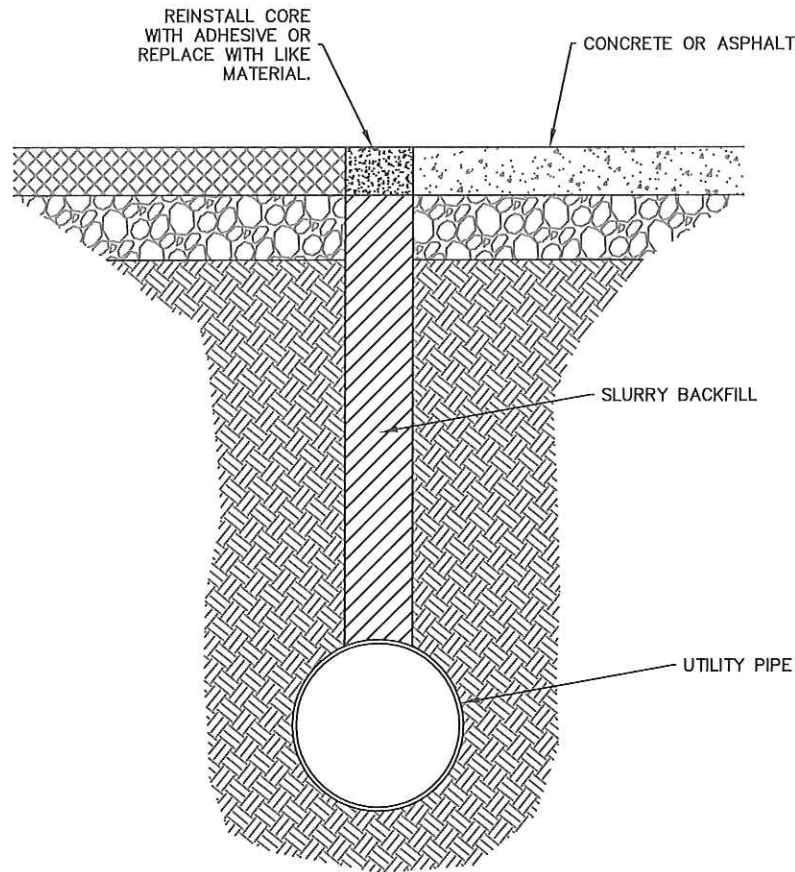
TITLE:
PATCH WORK IN
CONCRETE PAVEMENT

DIVISION: 32

DRAWING NO:
P-4

DATE: 4/2016
BY: SRL
CHECKED: EPR

CORING OR BORE HOLE REPLACEMENT DETAIL



NOTE:

1. IF CORE IS TO BE REPLACED, IT SHALL BE INSTALLED IMMEDIATELY AFTER PLACEMENT OF THE SLURRY. IT SHALL BE FLUSH WITH THE ADJACENT PAVEMENT.



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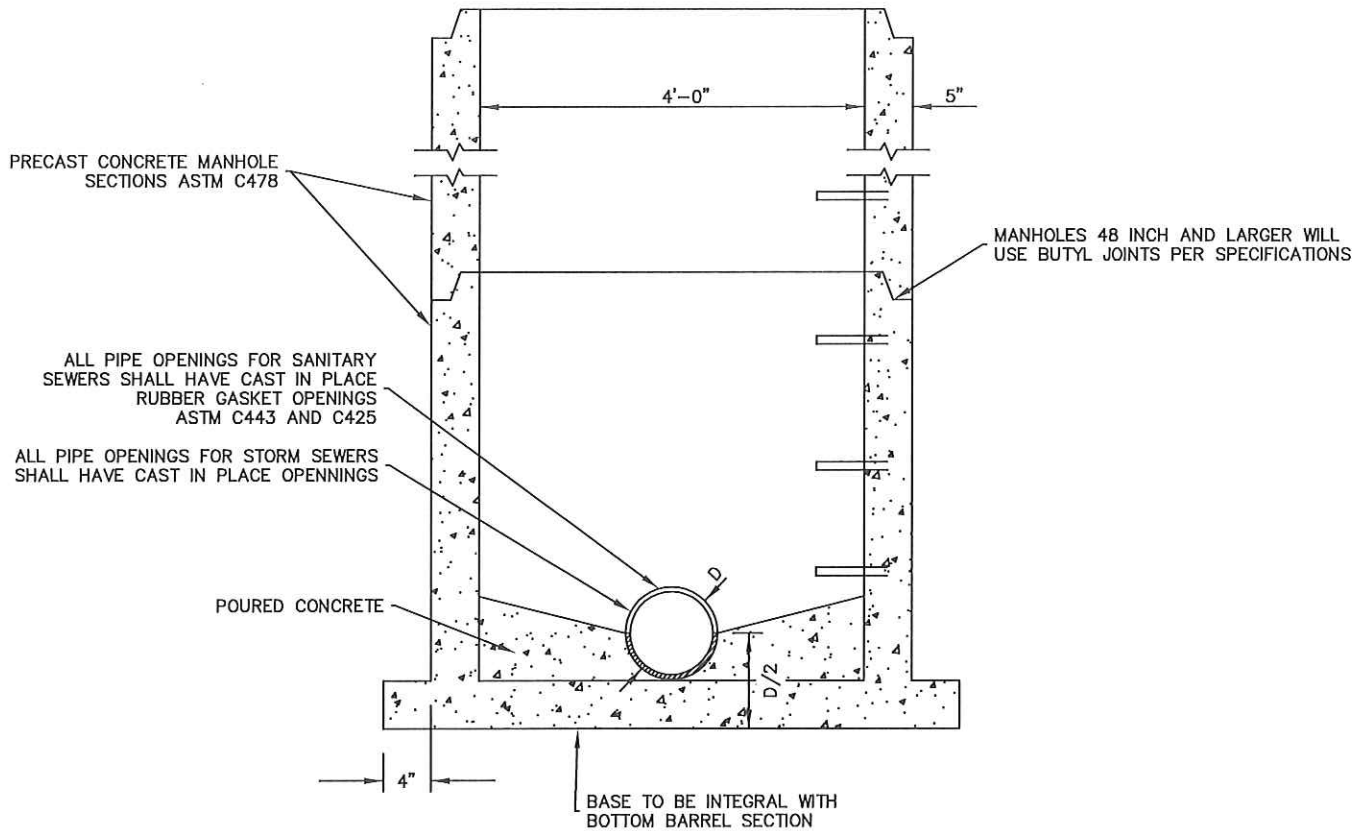
OFFICE 920-339-4061
FAX 920-339-4071

TITLE:
CORE OR BORE HOLE
REPLACEMENT DETAIL
IN CONCRETE OR
ASPHALT

DIVISION: 32

DRAWING NO:
P-5

DATE: 4/2016
BY: SRL
CHECKED: EPR



ENGINEERING DIVISION
925 S. SIXTH ST
DE PERE, WI 54115

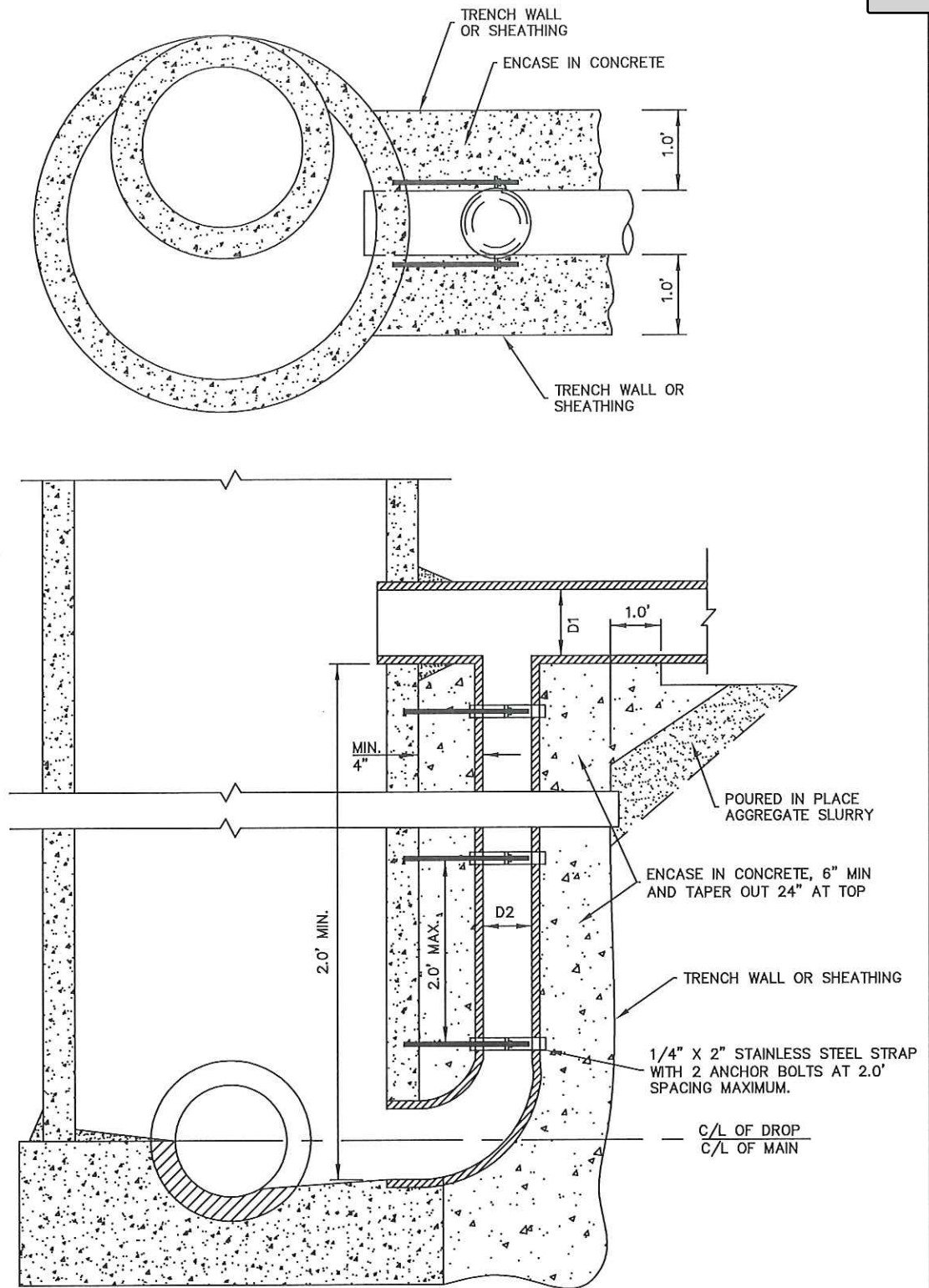
OFFICE 920-339-4061
FAX 920-339-4071

TITLE:
PRECAST CONCRETE
MANHOLE

DIVISION: 33

DRAWING NO:
S-1

DATE: 4/2016
BY: SRL
CHECKED: EPR



PIPE SCHEDULE OUTSIDE DROP MANHOLE	
LATERAL D1	DROP PIPE D2
24	18
21	15
18	12
15	10
12	10
10	8
8	8



ENGINEERING DIVISION
925 S. SIXTH ST
DE PERE, WI 54115

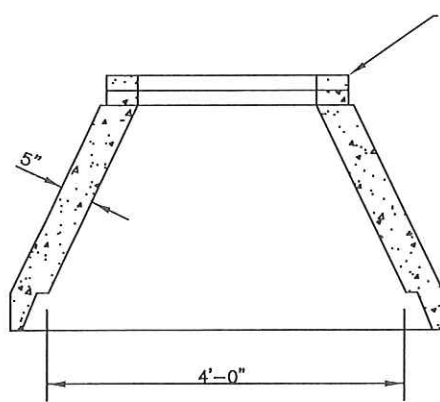
OFFICE 920-339-4061
FAX 920-339-4071

TITLE:
OUTSIDE DROP
MANHOLE

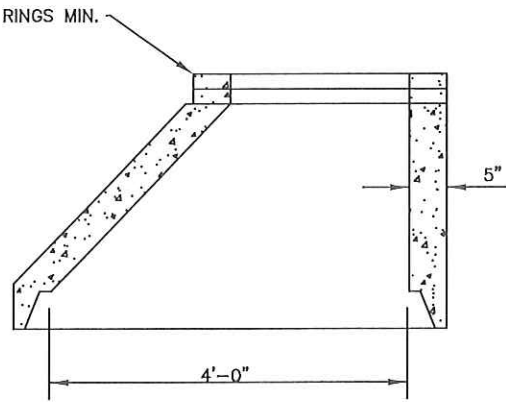
DIVISION: 33

DRAWING NO:
S-2

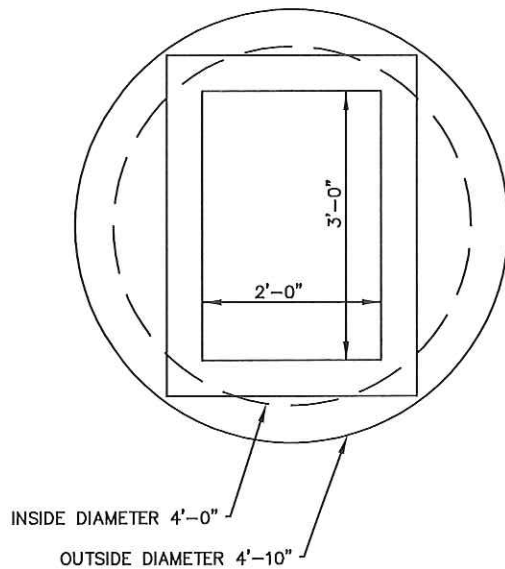
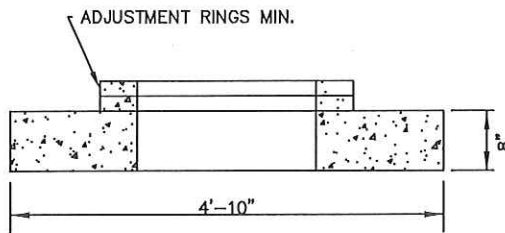
DATE: 4/2016
BY: SRL
CHECKED: EPR



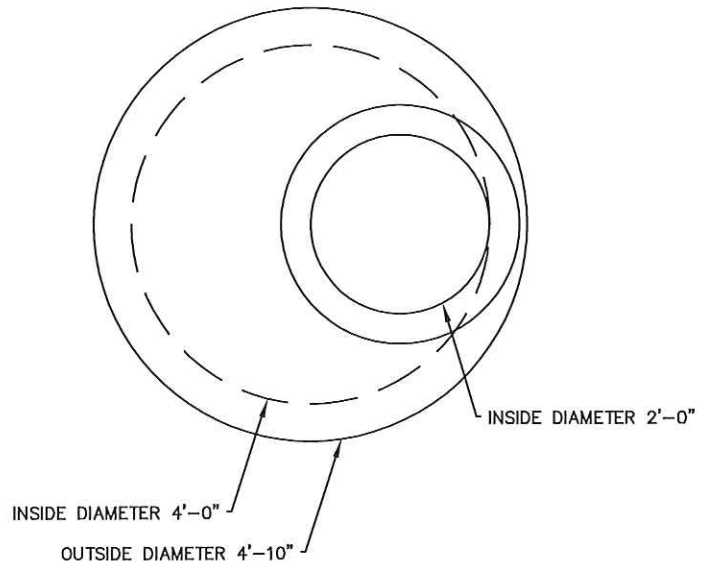
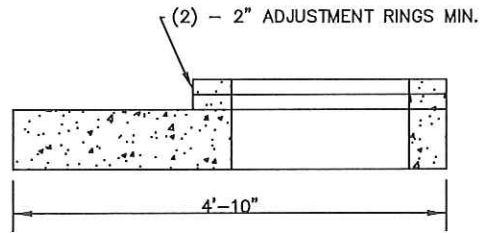
CONCENTRIC CONE
WHERE DIRECTED BY ENGINEER



ECCEMTRIC CONE STANDARD



INLET MANHOLE COVER



MANHOLE COVER

NOTE:

1. THE TOP ADJUSTING RING (MINIMUM OF 2" AND MAXIMUM OF 3") ON ALL MANHOLES AND INLETS THAT FALL WITHIN THE PAVEMENT SHALL BE RUBBER RISER RINGS.



ENGINEERING DIVISION
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DE PERE, WI 54115

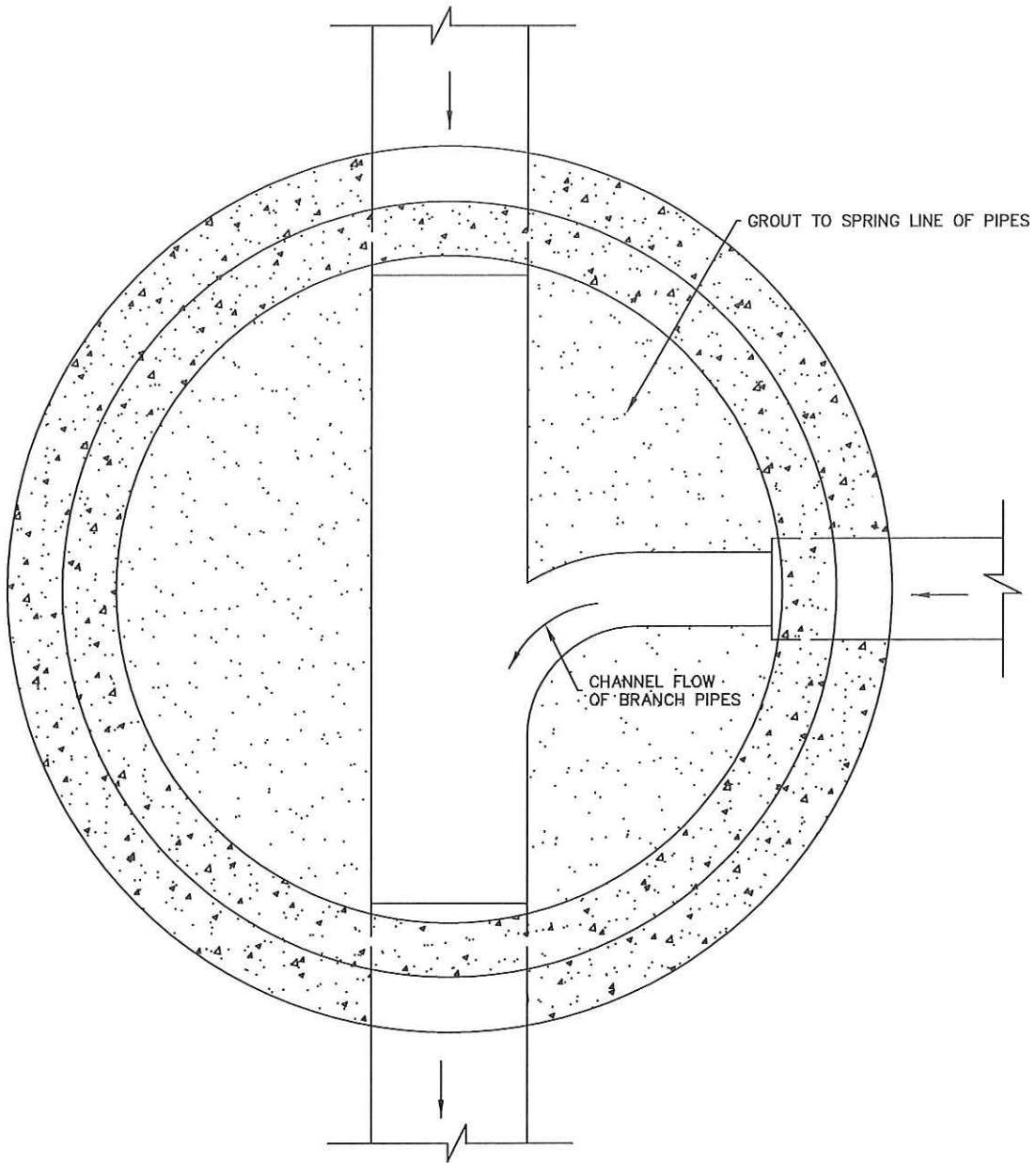
OFFICE 920-339-4061
FAX 920-339-4071

TITLE:
PRECAST CONCRETE
CONES AND COVERS
ASTM C478

DIVISION: 33

DRAWING NO:
S-3

DATE: 4/2016
BY: SRL
CHECKED: EPR



STANDARD MANHOLE



ENGINEERING DIVISION
925 S. SIXTH ST
DE PERE, WI 54115

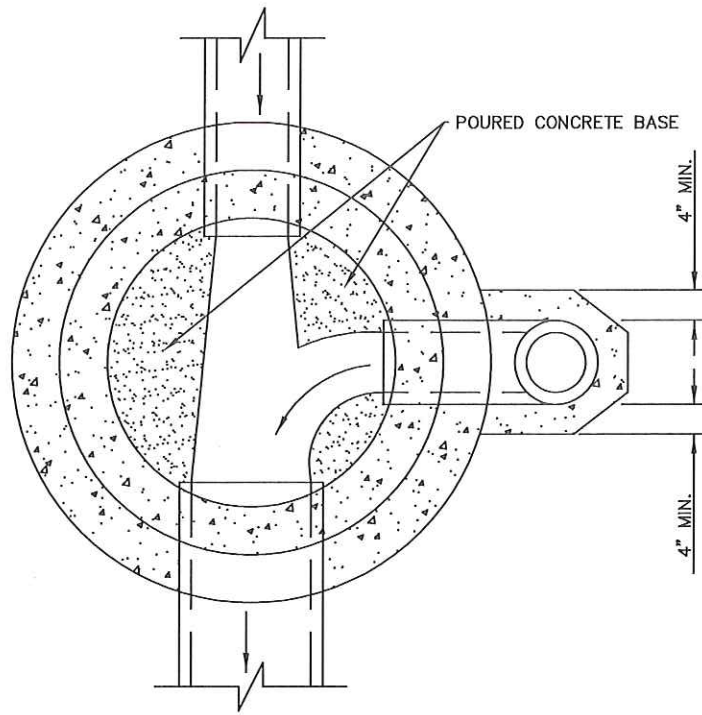
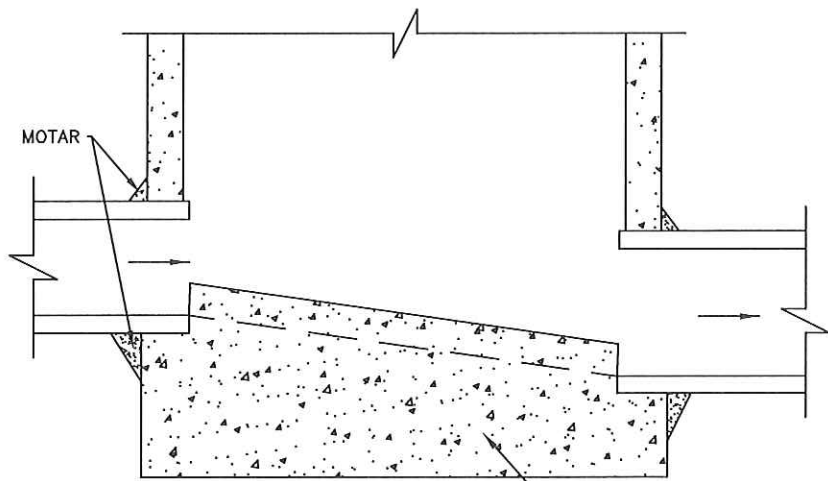
OFFICE 920-339-4061
FAX 920-339-4071

TITLE:
CHANNELIZATION

DIVISION: 33

DRAWING NO:
S-4

DATE: 4/2016
BY: SRL
CHECKED: EPR

DROP MANHOLEPIPE SIZE CHANGE

ENGINEERING DIVISION
925 S. SIXTH ST
DE PERE, WI 54115

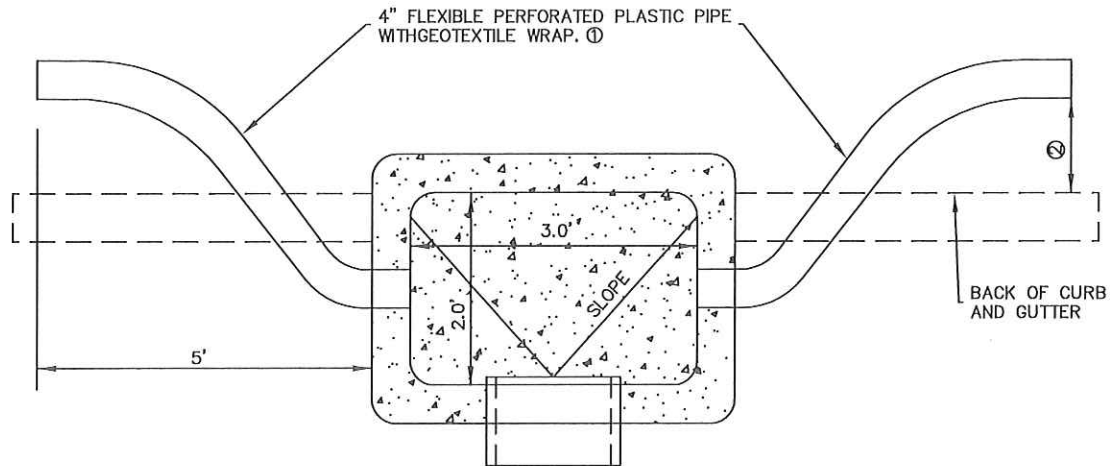
OFFICE 920-339-4061
FAX 920-339-4071

TITLE:
CHANNELIZATION

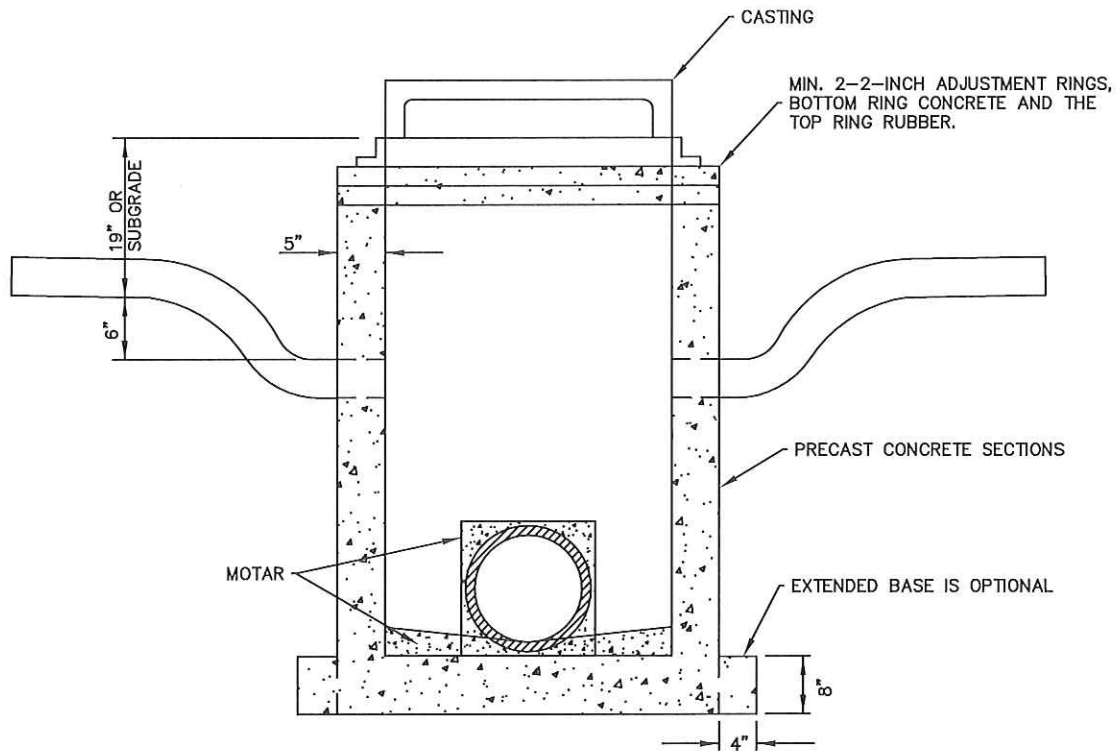
DIVISION: 33

DRAWING NO:
S-5

DATE: 4/2016
BY: SRL
CHECKED: EPR



- ① IF THERE IS LESS THEN 5' OF CURB AND GUTTER BEING REPLACED, EXTEND TO THE LIMITS OF THE CURB AND GUTTER REPLACEMENT.
- ② EDGE DRAIN TO BE LOCATED AT EDGE OF CRUSHED AGGREGATE BASE COURSE.



NOTES:

1. THE MINIMUM DEPTH OF TYPE B INLETS FROM GRATE TO BOTTOM OF BASE SHALL BE 4'-8".
2. PROVIDE INLET BARRIERS FOR NEW CONSTRUCTION.
3. TYPE B INLETS SHALL MEET ALL SPECIFICATIONS OF ASTM C478.
4. 1", 2" OR TAPERED RUBBER RINGS ARE ACCEPTABLE TO PROVIDE FOR FIELD CONDITIONS.



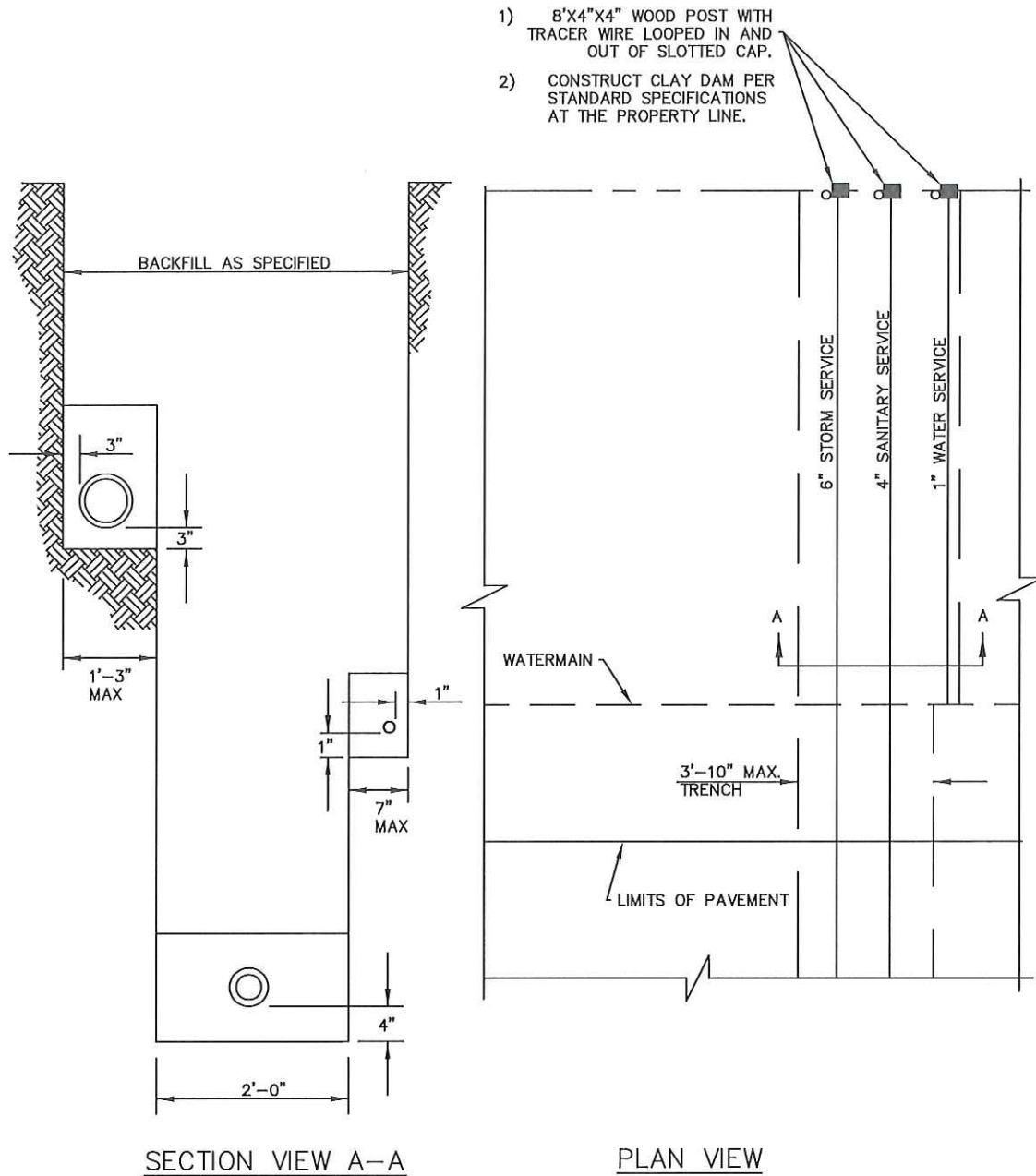
ENGINEERING DIVISION
925 S. SIXTH ST
DE PERE, WI 54115
OFFICE 920-339-4061
FAX 920-339-4071

TITLE:
TYPE B INLET

DIVISION: 33

DRAWING NO:
S-6

DATE: 4/2016
BY: SRL
CHECKED: EPR



NOTES:

1. ON A NORTH-SOUTH STREET, STORM SERVICES SHALL BE PLACED ON THE NORTH SIDE OF TRENCH.
2. ON AN EAST-WEST STREET, STORM SERVICES SHALL BE PLACED ON THE WEST SIDE OF TRENCH.
3. STORM SERVICES SHALL BE PLACED TO A DEPTH OF 4 FEET AT THE PROPERTY LINE OR AS DIRECTED.
4. SANITARY SEWER SERVICES SHALL BE A MINIMUM OF 10 FEET OR A MAXIMUM OF 11 FEET OF DEPTH AT THE PROPERTY LINE.
5. GRANULAR BACKFILL SHALL BE PLACED A MINIMUM OF 6 INCHES OVER THE SERVICES.



ENGINEERING DIVISION
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DE PERE, WI 54115

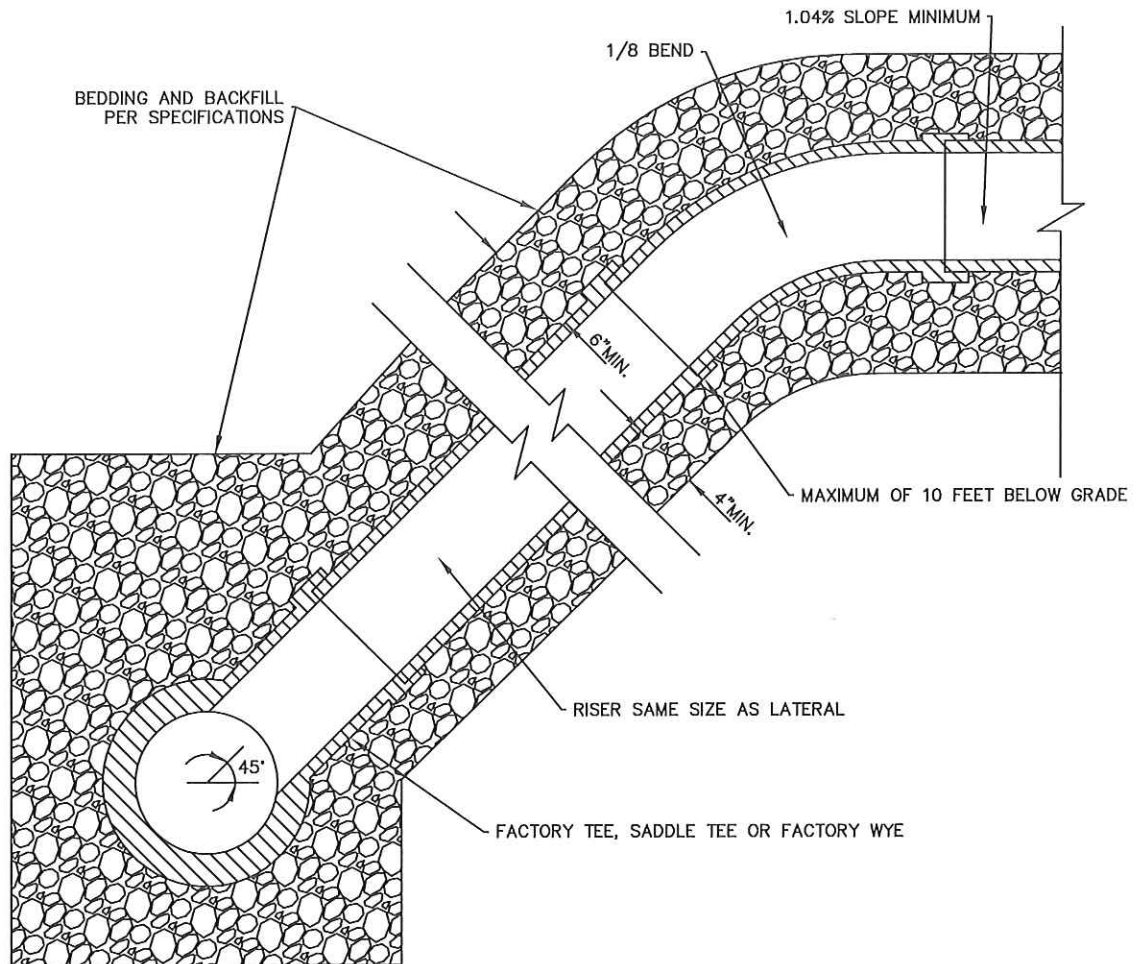
OFFICE 920-339-4061
FAX 920-339-4071

TITLE:
SANITARY, STORM
AND WATER
SERVICES

DIVISION: 33

DRAWING NO:
S-7

DATE: 4/2016
BY: SRL
CHECKED: EPR



ENGINEERING DIVISION
925 S. SIXTH ST
DE PERE, WI 54115

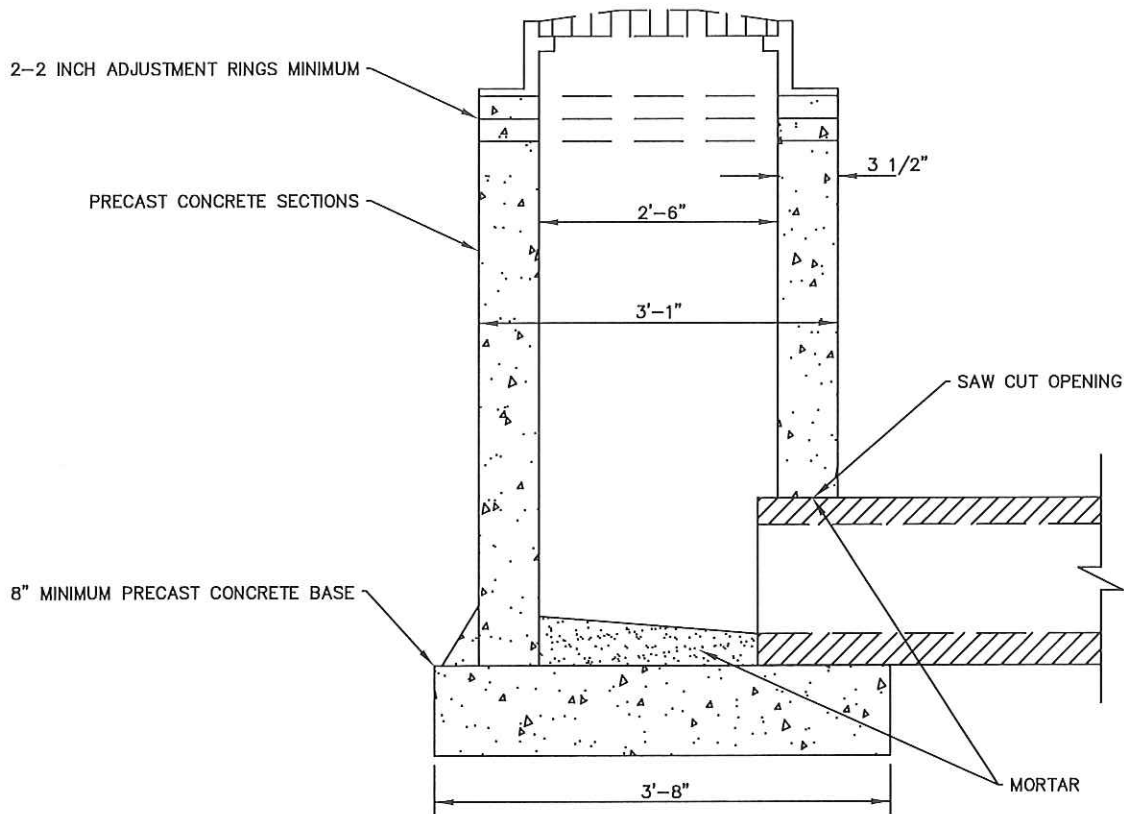
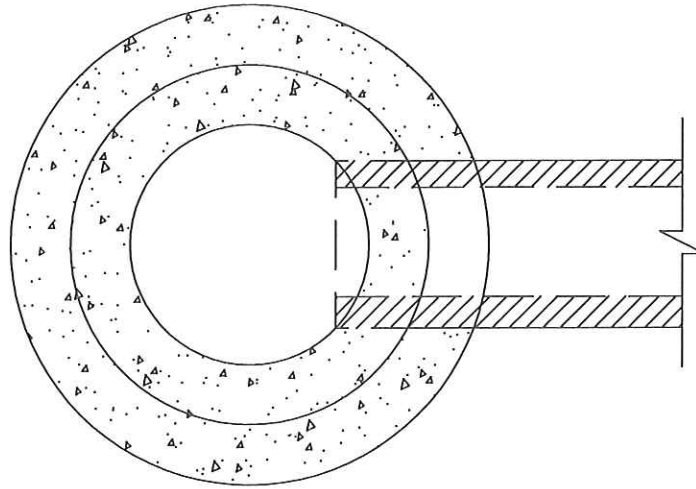
OFFICE 920-339-4061
FAX 920-339-4071

TITLE:
RISER FOR SERVICE
CONNECTIONS

DIVISION: 33

DRAWING NO:
S-8

DATE: 4/2016
BY: SRL
CHECKED: EPR



NOTE:

1. THE MINIMUM DEPTH OF FIELD INLETS FROM GRATE TO BOTTOM OF BASE SHALL BE 4'-8".



ENGINEERING DIVISION
925 S. SIXTH ST
DE PERE, WI 54115

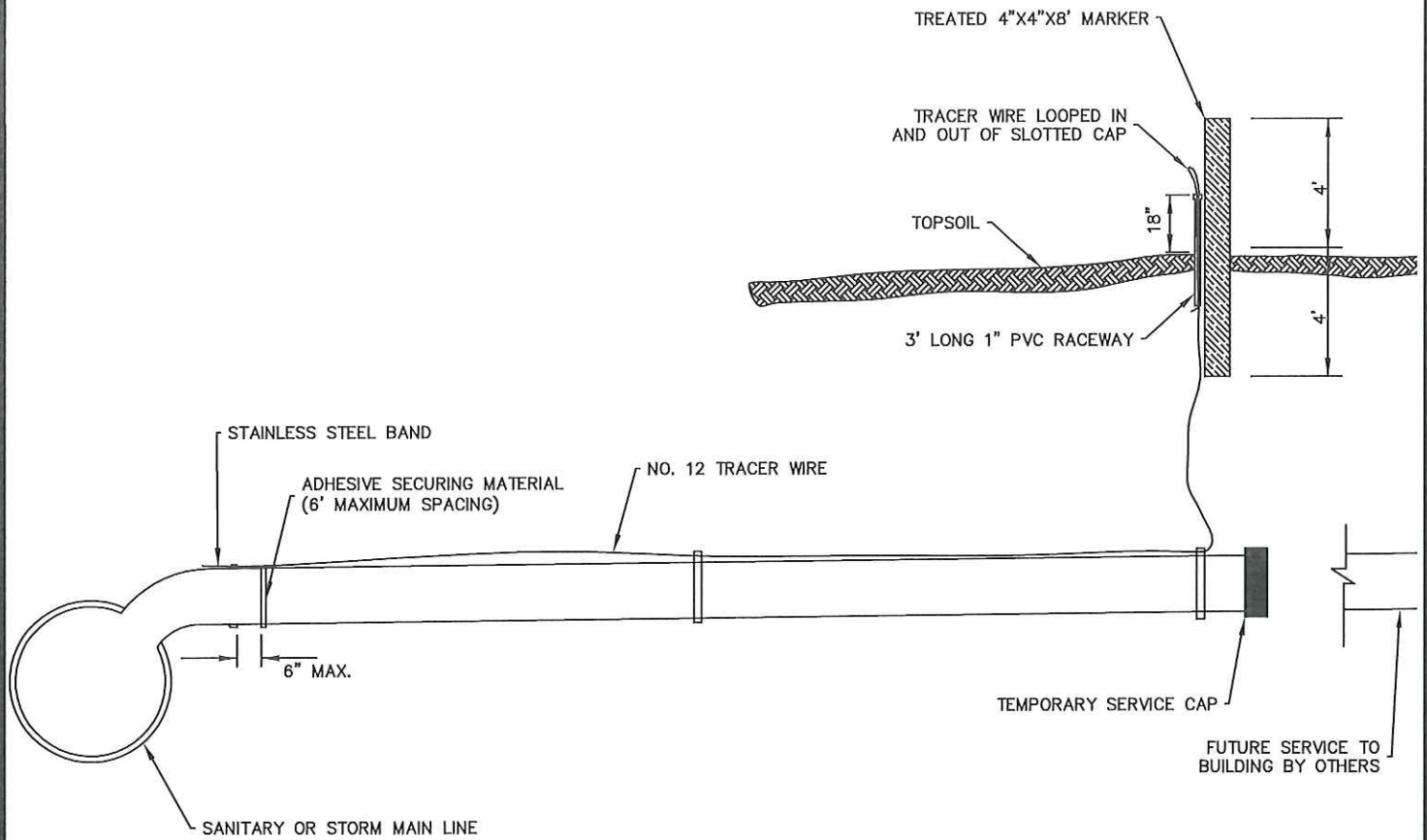
OFFICE 920-339-4061
FAX 920-339-4071

TITLE:
TYPE A FIELD INLET

DIVISION: 33

DRAWING NO:
FI-1

DATE: 4/2016
BY: SRL
CHECKED: EPR



NOTE:

1. TRACER WIRE — BROWN FOR STORM AND GREEN FOR SANITARY.



ENGINEERING DIVISION
925 S. SIXTH ST
DE PERE, WI 54115

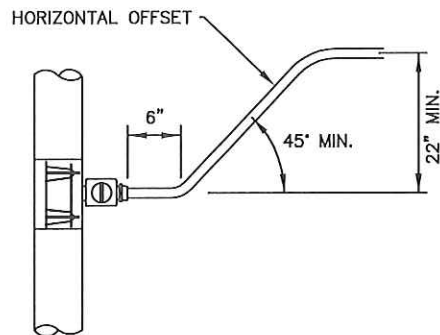
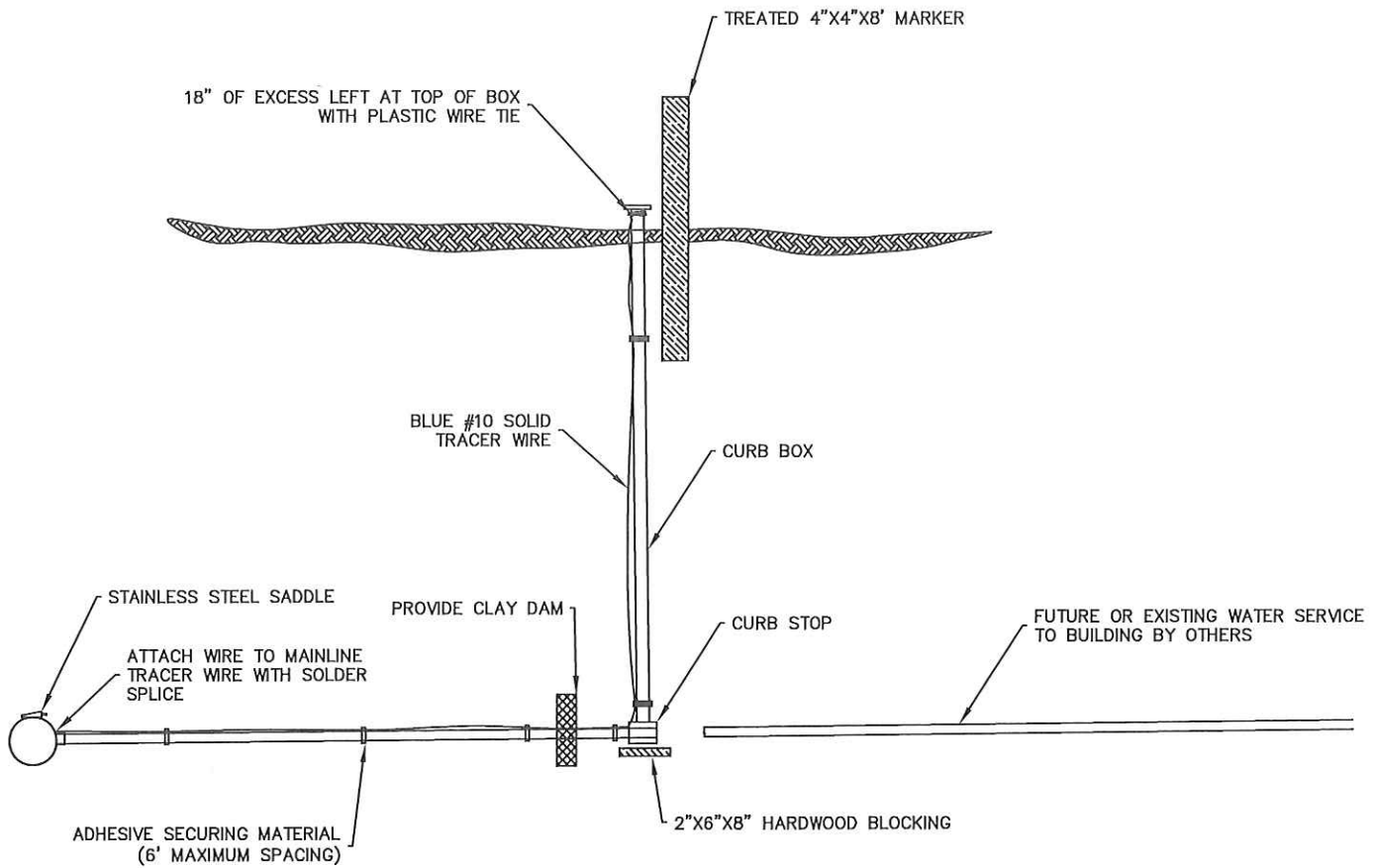
OFFICE 920-339-4061
FAX 920-339-4071

TITLE:
SEWER TRACER WIRE

DIVISION: 33

DRAWING NO:
TW-1

DATE: 4/2016
BY: SRL
CHECKED: EPR



ENGINEERING DIVISION
925 S. SIXTH ST
DE PERE, WI 54115

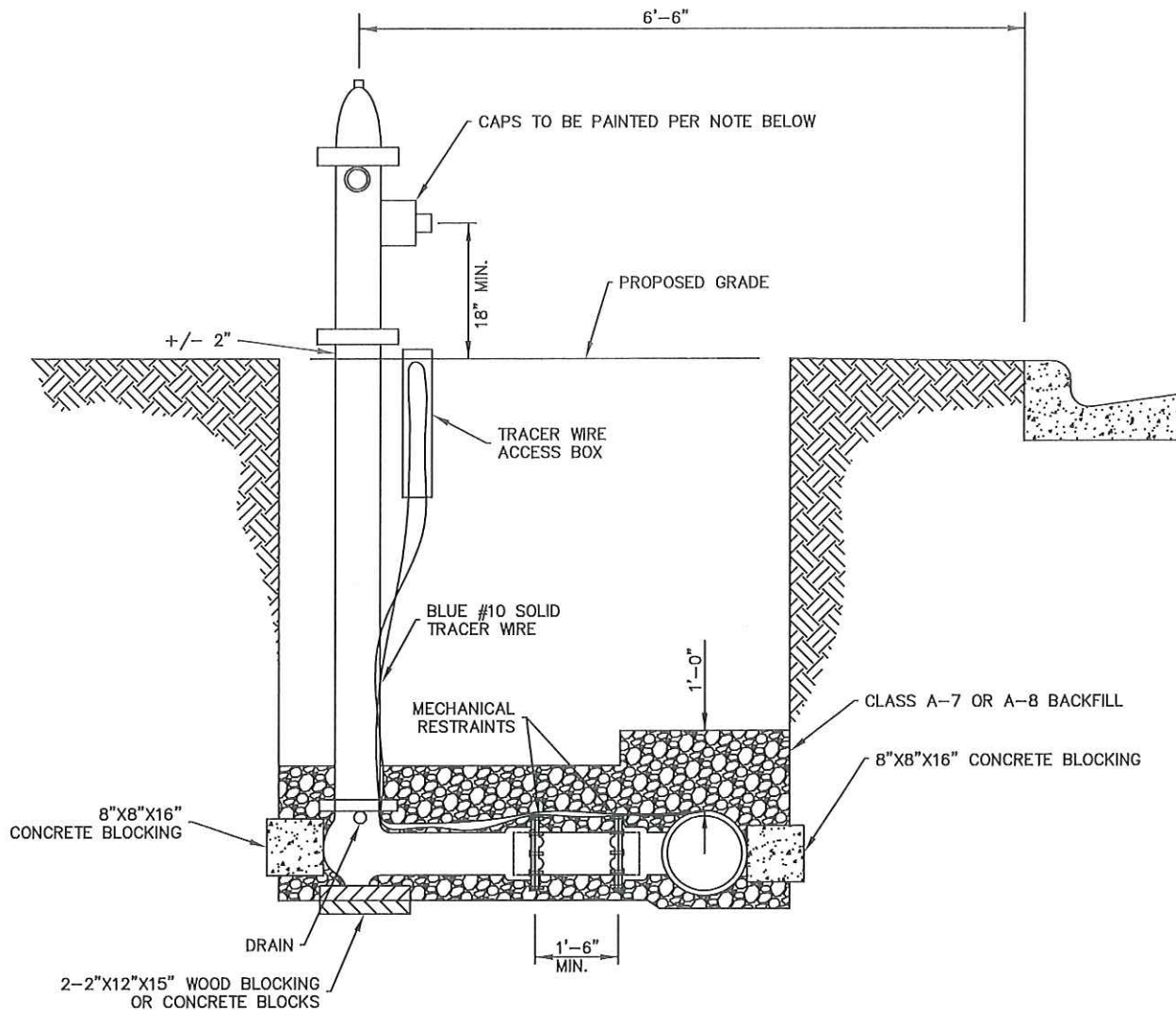
OFFICE 920-339-4061
FAX 920-339-4071

TITLE:
WATER TRACER WIRE

DIVISION: 33

DRAWING NO:
TW-2

DATE: 4/2016
BY: SRL
CHECKED: EPR



NOTES:

1. HYDRANTS SHALL BE SET VERTICAL.
2. CONCRETE BLOCKING AND WOOD BLOCKING SHALL BE INSTALLED AGAINST FIRM NATURAL GROUND AS REACTION BACKING FOR TEE AND HYDRANT SHOE.
3. REGARDLESS OF DEPTH OF MAIN, THE BREAKAWAY FLANGE MUST BE +/- 2 INCHES ABOVE THE PROPOSED GRADE.
4. ALL HYDRANTS SHALL BE CLEANED AND REPAINTED TO ELIMINATE ANY SCRATCHED AND SURFACE IMPERFECTIONS. THIS SHALL BE ACCOMPLISHED AFTER THE HYDRANT HAS BEEN INSTALLED, BACKFILLED AND TESTED.
5. ENCASE ENTIRE HYDRANT IN POLYETHYLENE ENCASEMENT.
6. TRACER WIRE SHALL BE RUN UP HYDRANT.
7. BLOCKING AND MEGA LUGS REQUIRED.
8. HYDRANT CAPS TO BE PAINTED PER THE FOLLOWING:
 - A. CLASS - SAFETY BLUE - RATED CAPACITY OF 1500 GPM
 - B. CLASS A - SAFETY GREEN - RATED CAPACITY OF 1000-1499 GPM
 - C. CLASS B - SAFETY ORANGE - RATED CAPACITY OF 500-999 GPM
 - D. CLASS C - SAFETY RED - RATED CAPACITY OF LESS THAN 500 GPM



ENGINEERING DIVISION
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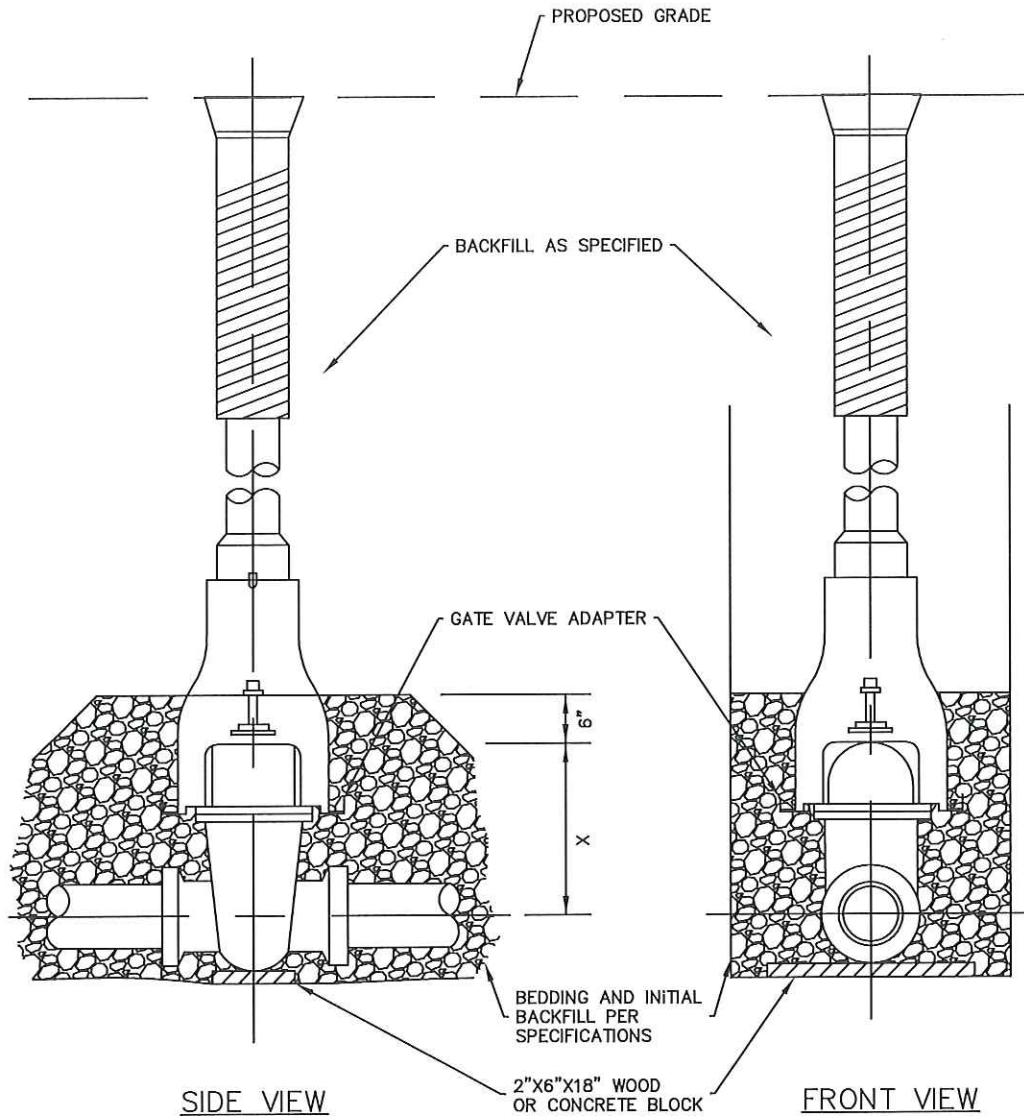
OFFICE 920-339-4061
FAX 920-339-4071

TITLE:
HYDRANT

DIVISION: 33

DRAWING NO:
W-1

DATE: 4/2016
BY: SRL
CHECKED: EPR



PIPE DIA. INCHES	X=SETTING INCHES
6	12
8	13
10	17
12	21

NOTES:

1. ENCASE ENTIRE VALVE IN POLYETHYLENE ENCASEMENT.
2. VALVE BOXES SHALL BE SET VERTICAL.
3. JOINT RESISTANT PER SPECIFICATIONS.
4. VALVE EXTENTION STEM REQUIRED.



ENGINEERING DIVISION
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DE PERE, WI 54115

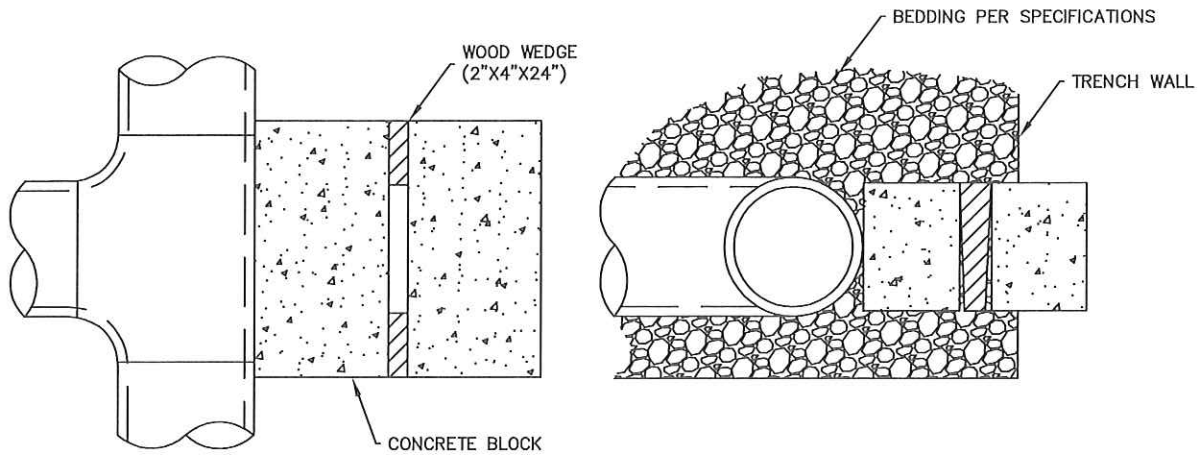
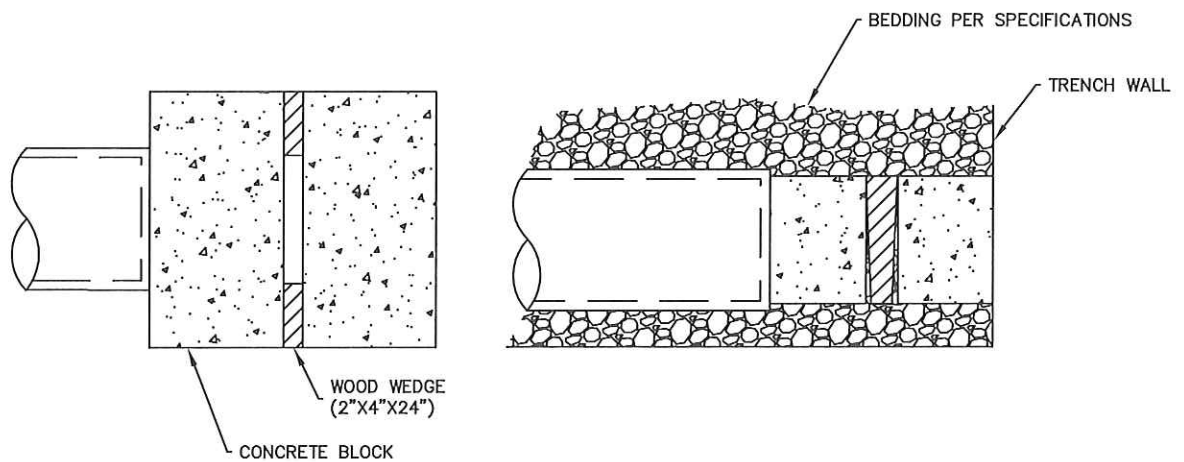
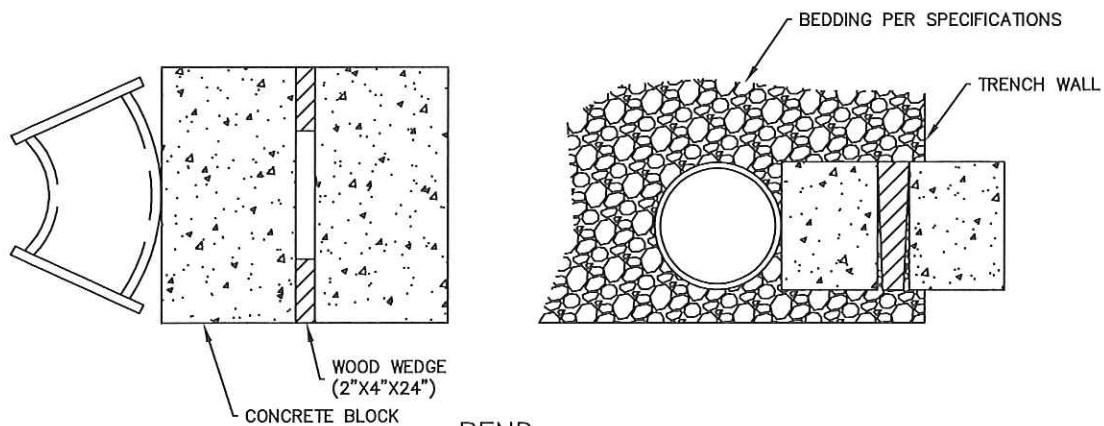
OFFICE 920-339-4061
FAX 920-339-4071

TITLE:
RESILIENT SEATED
GATE VALVE

DIVISION: 33

DRAWING NO:
W-2

DATE: 4/2016
BY: SRL
CHECKED: EPR

TEECAP AND PLUGBEND

NOTES:

1. USE 8"X8"X16" CONCRETE BLOCK FOR 6" OR 8" DIA. PIPE.
2. USE 12"X8"X16" CONCRETE BLOCK 10" AND 12" DIA. PIPE.
3. CONCRETE BLOCKING SHALL BE INSTALLED AGAINST FIRM NATURAL GROUND.



ENGINEERING DIVISION
925 S. SIXTH ST
DE PERE, WI 54115

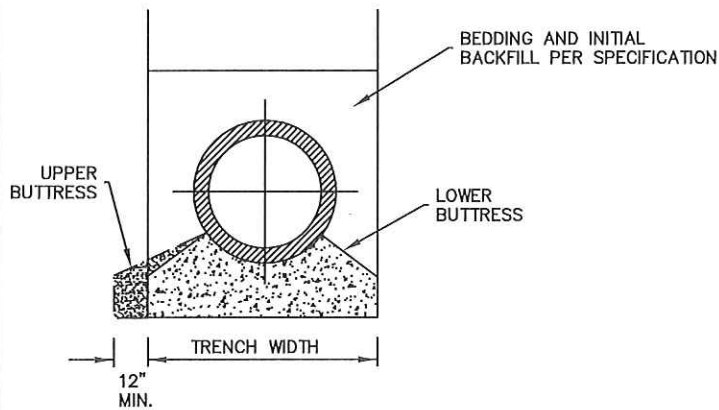
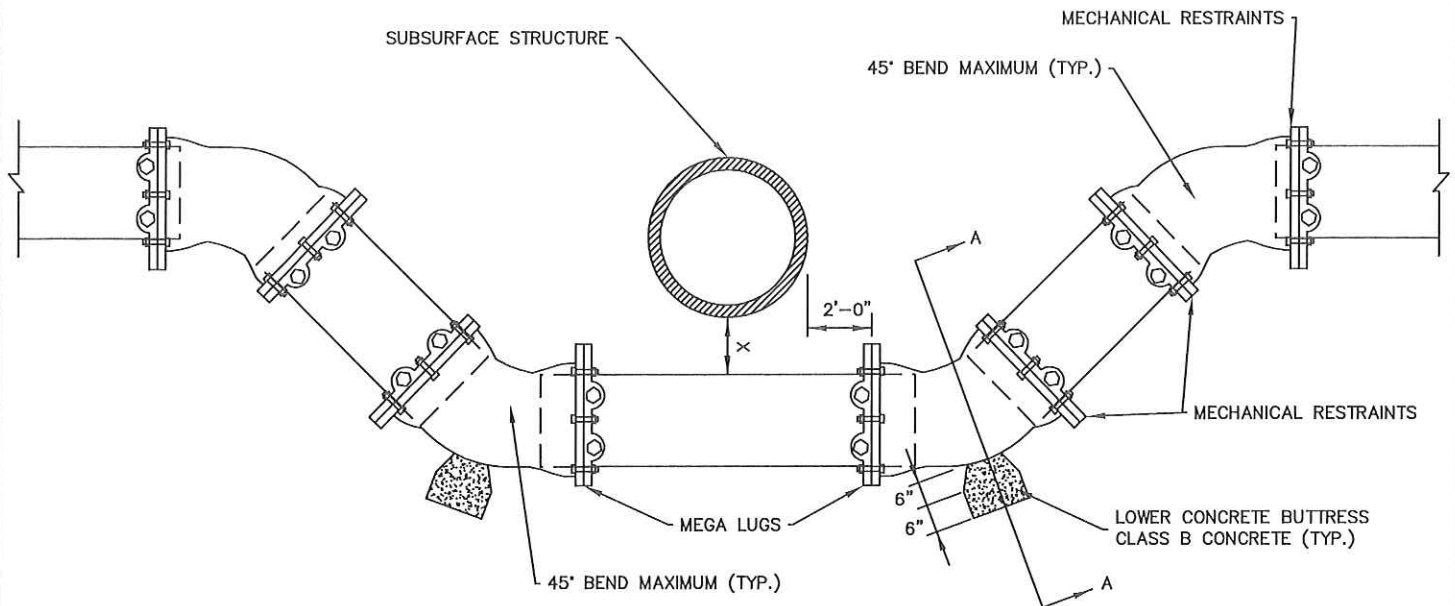
OFFICE 920-339-4061
FAX 920-339-4071

TITLE:
BUTTRISS FOR TEES
PLUGS AND BENDS

DIVISION: 33

DRAWING NO:
W-3

DATE: 4/2016
BY: SRL
CHECKED: EPR



SECTION A-A

SEPERATION TABLE

DESCRIPTION	X=DISTANCE
STRUCTURE	12"
UNDER SEWER	18"
OVER SEWER	6"

NOTES:

1. ALL FITTINGS TO BE WRAPPED WITH POLYETHYLENE ENCASEMENT BEFORE PLACEMENT OF BUTTRESSES.
2. MECHANICAL RESTRAINTS WILL BE REQUIRED IN ADDITION TO BLOCKING.



ENGINEERING DIVISION
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DE PERE, WI 54115

OFFICE 920-339-4061
FAX 920-339-4071

TITLE:
WATER MAIN OFFSET

DIVISION: 33

DRAWING NO:
W-4

DATE: 4/2016
BY: SRL
CHECKED: EPR

City of De Pere, Wisconsin

**Request For Board of Public Works Action**

MEETING DATE: December 11, 2017

DEPARTMENT: Public Works

FROM: Eric Rakers

SUBJECT: Consider Conveyance of Rights by Utility (Sanitary Sewer) for the WisDOT for Ashland Avenue (STH 32) and Parkview Road Project*

The Wisconsin Department of Transportation (WisDOT) is reconstructing/reconfiguring the Parkview Road intersection with Ashland Avenue in 2019. Due to the number of right-angle crashes over the past 5+ years, the intersection of Parkview Road and Ashland Avenue is to be reconstructed with an offset T alignment and will allow only right-in, right-out, and left-in movements. Parkview Road's connection to Ashland Avenue will be realigned approximately 200 feet to the south. The reconstruction of the intersection will improve the safety and reduce right angle crashes. The City approved the State Municipal Agreement for the project with WisDOT in September.

With the realignment, new right of way will be acquired. WisDOT is requiring utility companies to convey rights for facilities within easements that will now become part of the new right of way. For sanitary sewer, the City has a vacated sanitary sewer (not in use, but not abandoned) within the proposed right of way. The City is working with the Green Bay Metropolitan Sewerage District (GBMSD) to abandon this sewer prior to the project. GBMSD and the City have an agreement to cost share in the abandonment of the sewer as this was part of the Ashwaubenon Creek Interceptor. Because the sewer is not in use, and not impacted by the project, the City will be signing over the release of rights for reimbursement. Please note that even though we are releasing rights, when the project is completed, Parkview Road and right of way will become a City street and right of way.

Staff recommends the BOPW approve conveyance of rights for the sanitary sewer and forward to the Council for approval.

ATTACHMENTS:

- DT1660_City of De Pere_SEWR_4190-16-21_102 (PDF)
- CompPlat_City of De Pere_SEWR_4190-16-21_102 (PDF)

CONVEYANCE OF RIGHTS IN LAND (Non-Fee Land Interests)

Wisconsin Department of Transportation
Exempt from-filing transfer form s.77.21(1) Wis. Stats.
DT1660 7/2017 s.84.09(1) Wis. Stats.

City of De Pere, GRANTOR, for and in consideration of the sum of One Dollar (\$1.00) and other good and valuable consideration, grants and conveys any and all rights and interest which, by virtue of prior title, easement, license, or other legal devices, GRANTOR holds in the land described below to the State of Wisconsin, Department of Transportation, GRANTEE, for the purposes of constructing, operating, and maintaining a public highway and appurtenant facilities on, over, under, or across the said land; provided, however that GRANTOR reserves to itself the subordinate right to cross, traverse, or otherwise occupy said land with its present and future overhead or underground transmission lines, appurtenant facilities, and supporting structures in a manner consistent with the purposes of this conveyance and in a manner which will not interfere with normal highway maintenance and operation; provided, further, that the costs of any relocation or alteration, now or in the future, of the transmission lines, appurtenant facilities, or supporting structures when required by the GRANTEE for any reason, including accommodating future expanded or additional highway facilities on, over, under or across said land, will be paid by the GRANTEE; provided, however, that the costs of such relocation or alteration, or of the installation of new or additional facilities when done at the instance of and for the purposes of the GRANTOR, will be defrayed by the GRANTOR.

This conveyance shall be binding on the GRANTOR, GRANTEE, and their respective successors and assigns.

Other persons having an interest in record in the property: None

This space is reserved for recording data

Return to

Division of Transportation System Development

Northeast Region

Utility Unit

944 Vanderperren Way

Green Bay WI 54304

Parcel Identification Number/Tax Key Number

See attached list

Legal Description

See attached legal description

The undersigned certify that this instrument is executed pursuant to a resolution of the Board of Directors (or shareholders, stockholders, or members, if authorized by law) of GRANTOR corporation or cooperative.

Acknowledgement

City of De Pere
(Grantor Name)

(Signature)

(Title)

(Print Name)

(Signature)

(Title)

(Print Name)

(Date)

State of

)

) ss.

)

County

On the above date, this instrument was acknowledged before me by the named person(s).

(Signature, Notary Public)

(Print or Type Name, Notary Public)

(Date Commission Expires)

CONVEYANCE OF RIGHTS IN LAND**Parcel Identification Number**

WD-68

Legal Description

All that part of the lands subject to Grantor's easements or interests included in lands acquired for the improvement of 32 by the Grantee in:

parcel(s) 4 of transportation project plat 4190-16-21-4.02, recorded in volume (none assigned) of transportation project plats, page (none assigned), as document #2798347, recorded in Brown County, Wisconsin;

in the Brown County Office of the Register of Deeds.

Attachment: DT1660_City of De Pere_SEWR_4190-16-21_102 (6490 : Consider Conveyance of Rights of Sanitary Sewer on Parkview*)

TRANSPORTATION PROJECT PLAT NO: 4190-16-21-4.02

PART OF LOT 1, CERTIFIED SURVEY MAP (CSM) NUMBER (*) 7385; PART OF LOT 1, CSM #5955; PART OF LOT 1 CSM #7330; PART OF LOT "G", ASSESSOR'S SUBDIVISION OF 1925 OF LOT 98 ASSESSOR'S SUBDIVISION OF NICOLET (NOW WEST DE PERE); PART OF LOT "J", ASSESSOR'S SUBDIVISION OF 1925 OF LOT 99 ASSESSOR'S SUBDIVISION OF NICOLET (NOW WEST DE PERE); PART OF LOTS 3 & 4 OF FRANKS SUBDIVISION OF PRIVATE CLAIM 26 WEST; ALL WITHIN PRIVATE CLAIM 26, WEST SIDE FOX RIVER, CITY OF DE PERE, BROWN COUNTY, WISCONSIN. RELOCATION ORDER S.T.H. 32 BROWN COUNTY

TO PROPERLY ESTABLISH, LAY OUT, WIDEN, ENLARGE, EXTEND, CONSTRUCT, RECONSTRUCT, IMPROVE, OR MAINTAIN A PORTION OF THE HIGHWAY DESIGNATED ABOVE, THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DEEMS IT NECESSARY TO RELOCATE OR CHANGE SAID HIGHWAY AND ACQUIRE CERTAIN LANDS AND INTERESTS OR RIGHTS IN LANDS FOR THE ABOVE PROJECT.

TO EFFECT THIS CHANGE, PURSUANT TO AUTHORITY GRANTED UNDER SECTION 84.02 (3), 84.09, AND 84.30 WISCONSIN STATUTES, THE DEPARTMENT OF TRANSPORTATION HEREBY ORDERS THAT:

1. THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS PLAT IS LAID OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE PROJECT.
2. THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS PLAT ARE REQUIRED BY THE DEPARTMENT FOR THE ABOVE PROJECT AND SHALL BE **ACQUIRED** BY THE NAME OF THE STATE OF WISCONSIN, PURSUANT TO THE PROVISIONS OF SECTION 84.09 (1) OR (2), WISCONSIN STATUTES.

CONVENTIONAL ABBREVIATIONS AND SYMBOLS

ACCESS POINT
ACCESS RIGHTS
ACRES
CHORD BEARING
CHORD DISTANCE
DEED
DOCUMENT
EAST BOUND
GAS VALVE
INLET
LENGTH OF CURVE
MANHOLE
MONUMENT
NORTH BOUND
PACE
PERMANENT
PERMANENT LIMITED EASEMENT
PRIVATE DRIVEWAY
PROPERTY LINE
RADIUS
REFERENCE LINE
REMAINING
RIGHT OF WAY
SECTION
SECTION LINE
FOUND IRON PIPE
STATION
TEMPORARY LIMITED EASEMENT
TIE POINT
VOLUME
ADJOINING LANDS
WITH SAME OWNER
PARALLEL TO LINE
BUILDING TO BE RAZED
FEE ACQUISITION
BEGIN POINT
END POINT
VARIOUS
HATCHING
BP
BP

SECTION CORNER
MATERIAL AS NOTED
SET R/W MONUMENT W/CAP
(1-1/4" OUTSIDE DIA. x 24")
IRON PIPE 1.13 LBS./FT.
FOUND TYPE 2 MON.
FOUND 3/4" REBAR
SET P.K. NAIL
PROPOSED R/W
BOUNDARY POINT
CORPORATE LIMITS
EXISTING R/W
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
PROPOSED OR NEW R/W LINE
PROPOSED EASEMENT LINE
PARCEL NUMBER
UTILITY NUMBER
SIGN NUMBER
PROPERTY LINE
LOT, TIE AND OTHER MINOR
DASHED LINES
ACCESS RESTRICTED
(By Previous Project/
Control)
ACCESS RESTRICTED
(By Acquisition)
NO ACCESS
(By Statutory Authority)
LIMITED EASEMENT
(Temporary)
LIMITED EASEMENT

CONVENTIONAL UTILITY SYMBOLS
WATER
GAS
TELEPHONE
OVERHEAD
TRANSMISSION LINES
ELECTRIC
CABLE TELEVISION
FIBER OPTIC
SANITARY SEWER
STORM SEWER
NON-COMPENSABLE
POWER POLE
TELEPHONE POLE
TELEPHONE PEDESTAL
ELECTRIC TOWER

RESERVE FOR CLAUSES AND NOTE INFORMATION

RIGHT OF WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS AND ARE REFERENCED TO THE US PUBLIC LAND SURVEY OR OTHER SURVEYS OF PUBLIC RECORD.

RIGHT OF WAY MONUMENTS ARE TYPE 2 AND WILL BE PLACED PRIOR TO OR AT THE TIME OF LAND TITLE TRANSFER.

AREAS SHOWN IN THE TOTAL ACRES COLUMN OF THE SCHEDULE OF LANDS & INTEREST TABLE MAY BE APPROXIMATE AND ARE DERIVED FROM TAX ROLLS OR OTHER AVAILABLE SOURCES AND MAY NOT INCLUDE LANDS OF THE OWNER WHICH ARE NOT CONTIGUOUS TO THE AREA TO BE ACQUIRED.

COORDINATES AS SHOWN ARE NOT INTENDED TO BE USED FOR RETRACEMENT PURPOSES AND MUST BE VERIFIED WITH THE COUNTY SURVEY DEPARTMENT.

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE SYSTEM COORDINATES, BROWN COUNTY, NAD 83 (1993) IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

PROPERTY LINES SHOWN ON THIS PLAT ARE DRAWN FROM DATA DERIVED FROM MAPS AND DOCUMENTS OF PUBLIC RECORD AND/OR EXISTING OCCUPATIONAL LINES. THIS PLAT MAY NOT BE A TRUE REPRESENTATION OF EXISTING PROPERTY LINES AND SHOULD NOT BE USED AS A SUBSTITUTE FOR AN ACCURATE FIELD SURVEY.

EXISTING RIGHT OF WAY WAS ACQUIRED FROM PROJECT(S): F060-121

EXISTING ACCESS CONTROL WAS ACQUIRED UNDER PROJECT(S)/DOC#:

RIGHT OF WAY REFERENCE LINE MAY NOT BE THE SAME AS THE CONSTRUCTION REFERENCE LINE.

OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY, AND ARE SUBJECT TO CHANGE PRIOR TO TRANSFER OF LAND INTERESTS TO DEPARTMENT OF TRANSPORTATION.

FEE SIMPLE TO ALL THOSE EXISTING LANDS OF THE GRANTOR CURRENTLY USED FOR HIGHWAY PURPOSES, DESIGNATED AS EXISTING RIGHT OF WAY, WHETHER ACQUIRED BY SEPARATE CONVEYANCE OR OTHERWISE, BOUND BY THE TRAVERSE OF THE COURSE TABLE OF NEW RIGHT OF WAY AS SHOWN ON THE SAID TRANSPORTATION PROJECT PLAT.

A TEMPORARY LIMITED EASEMENT (TLE) IS A RIGHT FOR CONSTRUCTION PURPOSES, AS DEFINED HEREIN, INCLUDING THE RIGHT TO OPERATE NECESSARY EQUIPMENT THEREON AND THE RIGHT OF INGRESS AND EGRESS AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM NECESSARY OR DESIRABLE TO PREVENT EROSION OF THE SOIL. ALL TLEs ON THIS PLAT EXPIRE AT THE COMPLETION OF THE CONSTRUCTION PROJECT FOR WHICH THIS INSTRUMENT IS GIVEN.

WISCONSIN DEPARTMENT OF TRANSPORTATION

I, GREGORY T. BELANGER PROFESSIONAL LAND SURVEYOR, HEREBY CERTIFY THAT IN FULL COMPLIANCE WITH THE PROVISIONS OF SECTION 84.095, OF THE WISCONSIN STATUTES AND UNDER THE DIRECTION OF THE DEPARTMENT OF TRANSPORTATION, I HAVE MAPPED THIS TRANSPORTATION PROJECT PLAT AND THAT SUCH PLAT CORRECTLY REPRESENTS ALL EXTERIOR BOUNDARIES OF THE SURVEYED LAND.

SIGNATURE: *Gregory T. Belanger* DATE: 8-30-2017

PRINT NAME: GREGORY T. BELANGER
REGISTRATION NUMBER: S-3055

THIS PLAT AND RELOCATION ORDER ARE APPROVED FOR
THE WISCONSIN DEPARTMENT OF TRANSPORTATION

SIGNATURE: *Curt Van Erem* DATE: 8-30-2017

PRINT NAME: CURT VAN EREM



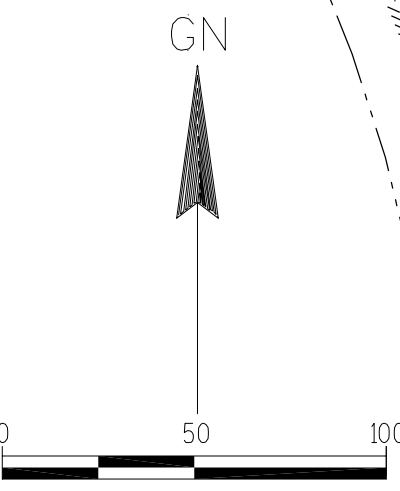
SCHEDULE OF UTILITIES & INTERESTS REQUIRED

UTILITY NUMBER	OWNER	INTEREST REQUIRED
100	ATC MANAGEMENT, INC.	RELEASE OF RIGHTS
101	AT & T WISCONSIN	RELEASE OF RIGHTS
102	CITY OF DE PERE - SEWER	RELEASE OF RIGHTS
103	WISCONSIN PUBLIC SERVICE CORPORATION-ELECTRIC	RELEASE OF RIGHTS
104	GREEN BAY METROPOLITAN SEWAGE DISTRICT	RELEASE OF RIGHTS
106	CITY OF DE PERE - WATER	RELEASE OF RIGHTS
107	WISCONSIN PUBLIC SERVICE CORPORATION-GAS	RELEASE OF RIGHTS

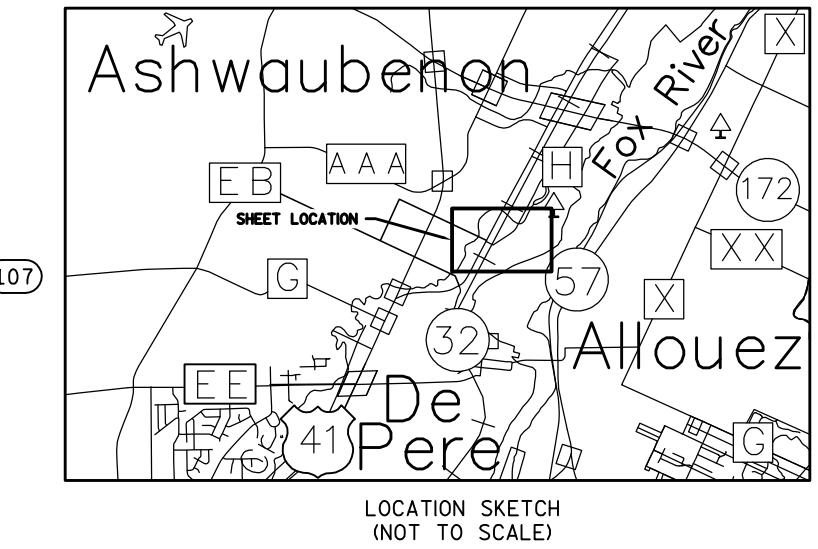
SCHEDULE OF LANDS & INTERESTS REQUIRED

PARCEL NUMBER	OWNER	INTEREST REQUIRED	FEE R/W ACRE(S) OR (S.F.) REQUIRED			T.L.E. AREA
			NEW	EXISTING	TOTAL	
1	MARY PAT ASCHENBRENNER	FEE & TLE	0.063	-	0.063	0.021
2	ASHLAND PROPERTIES, LLC.	TLE	-	-	-	0.010
3	CITY OF DE PERE	FEE & TLE	0.020	-	0.020	-
4	PD REAL ESTATE HOLDINGS, LLC.	FEE & TLE	1.218	-	1.218	0.113
5	JACHNA, LLC.	FEE & TLE	0.096	-	0.096	0.196

POINT-POINT	BEARING	DISTANCE
107 - 501	N 63°50'30" W	1205.98'
501 - 502	N 29°35'05" E	173.20'
502 - 72	N 60°24'55" W	100.00'
72 - 73	N 60°25'01" W	243.90'
73 - 74	N 04°25'14" E	213.32'
74 - 75	N 57°20'06" E	131.53'
75 - 76	N 25°39'16" E	94.56'
76 - 111	N 01°50'49" E	68.18'
111 - 60	N 34°54'43" E	10.50'
60 - 114	S 63°45'18" E	82.17'
114 - 115	N 21°14'05" E	8.30'
115 - 62	S 63°49'55" E	127.37'
62 - 63	N 81°45'02" E	67.06'
63 - 64	S 60°25'21" E	48.13'
64 - 112	S 29°35'05" W	84.69'
112 - 65	N 63°49'55" W	182.65'
65 - 68	S 35°54'56" W	228.36'
68 - 69	S 03°54'55" W	86.40'
69 - 70	S 32°10'48" E	83.34'
70 - 71	S 60°25'01" E	96.66'
71 - 110	S 60°24'55" E	100.00'
110 - 502	S 29°35'05" W	80.00'



POINT	STATION	OFFSET	COORDINATES
500	100+00.00	0.00'	Y=546639.782 X=83980.574
501	110+29.95	0.00'	Y=547535.459 X=84489.071
73	112+03.16	-343.90'	Y=547055.861 X=84275.514
502	112+03.16	0.00'	Y=547686.080 X=84574.583
72	112+03.16	-100.00'	Y=547735.451 X=84487.620
70	112+83.15	-196.66'	Y=547852.739 X=84443.060
110	112+83.16	0.00'	Y=547755.650 X=84614.079
71	112+83.16	-100.00'	Y=547805.021 X=84527.117
69	113+22.58	-270.08'	Y=547923.275 X=84398.676
509	113+42.92	-100.00'	Y=547856.992 X=84556.622
74	113+96.23	-434.61'	Y=548068.550 X=84281.256
68	114+00.45	307.78'	Y=548009.474 X=84404.575
508	114+04.93	-313.88'	Y=548016.516 X=84401.241
507	114+06.98	-280.29'	Y=548001.710 X=84431.467
506	114+88.39	-310.18'	Y=548087.265 X=84445.658
75	115+12.63	-373.37'	Y=548139.541 X=84402.684
505	115+87.26	-296.02'	Y=548166.258 X=84506.794
76	116+06.97	-379.85'	Y=548224.779 X=84443.623
504	116+11.87	-297.51'	Y=548188.394 X=84517.643
65	116+27.42	-282.32'	Y=548194.420 X=84538.531
112	116+38.31	-100.00'	Y=548113.872 X=84702.458
111	116+67.32	-411.58'	Y=548292.926 X=84445.820
115	116+74.27	-328.24'	Y=548257.824 X=84521.730
60	116+77.77	-410.61'	Y=548301.538 X=84451.831
62	116+81.86	-201.09'	Y=548201.654 X=84636.044
114	116+82.56	-328.58'	Y=548265.203 X=84525.528
84	116+83.96	-304.53'	Y=548254.550 X=84547.133
86	116+84.28	-197.98'	Y=548202.220 X=84639.951
POINT	STATION	OFFSET	COORDINATES
TLE "A"			
75	116+74.27	-328.24'	Y=548257.824 X=84521.730
85	116+79.33	304.30'	Y=548250.412 X=84545.045
62	116+81.86	-201.09'	Y=548201.654 X=84636.044
114	116+82.56	-328.58'	Y=548265.203 X=84525.528
84	116+83.96	-304.53'	Y=548254.550 X=84547.133
86	116+84.28	-197.98'	Y=548202.220 X=84639.951
POINT	STATION	OFFSET	COORDINATES
TLE "B"			
80	116+93.46	-186.16'	Y=548204.367 X=84654.757
83	117+23.00	-120.59'	Y=548197.681 X=84726.368
81	117+27.01	-184.83'	Y=548232.891 X=84672.476
82	117+28.99	-130.41'	Y=548207.743 X=84720.783
POINT	STATION	OFFSET	COORDINATES
TLE "C"			
95	113+70.75	-293.23'	Y=547976.589 X=84402.325
94	115+13.41	-274.97'	Y=548091.641 X=84488.634
93	115+20.38	-277.53'	Y=548098.969 X=84489.848
88	115+83.96	-162.14'	Y=548097.289 X=84621.583
87	115+86.48	-100.00'	Y=548068.800 X=84676.871
90	116+08.75	-180.54'	Y=548127.933 X=84617.829
89	116+09.75	-162.58'	Y=548119.936 X=84633.938
92	116+24.47	-260.77'	Y=548181.207 X=84555.818
91	116+29.18	-188.62'	Y=548145.291 X=84628.450
112	116+38.31	-100.00'	Y=548113.872 X=84702.458
POINT	STATION	OFFSET	COORDINATES
TLE "D"			
102	112+32.61	-383.97'	Y=547901.265 X=84255.217
101	112+52.11	-425.77'	Y=547938.857 X=84228.466
103	112+60.41	-370.80'	Y=547918.937 X=84280.390
100	113+13.28	-395.64'	Y=547977.180 X=84284.893
POINT	STATION	OFFSET	COORDINATES
TLE "E"			
71	112+83.16	-100.00'	Y=547805.021 X=84527.117
96	112+93.15	-215.28'	Y=547870.628 X=84431.803
97	112+93.16	-100.00'	Y=547813.117 X=84532.054
POINT	STATION	OFFSET	COORDINATES
TLE "F"			
78	111+82.72	-188.62'	Y=547761.431 X=84400.462
79	111+88.13	-100.00'	Y=547722.385 X=84480.202
112	112+03.15	-188.62'	Y=547719.202 X=84410.550
72	112+03.16	-100.00'	Y=547735.451 X=84487.620



FEE
TLE
PLE
HE
EX UT
EASE

4

Attachment: CompPlat City of De Pere SEWR 4190-16-21-102 (6490 : Consider Conveyance of Rights of Sanitary Sewer on Parkview)

City of De Pere, Wisconsin

**Request For Board of Public Works Action**

MEETING DATE: December 11, 2017

DEPARTMENT: Public Works

FROM: Eric Rakers

SUBJECT: Consider Quit Claim Deed by Utility (Water Main) for the WisDOT for Ashland Avenue (STH 32) and Parkview Road Project*

The Wisconsin Department of Transportation (WisDOT) is reconstructing/reconfiguring the Parkview Road intersection with Ashland Avenue in 2019. Due to the number of right-angle crashes over the past 5+ years, the intersection of Parkview Road and Ashland Avenue is to be reconstructed with an offset T alignment and will allow only right-in, right-out, and left-in movements. Parkview Road's connection to Ashland Avenue will be realigned approximately 200 feet to the south. The reconstruction of the intersection will improve the safety and reduce right angle crashes. The City approved the State Municipal Agreement for the project with WisDOT in September.

With the realignment, new right of way will be acquired. WisDOT is requiring utility companies to release easements/rights within the new right of way area. There is a utility easement along Ashland Avenue that the City has rights to for water main. This easement is being crossed by the new road. The City's water main is not located in the easement. The water main is located in existing STH 32 right of way.

Additionally, WisDOT will be completing grading in the utility easement. WisDOT is requesting a temporary construction permit to complete the grading.

Staff recommends the BOPW approve releasing the utility easement with the quit claim deed and approve the temporary grading easement and forward to the Council for approval.

ATTACHMENTS:

- REVISED - DT1661_City of De Pere_WATR_4190-16-21_106 (PDF)
- REVISED - DT2216_City of De Pere_WATR_4190-16-21_106 (PDF)
- CompPlat_City of De Pere_WATR_4190-16-21_106 (PDF)

QUIT CLAIM DEED By Utility (Non-Fee Land Interests)

Wisconsin Department of Transportation
Exempt from filing transfer form s.77.21(1) Wis. Stats.
DT1661 7/2017 s. 84.09(1) Wis. Stats.

THIS DEED, made by City of De Pere, GRANTOR, a utility authorized to transact business in the State of Wisconsin, quit claims to the State of Wisconsin, Department of Transportation, GRANTEE, all of its title, rights, or interests in and to the lands described, reserving to itself the ownership and title of its facilities or personalities occupying the described lands, and which the GRANTOR, at its own cost and expense will remove from the lands, or will so relocate, change, or alter that they will not interfere with or be interfered with by the normal operation and maintenance of a public highway on the described lands, for the sum of One Dollar (\$1.00) and other good and valuable consideration.

Other persons having an interest of record in the property: None

This space is reserved for recording data

Return to

Division of Transportation System Development
Northeast Region

Utility Unit

944 Vanderperren Way
Green Bay WI 54304

Parcel Identification Number/Tax Key Number

See attached list

Legal Description

See attached legal description

GRANTOR, a utility organized and existing under the laws of the State of Wisconsin with its principal place of business at 925 South 6th Street, City of De Pere County of Brown State of Wisconsin.

The undersigned certify that this instrument is executed with the full right, power and authority to do so on behalf of Grantor.

Acknowledgement

City of De Pere

(Grantor Name)

(Date)

(Signature)

State of

)

) ss.

(Title)

County

)

On the above date, this instrument was acknowledged before me by the named person(s).

(Print Name)

(Signature)

(Signature, Notary Public)

(Title)

(Print or Type Name, Notary Public)

(Print Name)

(Date Commission Expires)

QUIT CLAIM DEED By Utility

Parcel Identification Number

WD-68

Legal Description

All that part of the lands subject to Grantor's easements or interests included in lands acquired for the improvement of 32 by the Grantee in:

parcel(s) 4 of transportation project plat 4190-16-21-4.02, recorded in volume (none assigned) of transportation project plats, page (none assigned), as document #2798347, recorded in Brown County, Wisconsin;

in the Brown County Office of the Register of Deeds.

Attachment: REVISED - DT1661_City of De Pere_WATR_4190-16-21_106 (6487 : Consider Quit Claim Deed for Water Main at Parkview*)

TEMPORARY CONSTRUCTION EASEMENT

Wisconsin Department of Transportation
DT2216 7/2017 s.84.09(1) Wis. Stats.

City of De Pere, Grantor, which has an interest in the lands described below, grants to the Wisconsin Department of Transportation, Grantee, the right and permission to occupy Grantor's easement area for highway improvement purposes, which may include but are not limited to: 1) Constructing slopes and drainage facilities on the following described lands, including the right to operate necessary equipment thereon; 2) The right of ingress and egress, as long as required for such public purpose, including the right to preserve, protect, remove or plant thereon any vegetation that the highway authorities may deem desirable to prevent erosion of the soil, provided such activities are consistent with the rights held by the Grantor under its easement.

Legal Description:

See attached legal description

This Temporary Construction Easement establishes the right of Grantee to occupy lands on which Grantor has easement interests. However, Grantor reserves to itself the right to continue to use said easement area with its present and future overhead and/or underground facilities in a manner which is consistent with this grant, and further, that the costs of any relocation or alteration of any facilities of Grantor required by Grantee to accomplish its work, now or in the future, will be paid by Grantee.

This Temporary Construction Easement shall terminate upon completion of Construction Project No. 4190-16-73 for which this instrument is given.

The Grantor has an easement or prescriptive right and therefore grants this Temporary Construction Easement as a holder of a property interest and not as a property owner.

The Grantor's easement is recorded as DOC #707029 in the Brown County Register of Deeds Office or exists by prescriptive rights as defined by Section 893.28 Wisconsin Statutes.

The undersigned certify that this instrument is executed with the full right, power and authority to do so on behalf of GRANTOR.

City of De Pere

(Grantor Name)

(Signature)

(Date)

(Title)

(Print Name)

(Signature)

(Date)

(Title)

(Print Name)

TEMPORARY CONSTRUCTION EASEMENT

Legal Description

All that part of the lands subject to Grantor's easements or interests included in lands acquired for the improvement of 32 by the Grantee in:

parcel(s) 4 and 5 of transportation project plat 4190-16-21-4.02, recorded in volume (none assigned) of transportation project plats, page (none assigned), as document #2798347, recorded in Brown County, Wisconsin;

in the Brown County Office of the Register of Deeds.

Attachment: REVISED - DT2216_City of De Pere_WATR_4190-16-21_106 (6487 : Consider Quit Claim Deed for Water Main at Parkview*)

TRANSPORTATION PROJECT PLAT NO: 4190-16-21-4.02

PART OF LOT 1, CERTIFIED SURVEY MAP (CSM) NUMBER (#) 7385; PART OF LOT 1, CSM #5955; PART OF LOT 1 CSM #7330; PART OF LOT "G", ASSESSOR'S SUBDIVISION OF 1925 OF LOT 98 ASSESSOR'S SUBDIVISION OF NICOLET (NOW WEST DE PERE); PART OF LOT "J", ASSESSOR'S SUBDIVISION OF 1925 OF LOT 99 ASSESSOR'S SUBDIVISION OF NICOLET (NOW WEST DE PERE); PART OF LOTS 3 & 4 OF FRANKS SUBDIVISION OF PRIVATE CLAIM 26 WEST; ALL WITHIN PRIVATE CLAIM 26, WEST SIDE FOX RIVER, CITY OF DE PERE, BROWN COUNTY, WISCONSIN. RELOCATION ORDER S.T.H. 32 BROWN COUNTY

TO PROPERLY ESTABLISH, LAY OUT, WIDEN, ENLARGE, EXTEND, CONSTRUCT, RECONSTRUCT, IMPROVE, OR MAINTAIN A PORTION OF THE HIGHWAY DESIGNATED ABOVE, THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DEEMS IT NECESSARY TO RELOCATE OR CHANGE SAID HIGHWAY AND ACQUIRE CERTAIN LANDS AND INTERESTS OR RIGHTS IN LANDS FOR THE ABOVE PROJECT.

TO EFFECT THIS CHANGE, PURSUANT TO AUTHORITY GRANTED UNDER SECTION 84.02 (3), 84.09, AND 84.30 WISCONSIN STATUTES, THE DEPARTMENT OF TRANSPORTATION HEREBY ORDERS THAT:

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2. THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS PLAT ARE REQUIRED BY THE DEPARTMENT FOR THE ABOVE PROJECT AND SHALL BE **ACQUIRED** BY THE NAME OF THE STATE OF WISCONSIN, PURSUANT TO THE PROVISIONS OF SECTION 84.09 (1) OR (2), WISCONSIN STATUTES.

CONVENTIONAL ABBREVIATIONS AND SYMBOLS

ACCESS POINT	AP	SECTION CORNER	SC
ACCESS RIGHTS	AR	MATERIAL (AS NOTED)	MA
ACRES	AC	SET R/W MONUMENT W/CAP	SET
CHORD BEARING	CH BNG	(1-1/4" OUTSIDE DIA. X 24")	CH BNG
CHORD DISTANCE	CH DIS	IRON PIPE 1.13 LBS./FT.	CH DIS
DEED	(D)	FOUND TYPE 2 MON.	(D)
DOCUMENT	DOC	FOUND 3/4" REBAR	DOC
EAST BOUND	EB	PROPOSED R/W	EB
GAS VALVE	GV	PRWOOD	GV
INLET	IN	SET P.K. NAIL	IN
LENGTH OF CURVE	L		L
MANHOLE	MH		MH
MONUMENT	MON		MON
NORTH BOUND	NB		NB
PACE	PC		PC
PERMANENT	PERM		PERM
PERMANENT LIMITED EASEMENT	PLE		PLE
PRIVATE DRIVEWAY	PD		PD
PROPERTY LINE	PL		PL
RADIUS	R		R
REFERENCE LINE	RL		RL
REMAINING	REM		REM
RIGHT OF WAY	R/W		R/W
SECTION	SEC		SEC
SECTION LINE	SL		SL
FOUND IRON PIPE	FIP		FIP
STATION	STA		STA
TEMPORARY LIMITED EASEMENT	TLE		TLE
TIE POINT	TP		TP
VOLUME	VOL		VOL
ADJOINING LANDS	ADJ		ADJ
WITH SAME OWNER	WSO		WSO
PARALLEL TO LINE	PTL		PTL
BUILDING TO BE RAZED	BRZ		BRZ
FEE ACQUISITION	FA		FA
BEGIN POINT	BP		BP
END POINT	EP		EP

CONVENTIONAL UTILITY SYMBOLS

WATER	W
GAS	G
TELEPHONE	T
OVERHEAD	OH
TRANSMISSION LINES	TL
ELECTRIC	E
CABLE TELEVISION	TV
FIBER OPTIC	FO
SANITARY SEWER	SAN
STORM SEWER	SS
NON-COMPENSABLE	NC
COMPENSABLE	C
POWER POLE	PP
TELEPHONE POLE	TP
TELEPHONE PEDESTAL	TPD
ELECTRIC TOWER	ET

RESERVE FOR CLAUSES AND NOTE INFORMATION

RIGHT OF WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS AND ARE REFERENCED TO THE U.S. PUBLIC LAND SURVEY OR OTHER SURVEYS OF PUBLIC RECORD.

RIGHT OF WAY MONUMENTS ARE TYPE 2 AND WILL BE PLACED PRIOR TO OR AT THE TIME OF LAND TITLE TRANSFER.

AREAS SHOWN IN THE TOTAL ACRES COLUMN OF THE SCHEDULE OF LANDS & INTEREST TABLE MAY BE APPROXIMATE AND ARE DERIVED FROM TAX ROLLS OR OTHER AVAILABLE SOURCES AND MAY NOT INCLUDE LANDS OF THE OWNER WHICH ARE NOT CONTIGUOUS TO THE AREA TO BE ACQUIRED.

COORDINATES AS SHOWN ARE NOT INTENDED TO BE USED FOR RETRACEMENT PURPOSES AND MUST BE VERIFIED WITH THE COUNTY SURVEY DEPARTMENT.

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE SYSTEM COORDINATES, BROWN COUNTY, NAD 83 (1993) IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

PROPERTY LINES SHOWN ON THIS PLAT ARE DRAWN FROM DATA DERIVED FROM MAPS AND DOCUMENTS OF PUBLIC RECORD AND/OR EXISTING OCCUPATIONAL LINES. THIS PLAT MAY NOT BE A TRUE REPRESENTATION OF EXISTING PROPERTY LINES AND SHOULD NOT BE USED AS A SUBSTITUTE FOR AN ACCURATE FIELD SURVEY.

EXISTING RIGHT OF WAY WAS ACQUIRED FROM PROJECT(S): F060-121

EXISTING ACCESS CONTROL WAS ACQUIRED UNDER PROJECT(S)/DOC: #

RIGHT OF WAY REFERENCE LINE MAY NOT BE THE SAME AS THE CONSTRUCTION REFERENCE LINE.

OWNERS' NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY, AND ARE SUBJECT TO CHANGE PRIOR TO TRANSFER OF LAND INTERESTS TO DEPARTMENT OF TRANSPORTATION.

FEE SIMPLE TO ALL THOSE EXISTING LANDS OF THE GRANTOR CURRENTLY USED FOR HIGHWAY PURPOSES, DESIGNATED AS EXISTING RIGHT OF WAY, WHETHER ACQUIRED BY SEPARATE CONVEYANCE OR OTHERWISE, BOUND BY THE TRAVERSE OF THE COURSE TABLE OF NEW RIGHT OF WAY AS SHOWN ON THE SAID TRANSPORTATION PROJECT PLAT.

A TEMPORARY LIMITED EASEMENT (TLE) IS A RIGHT FOR CONSTRUCTION PURPOSES, AS DEFINED HEREIN, INCLUDING THE RIGHT TO OPERATE NECESSARY EQUIPMENT THEREON AND THE RIGHT OF INGRESS AND EGRESS AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM NECESSARY OR DESIRABLE TO PREVENT EROSION OF THE SOIL. ALL TLES ON THIS PLAT EXPIRE AT THE COMPLETION OF THE CONSTRUCTION PROJECT FOR WHICH THIS INSTRUMENT IS GIVEN.

WISCONSIN DEPARTMENT OF TRANSPORTATION

I, GREGORY T. BELANGER PROFESSIONAL LAND SURVEYOR, HEREBY CERTIFY THAT IN FULL COMPLIANCE WITH THE PROVISIONS OF SECTION 84.095, OF THE WISCONSIN STATUTES AND UNDER THE DIRECTION OF THE DEPARTMENT OF TRANSPORTATION, I HAVE MAPPED THIS TRANSPORTATION PROJECT PLAT AND THAT SUCH PLAT CORRECTLY REPRESENTS ALL EXTERIOR BOUNDARIES OF THE SURVEYED LAND.

SIGNATURE: *Gregory T. Belanger* DATE: 8-30-2017

PRINT NAME: GREGORY T. BELANGER

REGISTRATION NUMBER: S-3055

THIS PLAT AND RELOCATION ORDER ARE APPROVED FOR THE WISCONSIN DEPARTMENT OF TRANSPORTATION

SIGNATURE: *Curt Van Erem* DATE: 8-30-2017

PRINT NAME: CURT VAN EREM



SCHEDULE OF UTILITIES & INTERESTS REQUIRED

UTILITY NUMBER	OWNER	INTEREST REQUIRED
100	ATC MANAGEMENT, INC.	RELEASE OF RIGHTS
101	AT & T WISCONSIN	RELEASE OF RIGHTS
102	CITY OF DE PERE - SEWER	RELEASE OF RIGHTS
103	WISCONSIN PUBLIC SERVICE CORPORATION-ELECTRIC	RELEASE OF RIGHTS
104	GREEN BAY METROPOLITAN SEWAGE DISTRICT	RELEASE OF RIGHTS
106	CITY OF DE PERE - WATER	RELEASE OF RIGHTS
107	WISCONSIN PUBLIC SERVICE CORPORATION-GAS	RELEASE OF RIGHTS

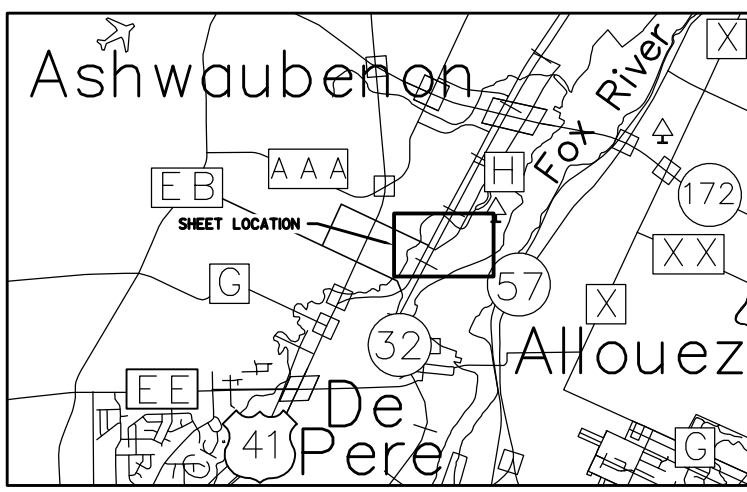
SCHEDULE OF LANDS & INTERESTS REQUIRED

PARCEL NUMBER	OWNER	INTEREST REQUIRED	FEE R/W ACRE(S) OR (S.F.) REQUIRED	T.L.E. AREA
1	MARY PAT ASCHENBRENNER	FEE & TLE	0.063	0.063
2	ASHLAND PROPERTIES, LLC.	TLE	-	0.010
3	CITY OF DE PERE	FEE & TLE	0.020	0.020
4	PD REAL ESTATE HOLDINGS, LLC.	FEE & TLE	1.218	0.113
5	JACHNA, LLC.	FEE & TLE	0.096	0.196

POINT-POINT	BEARING	DISTANCE
107 - 501	N 63°50'30" W	1205.98'
501 - 502	N 29°35'05" E	173.20'
502 - 72	N 60°24'55" W	100.00'
72 - 73	N 60°25'01" W	243.90'
73 - 74	N 04°25'14" E	213.32'
74 - 75	N 57°20'06" E	131.53'
75 - 76	N 25°39'16" E	94.56'
76 - 111	N 01°50'49" E	68.18'
111 - 60	N 34°54'43" E	10.50'
60 - 114	S 63°45'18" E	82.17'
114 - 115	S 21°14'05" E	8.30'
115 - 62	S 63°49'55" E	127.37'
62 - 63	N 81°45'02" E	67.06'
63 - 64	S 60°25'21" E	48.13'
64 - 112	S 29°35'05" W	84.69'
112 - 65	N 63°49'55" W	182.65'
65 - 68	S 35°54'56" W	228.36'
68 - 69	S 03°54'55" W	86.40'
69 - 70	S 32°10'48" E	83.34'
70 - 71	S 60°25'01" E	96.66'
71 - 110	S 60°24'55" E	100.00'
110 - 502	S 29°35'05" W	80.00'

POINT	STATION	OFFSET	COORDINATES
500	100+00.00	0.00'	Y=546639.782 X=83980.574
501	110+29.95	0.00'	Y=547535.459 X=84489.071
73	112+03.16	-343.90'	Y=547055.861 X=84275.514
502	112+03.16	0.00'	Y=547686.080 X=84574.583
72	112+03.16	-100.00'	Y=547735.451 X=84487.620
70	112+03.15	-196.66'	Y=547852.739 X=84443.060
110	112+03.16	0.00'	Y=547755.650 X=84614.079
71	112+03.16	-100.00'	Y=547805.021 X=84527.117
69	113+22.58	-270.08'	Y=547923.275 X=84398.676
509	113+42.92	-100.00'	Y=547856.992 X=84556.622
74	113+46.23	-434.61'	Y=548068.550 X=84281.256
68	114+00.45	307.78'	Y=548009.474 X=84404.575
508	114+04.93	-313.88'	Y=548016.516 X=84401.241
507	114+06.98	-280.29'	Y=548001.710 X=84431.467
506	114+08.39	-310.18'	Y=548087.265 X=84445.658
75	115+12.63	-373.37'	Y=548139.541 X=84402.684
505	115+87.26	-296.02'	Y=548166.258 X=84506.794
76	116+06.97	-379.85'	Y=548224.779 X=84443.623
504	116+11.87	-297.51'	Y=548188.394 X=84517.643
65	116+27.42	-282.32'	Y=548194.420 X=84538.531
112	116+38.31	-100.00'	Y=548113.872 X=84702.458
111	116+67.32	-411.58'	Y=548292.926 X=84445.820
115	116+74.27	-328.24'	Y=548257.824 X=84521.730
60	116+77.77	-410.61'	Y=548301.538 X=84451.831
62	116+81.86	-201.09'	Y=548201.654 X=84636.044
114	116+82.56	-328.58'	Y=548265.203 X=84525.528
84	116+83.96	-304.53'	Y=548254.550 X=84547.133
86	116+84.28	-197.98'	Y=548202.220 X=84639.951
POINT	STATION	OFFSET	COORDINATES
TLE "A"			
75	116+74.27	-328.24'	Y=548257.824 X=84521.730
85	116+79.33	304.30'	Y=548250.412 X=84545.045
62	116+81.86	-201.09'	Y=548201.654 X=84636.044
114	116+82.56	-328.58'	Y=548265.203 X=84525.528
84	116+83.96	-304.53'	Y=548254.550 X=84547.133
86	116+84.28	-197.98'	Y=548202.220 X=84639.951
POINT	STATION	OFFSET	COORDINATES
TLE "B"			
80	116+93.46	-186.16'	Y=548204.367 X=84654.757
83	117+23.00	-120.59'	Y=548197.681 X=84726.368
81	117+27.01	-184.83'	Y=548232.891 X=84672.476
82	117+28.99	-130.41'	Y=548207.743 X=84720.783
POINT	STATION	OFFSET	COORDINATES
TLE "C"			
95	113+70.75	-293.23'	Y=547976.589 X=84402.325
94	115+13.41	-274.97'	Y=548091.641 X=84488.634
93	115+20.38	-277.53'	Y=548098.969 X=84489.848
88	115+83.96	-162.14'	Y=548097.289 X=84621.583
87	115+86.48	-100.00'	Y=548068.800 X=84676.871
90	116+08.75	-180.54'	Y=548127.933 X=84617.829
89	116+09.75	-162.58'	Y=548119.936 X=84633.938
92	116+24.47	-260.77'	Y=548181.207 X=84555.818
91	116+29.18	-188.62'	Y=548145.291 X=84628.615
112	116+38.31	-100.00'	Y=548113.872 X=84702.458
POINT	STATION	OFFSET	COORDINATES
TLE "D"			
102	112+32.61	-383.97'	Y=547901.265 X=84255.217
101	112+52.11	-425.77'	Y=547938.857 X=84228.486
103	112+60.41	-370.80'	Y=547918.937 X=84280.390
100	113+13.28	-395.64'	Y=547977.180 X=84284.893
POINT	STATION	OFFSET	COORDINATES
TLE "E"			
71	112+83.16	-100.00'	Y=547805.021 X=84527.117
96	112+93.15	-215.28'	Y=547870.628 X=84431.803
97	112+93.16	-100.00'	Y=547813.117 X=84532.054
POINT	STATION	OFFSET	COORDINATES
TLE "F"			
78	111+82.72	-188.62'	Y=547761.431 X=84400.462
79	111+88.13	-100.00'	Y=547722.385 X=84480.202
112	112+03.15	-188.62'	Y=547719.202 X=84410.550
72	112+03.16	-100.00'	Y=547735.451 X=84487.620

PRIVATE CLAIM 26, WEST SIDE OF FOX RIVER
CITY OF DE PERE, BROWN COUNTY, WISCONSIN.



LOCATION SKETCH
(NOT TO SCALE)

City of De Pere, Wisconsin

**Request For Board of Public Works Action**

MEETING DATE: December 11, 2017

DEPARTMENT: Public Works

FROM: Scott Thoresen

SUBJECT: Consider Green Bay Metropolitan Sewerage District Lease Agreement Amendment*

The Municipal Service Center (MSC) currently does not have adequate indoor storage for vehicles and equipment resulting in vehicles and equipment to have to be stored outside. The storage of equipment outside causes maintenance issues and damages from the outdoor environment. In addition, the indoor storage at the MSC has become really congested resulting in staff having to shuffle around equipment on a regular basis in order to access equipment on any given day. Ultimately, there are future plans to expand the MSC so that all equipment can be stored inside but funding the expansion of the MSC is not a City priority at this time. In the meantime, staff has the opportunity to extend lease space to store vehicles and equipment indoors at the Green Bay Metropolitan Sewerage District's (GBMSD) facility in De Pere. The City entered into a lease agreement with GBMSD in 2017 that allowed storage from January 18, 2017 to June 30, 2017 for the amount of \$1,000.

Staff has worked with GBMSD to extend the short term lease. The only changes to the initial lease are:

- * Change from six (6) month lease to twelve (12) month lease
- * Increase in lease fee from \$1,000 to \$2,000
- * Less restrictive so the City can store seasonal vehicles and equipment throughout the year

Staff recommends approves entering into the amended lease agreement with the GBMSD. The City has sufficient funding for the lease agreement under outside services in the "Machinery & Equipment" program.

ATTACHMENTS:

- GBMSD Lease Agreement Amendment Nov 2017 (PDF)
- GBMSD Lease Agreement (PDF)

AMENDMENT TO LEASE AGREEMENT

This Amendment to the Lease Agreement dated January 18, 2017, is by and between:

IN WITNESS HEREOF, the parties hereto have duly executed this Agreement effective as of the date first set forth above.

Green Bay Metropolitan Sewerage District (Landlord)
2231 N. Quincy Street
Green Bay, WI 54302

And,

City of De Pere (Tenant)
335 S. Broadway
De Pere, WI 54115

Who agree as follows:

Revise the following language in existing heading 1. Term:

A. Landlord hereby leases the Leased Premises to Tenant, and Tenant hereby leases the same from Landlord, for an "Initial Term" beginning January 1, 2018 and ending December 31, 2018. Landlord shall use its best efforts to give Tenant possession as nearly as possible at the beginning of the Lease term. If Landlord is unable to timely provide the Leased Premises, rent shall abate for the period of delay. Tenant shall make no other claim against Landlord for any such delay.
B. Tenant may renew the Lease for one extended term of January to December or on a monthly basis as agreed to by both parties. Tenant shall exercise such renewal option, if at all, by giving written notice to Landlord not less than ninety (90) days prior to the expiration of the Initial Term and Landlord, if agreed, will allow for an additional renewal of the Lease. The renewal term shall be at the rental set forth below and otherwise upon the same covenants, conditions and provisions as provided in this Lease.

Revise the following language in existing heading 2. Rental:

A. Tenant shall pay to Landlord during the Initial Term rental of Two Thousand Dollars and no/100 (\$2,000.00) annual rent per year (or a monthly fee of \$167.00), payable at the beginning of the Lease Term. Payment shall be due in advance on the first day of the lease term to Landlord at 2231 N. Quincy Street Green Bay, WI 54302 or at such other place designated by written notice from Landlord or Tenant.

Revise the following language in existing heading 6. Alterations and Improvements:

Tenant, at no time, shall have the right, without Landlord's written consent, to remodel, redecorate, and make additions, improvements and replacements of and to all or any part of the Leased Premises during all times as Tenant is a Tenant during the Lease Term. Tenant shall have the right to place personal property, trade fixtures, equipment and other temporary installations in and upon the Leased Premises, limited to: vehicles and seasonal equipment at the Leased premises. All personal property and equipment, as indicated above, shall remain Tenant's property free and clear of any claim by Landlord. Tenant shall move such personal property and equipment into the Leased Premises in a time period of not more than seven (7) days from the beginning of the Lease Term and remove such personal property and equipment in a time period of not more than seven (7) days before the end of the Lease Term. Tenant shall minimize site access and removal requests during the Lease Term. Tenant has the right to remove the same at any time during the term of this Lease provided that all damage to the Leased Premises caused by such removal shall be repaired by Tenant at Tenant's expense.

Approved for
Green Bay Metropolitan Sewerage District

Approved for
City of De Pere

By: _____
Printed Name: Thomas W. Sigmund, P.E.
Title: Executive Director

By: _____
Printed Name: Michael J. Walsh
Title: Mayor

Attachments: Exhibit 1 (Commercial Lease-GBMSD1-17.pdf)

Lease Agreement

This Commercial Lease Agreement ("Lease") is made and effective January 3, 2017, by and between Green Bay Metropolitan Sewerage District ("Landlord") and the City of De Pere ("Tenant"). Landlord is the owner of land and improvements commonly known and numbered as 315 Leonard Street De Pere, WI 54115 described as follows (the "De Pere Facility"): Landlord makes available for lease a portion of the Building designated as De Pere Facility Solids Building located at 315 Leonard Street De Pere, WI 54115 (the "Leased Premises").

Landlord desires to lease the Leased Premises to Tenant, and Tenant desires to lease the Leased Premises from Landlord for the term, at the rental and upon the covenants, conditions and provisions herein set forth.

THEREFORE, in consideration of the mutual promises herein, contained and other good and valuable consideration, it is agreed:

1. Term.

A. Landlord hereby leases the Leased Premises to Tenant, and Tenant hereby leases the same from Landlord, for an "Initial Term" beginning January 18, 2017 and ending June 30, 2017. Landlord shall use its best efforts to give Tenant possession as nearly as possible at the beginning of the Lease term. If Landlord is unable to timely provide the Leased Premises, rent shall abate for the period of delay. Tenant shall make no other claim against Landlord for any such delay.

B. Tenant may renew the Lease for one extended term of January to June. Tenant shall exercise such renewal option, if at all, by giving written notice to Landlord not less than ninety (90) days prior to the expiration of the Initial Term and Landlord, if agreed, will allow for an additional renewal of the Lease. The renewal term shall be at the rental set forth below and otherwise upon the same covenants, conditions and provisions as provided in this Lease.

2. Rental.

A. Tenant shall pay to Landlord during the Initial Term rental of One Thousand Dollars and no/100 (\$1,000.00) annual rent per year, payable at the beginning of the Lease Term. Payment shall be due in advance on the first day of the lease term to Landlord at 2231 N. Quincy Street Green Bay, WI 54302 or at such other place designated by written notice from Landlord or Tenant.

B. The rental for any renewal lease term, if created as permitted under this Lease, shall be Annual Rent in Renewal Term per year payable at the beginning of the Lease Term.

3. Use

Notwithstanding the forgoing, Tenant shall not use the Leased Premises for the purposes of storing, manufacturing or selling any explosives, flammables or other inherently dangerous substance, chemical, thing or device except such storage as may be incidental to the keeping of the vehicles and equipment on the Leased Premises as provided in Section 6 Alterations and Improvements herein.

4. Sublease and Assignment.

Tenant shall not have any right, without Landlord's consent, to assign this Lease to a corporation or other entity with which Tenant may merge or consolidate, to any subsidiary of Tenant, to any corporation under common control with Tenant, or to a purchaser of substantially all of Tenant's assets. Except as set forth above, Tenant shall not sublease all or any part of the Leased Premises, or assign this Lease in whole or in part without Landlord's consent.

5. Repairs.

During the Lease term, Tenant shall make, at Tenant's expense, all necessary repairs to the Leased Premises. Repairs shall include such items as routine repairs of floors, walls, ceilings, and other parts of the Leased Premises damaged or worn through normal occupancy, except for major mechanical systems or the roof, subject to the obligations of the parties otherwise set forth in this Lease.

6. Alterations and Improvements.

Tenant, at no time, shall have the right, without Landlord's written consent, to remodel, redecorate, and make additions, improvements and replacements of and to all or any part of the Leased Premises during all times as Tenant is a Tenant during the Lease Term. Tenant shall have the right to place personal property, trade fixtures, equipment and other temporary installations in and upon the Leased Premises, limited to: storage of three (3) automobiles, four (4) leaf loaders, and two (2) sweepers at the Leased premises. All personal property and equipment, as indicated above, shall remain Tenant's property free and clear of any claim by Landlord. Tenant shall move such personal property and equipment into the Leased Premises in a time period of not more than seven (7) days from the beginning of the Lease Term and remove such personal property and equipment in a time period of not more than seven (7) days before the end of the Lease Term. Tenant shall minimize site access and removal requests during the Lease Term. Tenant has the right to remove the same at any time during the term of this Lease provided that all damage to the Leased Premises caused by such removal shall be repaired by Tenant at Tenant's expense.

7. Property Taxes.

Landlord shall pay, prior to delinquency, all general real estate taxes and installments of special assessments coming due during the Lease term on the Leased Premises, and all personal property taxes with respect to Landlord's personal property, if any, on the Leased Premises. Tenant shall be responsible for paying all personal property taxes with respect to Tenant's personal property at the Leased Premises.

8. Insurance.

A. If the Leased Premises or any other part of the Building is damaged by fire or other casualty resulting from any act or negligence of Tenant or any of Tenant's agents, employees or invitees, rent shall not be diminished or abated while such damages are under repair, and Tenant shall be responsible for the costs of repair not covered by insurance.

B. Landlord shall maintain fire and extended coverage insurance on the Building and the Leased Premises in such amounts as Landlord shall deem appropriate. Tenant shall be responsible, at its expense, for fire and extended coverage insurance on all of its personal property and equipment located in the Leased Premises.

C. Tenant and Landlord shall, each at its own expense, maintain a policy or policies of comprehensive general liability insurance with respect to the respective activities of each in the Building with the premiums thereon fully paid on or before the Lease Term, such insurance to afford minimum protection of not less than \$1,000,000 combined single limit coverage of bodily injury, property damage or combination thereof. Tenant shall provide Landlord with current Certificates of Insurance evidencing Tenant's compliance with this Paragraph. Landlord shall not be required to maintain insurance against thefts, with regard to Tenant's personal property and equipment, within the Leased Premises or the Building.

9. Utilities.

Landlord shall pay all charges for water, sewer, gas, electricity, telephone and other services and utilities on the Leased Premises during the term of this Lease unless otherwise expressly agreed in writing by Landlord. Tenant shall not use any equipment or devices that utilizes excessive electrical energy or which may, in Landlord's reasonable opinion, overload the wiring or interfere with electrical services to other tenants.

10. Signs.

Tenant shall have no right to place on the Leased Premises, any signs.

11. Entry.

Landlord shall have the right to enter upon the Leased Premises at reasonable hours to inspect the same, provided Landlord shall not thereby unreasonably interfere with Tenant's storage of personal property and equipment on the Leased Premises.

12. Building Rules.

Tenant will comply with the rules of the Building and or requests by Landlord from time to time and will cause all of its agents, employees, invitees and visitors to do so; all changes to such rules will be sent by Landlord to Tenant in writing.

13. Damage and Destruction.

Subject to Section 8 A. above, if the Leased Premises or any part thereof or any appurtenance thereto is so damaged by fire, casualty or structural defects that the same cannot be used for Tenant's purposes, then Tenant shall have the right within ninety (90) days following damage to elect by notice to Landlord to terminate this Lease as of the date of such damage. In the event of minor damage to any part of the Leased Premises, and if such damage does not render the Leased Premises unusable for Tenant's purposes, Landlord shall promptly repair such damage at the cost of the Landlord. In making the repairs called for in this paragraph, Landlord shall not be liable for any delays resulting from strikes, governmental restrictions, inability to obtain necessary materials or labor or other matters which are beyond the reasonable control of Landlord. Tenant shall be relieved from paying rent and other charges during any portion of the Lease term that the Leased Premises are inoperable or unfit for occupancy, or use, in whole or in part, for Tenant's purposes. Rentals and other charges paid in advance for any such periods shall be credited on the next ensuing payments, if any, but if no further payments are to be made, any such advance payments shall be refunded to Tenant. The provisions of this paragraph extend not only to the matters aforesaid, but also to any occurrence which is beyond Tenant's reasonable control and which renders the Leased Premises, or any appurtenance thereto, inoperable or unfit for occupancy or use, in whole or in part, for Tenant's purposes.

14. Default.

If default shall at any time be made by Tenant in the payment of rent when due to Landlord as herein provided, and if said default shall continue for fifteen (15) days after written notice thereof shall have been given to Tenant by Landlord, or if default shall be made in any of the other covenants or conditions to be kept, observed and performed by Tenant, and such default shall continue for thirty (30) days after notice thereof in writing to Tenant by Landlord without correction thereof then having been commenced and thereafter diligently prosecuted, Landlord may declare the term of this Lease ended and terminated by giving Tenant written notice of such intention, and if possession of the Leased Premises is not surrendered, Landlord may reenter said premises. Landlord shall have, in addition to the remedy above provided, any other right or remedy available to Landlord on account of any Tenant default, either in law or equity. Landlord shall use reasonable efforts to mitigate its damages.

15. Quiet Possession.

Landlord covenants and warrants that upon performance by Tenant of its obligations hereunder, Landlord will keep and maintain Tenant in exclusive, quiet, peaceable and undisturbed and uninterrupted possession of the Leased Premises during the term of this Lease.

16. Condemnation and or an Emergency.

If any legally, constituted authority condemns the Building or such part thereof which shall make the Leased Premises unsuitable for leasing, or Landlord requires the immediate removal of the Lease Premises for an Emergency, this Lease shall cease when the public authority takes possession or the Landlord declares and Emergency, and Landlord and Tenant shall account for rental as of that date. Such termination shall be without prejudice to the rights of either party to recover compensation from the condemning authority for any loss or damage caused by the condemnation. Neither party shall have any rights in or to any award made to the other by the condemning authority.

17. Notice.

Any notice required or permitted under this Lease shall be deemed sufficiently given or served if sent by United States certified mail, return receipt requested, addressed as follows:
If to Landlord to:

Green Bay Metropolitan Sewerage District,
 Attention: Thomas Sigmund, Executive Director
 2231 N. Quincy Street
 Green Bay, WI 54302

If to Tenant to:
 City of De Pere
 Attention: Al Luberd, Street Superintendent
 335 S. Broadway
 De Pere, WI 54115

Landlord and Tenant shall each have the right from time to time to change the place notice is to be given under this paragraph by written notice thereof to the other party.

18. Waiver.

No waiver of any default of Landlord or Tenant hereunder shall be implied from any omission to take any action on account of such default if such default persists or is repeated, and no express waiver shall affect any default other than the default specified in the express waiver and that only for the time and to the extent therein stated. One or more waivers by Landlord or Tenant shall not be construed as a waiver of a subsequent breach of the same covenant, term or condition.

19. Memorandum of Lease.

The parties hereto contemplate that this Lease should not and shall not be filed for record, but in lieu thereof, at the request of either party, Landlord and Tenant shall execute a Memorandum of Lease to be recorded for the purpose of giving record notice of the appropriate provisions of this Lease.

20. Headings.

The headings used in this Lease are for convenience of the parties only and shall not be considered in interpreting the meaning of any provision of this Lease.

21. Successors.

The provisions of this Lease shall extend to and be binding upon Landlord and Tenant and their respective legal representatives, successors and assigns.

22. Consent.

Landlord shall not unreasonably withhold or delay its consent with respect to any matter for which Landlord's consent is required or desirable under this Lease.

23. Performance.

If there is a default with respect to any of Landlord's covenants, warranties or representations under this Lease, and if the default continues more than fifteen (15) days after notice in writing from Tenant to Landlord specifying the default, Tenant may, at its option and without affecting any other remedy hereunder, cure such default and deduct the cost thereof from the next accruing installment or installments of rent payable hereunder until Tenant shall have been fully reimbursed for such expenditures, together with interest thereon at a rate equal to the lessor of twelve percent (12%) per annum or the then highest lawful rate. If this Lease terminates prior to Tenant's receiving full reimbursement, Landlord shall pay the unreimbursed balance plus accrued interest to Tenant on demand.

24. Compliance with Law.

Tenant shall comply with all laws, orders, ordinances and other public requirements now or hereafter pertaining to Tenant's use of the Leased Premises. Landlord shall comply with all laws, orders, ordinances and other public requirements now or hereafter affecting the Leased Premises.

25. **Final Agreement.**

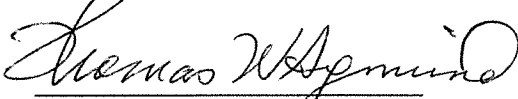
This Agreement terminates and supersedes all prior understandings or agreements on the subject matter hereof. This Agreement may be modified only by a further writing that is duly executed by both parties.

26. **Governing Law.**

This Agreement shall be governed, construed and interpreted by, through and under the Laws of the State of Wisconsin.

IN WITNESS WHEREOF, the parties have executed this Lease as of the day and year first above written.

GREEN BAY METROPOLITAN SEWERAGE DISTRICT



By: Thomas W. Sigmund, P.E.
Its: Executive Director

CITY OF DE PERE

(Authorized Signatory)

By:

(Print Name)

Its:

(Individual's Title)

City of De Pere, Wisconsin

**Request For Board of Public Works Action**

MEETING DATE: December 11, 2017

DEPARTMENT: Public Works

FROM: Scott Thoresen

SUBJECT: Consider Verizon's Amendment to Current Lease Agreement on Merrill Water Tower*

The City required Verizon to install a storm sewer lateral to drain their sump pump from their building at the Merrill Water Tower site to the City's storm sewer. As part of the requirement for the installation of the storm sewer lateral, Verizon needed a lease amendment (See attached) for the storm water drainage.

Staff recommends approving the proposed amendment to Verizon's current lease for Merrill Street water tower.

ATTACHMENTS:

- Verizon Lease Amendment 12-5-17 (PDF)

**AMENDMENT TO TOWER LEASE AGREEMENT
BETWEEN THE CITY OF DE PERE AND VERIZON WIRELESS**
(Merrill Tower – Storm Water)

THIS AMENDMENT to Tower Lease Agreement (“Amendment”) is made as of the date of the last party to sign below, by and between the City of De Pere, a Wisconsin municipal corporation, hereinafter referred to as Landlord, and Verizon Wireless Personal Communications LP, a Wisconsin limited liability company d/b/a Verizon Wireless, with an address at One Verizon Way, Mail Stop 4AW100, Basking Ridge, New Jersey 07920, hereinafter referred to as Tenant.

WHEREAS, Landlord and Tenant previously entered into a Tower Lease Agreement dated August 15, 1997 (the “Agreement”); and

WHEREAS, the parties wish to amend the Agreement to update Tenant’s corporate identity, to provide for an easement to Tenant for storm water management purposes, and to authorize connection to Landlord’s storm water sewer system.

NOW THEREFORE, in consideration of the foregoing and mutual covenants and promises contained herein and other good and valuable consideration, the receipt and sufficiency of which are acknowledged, the parties wish to amend the Agreement to include the following:

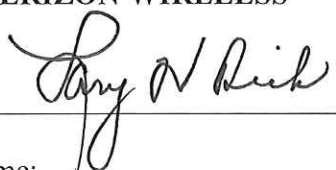
1. All references to “PrimeCo Personal Communications, L.P.” in the Agreement are changed to “Verizon Wireless Personal Communications LP d/b/a Verizon Wireless.”
2. The address set forth in Paragraph 13 of the Agreement for notices to be given to Tenant is hereby amended as follows:

Verizon Wireless: Verizon Wireless Personal Communications LP
 d/b/a Verizon Wireless
 180 Washington Valley Road
 Bedminster, New Jersey 07921
 Attention: Network Real Estate

3. Subject to the terms and conditions set forth in this Amendment, Landlord grants to Tenant a 15 foot storm water easement as shown on page 2 of the attached site survey document, attached and incorporated as Exhibit A, for the sole purpose of constructing, maintaining, repairing and removing a storm water lateral drainage pipe for conveying storm water collected at Tenant's equipment shelter located on the leased premises described in the Agreement. The storm water lateral shall be used solely to convey storm water from Tenant's leased premises and for no other reason.
4. Tenant is furthermore granted permission to connect such storm water lateral to Landlord's water tank overflow drain for discharge of Tenant's storm water into Landlord's public storm sewer located within the Merrill Street right-of-way. The City Building Inspector is required to be on site at the time the connection to the Landlord's facility is made.
5. Tenant shall construct such drainage lateral in compliance with all plumbing codes and in strict conformity with the proposed Installation Detail as shown on Exhibit A. Detailed as-built plans shall be provided to Landlord within 30 days of the final execution of this Amendment.
6. Should Tenant's connection to the overflow drain disrupt Landlord's use of such drain, Landlord and Tenant agree to work together to determine the cause or causes of such disruption. In the event it is determined that Tenant's connection has damaged Landlord's drain or that Tenant's connection has affected Landlord's use of the drain, Tenant agrees to pay all costs associated with repair or correction of the same. If it is determined that the drain cannot be repaired or corrected, Tenant agrees to redirect its lateral for a direct connection to Landlord's storm sewer in the Merrill Street right-of-way and abandon its connection to Landlord's drain, all as approved by Landlord in its reasonable discretion.
7. Construction of the storm lateral will not cause damage to or the need to remove any tree or shrub located on Landlord's property. Tenant shall restore all areas disturbed by installation of the lateral, including seeding and watering and replacing if needed any grass or other landscaping.
8. Tenant shall become a member of Diggers Hotline for such lateral and construct the same of material which is locatable for other construction projects in the vicinity.
9. Should Landlord need to repair or replace the overflow drain, Tenant agrees to remove and replace its connection to such drain at its own cost and expense. Landlord shall give Tenant reasonable notice of its intent to repair or replace its drain.

10. Upon termination of the Agreement or removal of the storage shed on the leased premises, Tenant shall completely remove the storm water lateral and the connection to the overflow drain in accordance with all regulations then in place regarding the same, and shall restore the site to pre-removal condition. No trees or shrubs shall be damaged or destroyed in the removal of the storm lateral. The City Building Inspector shall be on site at the time the overflow drain connection is removed.
11. This Amendment and the Amendment granted under it shall terminate upon termination of the Agreement or removal of the storage shed.
12. Tenant acknowledges that it is being permitted to connect to Landlord's water tank overflow drain and that such drain connects to Landlord's storm sewer pipe in Merrill Street right-of-way. Tenant is further aware that such overflow drain is used by Landlord when it desires to drain the elevated water tank and that the water from the tank drains into the storm sewer. Tenant acknowledges that there may be times and circumstances when the drain and storm sewer are at capacity, whether due to Landlord's draining of its elevated water tank or for other reasons, and Tenant may wish to have back-flow or check valves installed to prevent flow from tank drainage into its lateral. Tenant agrees to save and hold Landlord harmless from any and all claims, damage or injury to Tenant's property or its employees, agents, contractors or third parties in the event the overflow drain or storm sewer is at capacity and prevents drainage from or backs up into Tenant's lateral.
13. Tenant shall reimburse Landlord its actual costs involved incurred in connection with the installation and the removal of the storm lateral and overflow drain connection, including but not limited to site plan reviews, site inspections, and other actual expenses.
14. All other terms, conditions, requirements, and obligations found in the Agreement, unless specifically amended by this Amendment, shall remain in full force and effect.

**VERIZON WIRELESS PERSONAL
COMMUNICATIONS LP**
d/b/a **VERIZON WIRELESS**

By: 

Name: _____

Title: Larry W. Rick
Director Network Field Engineering

Date: 11/16/17

CITY OF DE PERE

By: _____

Name: Michael J. Walsh

Title: Mayor

Date: _____

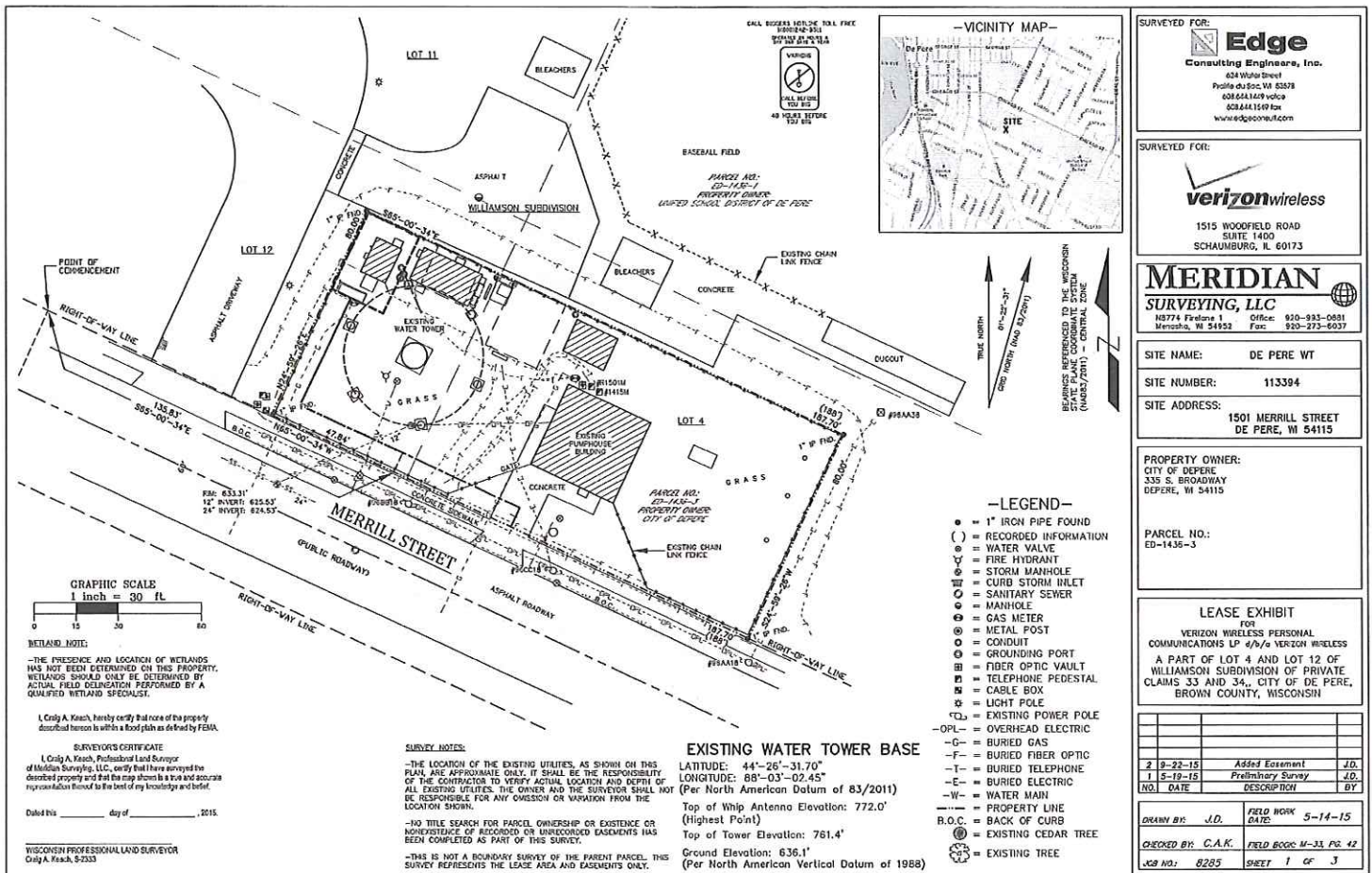
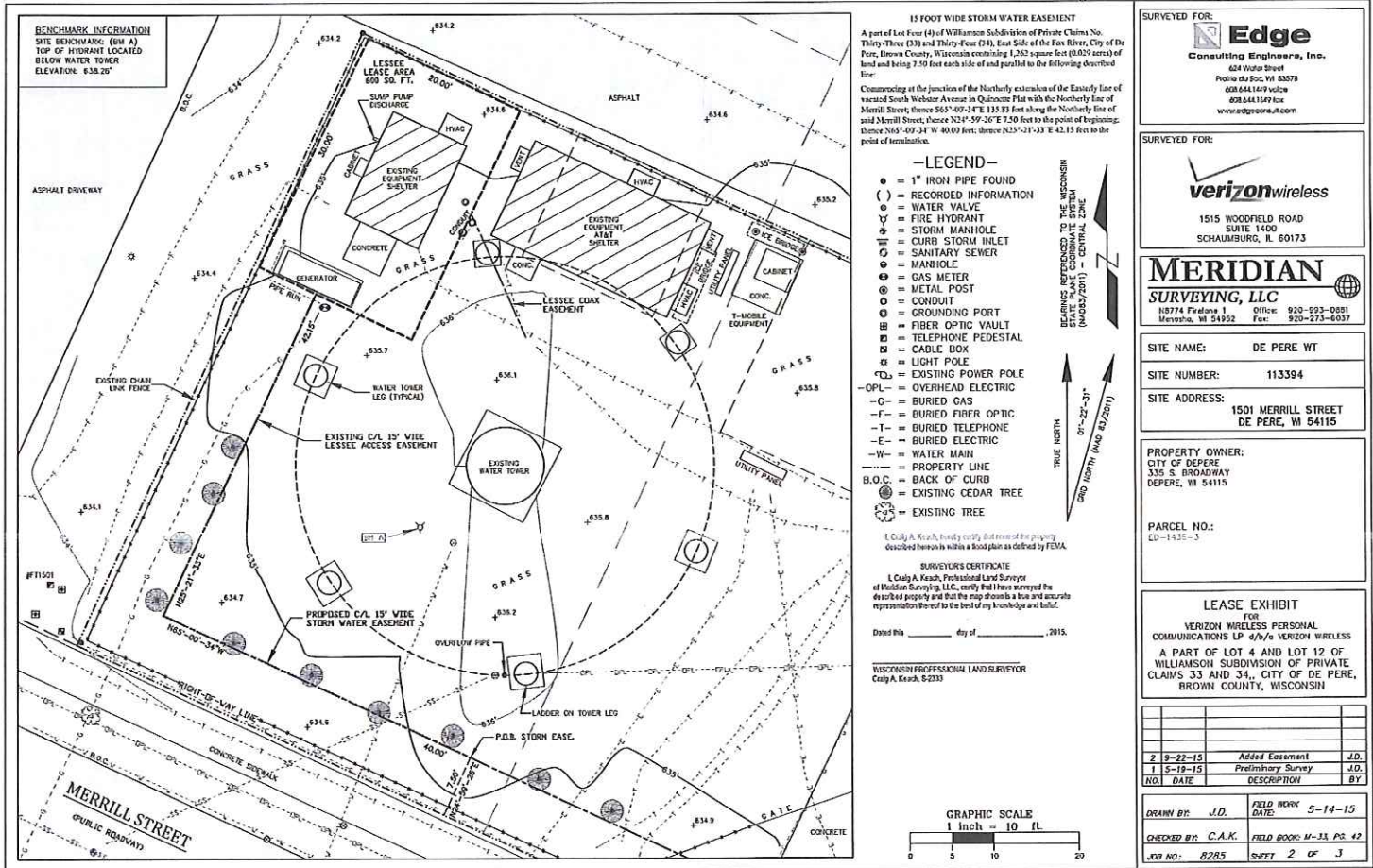
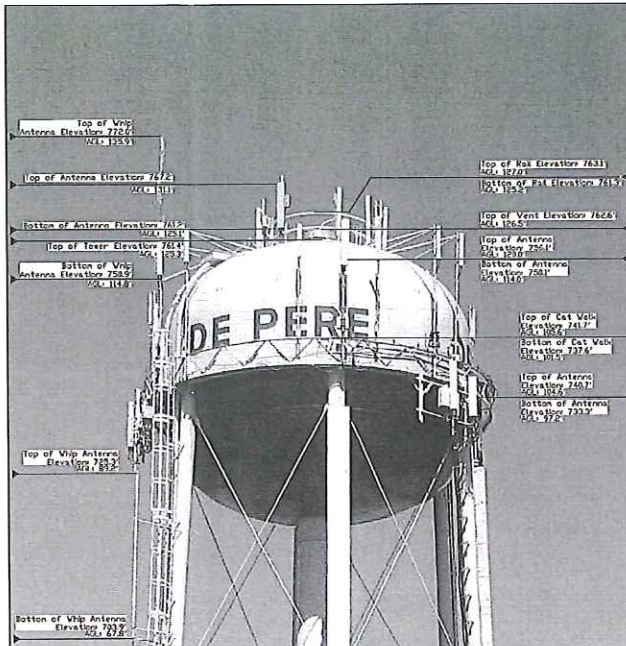
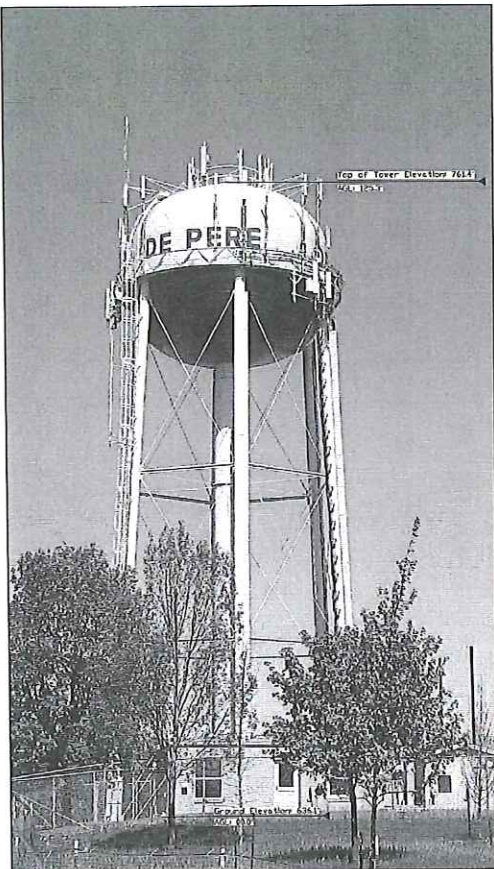
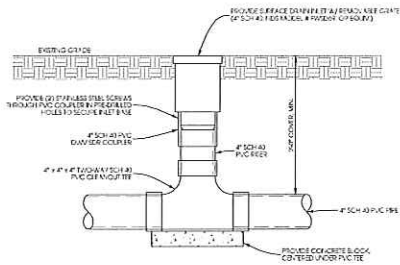
Exhibit A - Verizon Tower Lease Amendment
Page 1 of 3

Exhibit A - Verizon Tower Lease Amendment
Page 2 of 3

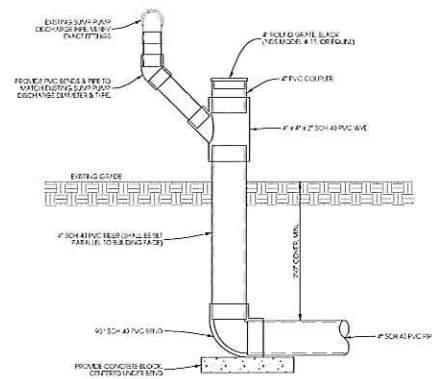
SURVEYED FOR:					
 Edge Consulting Engineers, Inc. 624 Water Street Pacific Grove, CA 93950 808-644-1675 voice 808-644-1647 fax www.edgeconsult.com					
SURVEYED FOR:					
 1515 WOODFIELD ROAD SUITE 1400 SCHAUMBURG, IL 60173					
MERIDIAN SURVEYING, LLC N37°14' PETERS I Office: 920-993-0881 Maricopa, WI 54952 Fax: 920-273-6037					
SITE NAME:	DE PERE WT				
SITE NUMBER:	113394				
SITE ADDRESS:	1501 MERRILL STREET DE PERE, WI 54115				
PROPERTY OWNER:					
CITY OF DEPERE, 335 S BROADWAY DEPERE, WI 54115					
PARCEL NO.: ED-1135-3					
LEASE EXHIBIT					
FOR VERIZON WIRELESS PERSONAL COMMUNICATIONS LP s/b/a Verizon Wireless					
A PART OF LOT 4 AND LOT 12 OF WILLIAMSON SUBDIVISION OF PRIVATE CLAIMS #3 AND .34., CITY OF DE PERE, BROWN COUNTY, WISCONSIN					
ID#	DRAWN BY	CHECKED BY	DATE	DESCRIPTION	JOB.
1	5-22-15	Added Easement	J.D.		
2	5-19-15	Preliminary Survey	J.D.		
NO.	DATE	DESCRIPTION	B.Y.		
DRAWN BY:	J.D.	FIELD WORK DATE:	5-14-15		
CHECKED BY:	C.A.K.	FILE BOOK	N-34, PG. 42		
JOB NO.:	8285	SHEET	3 OF 3		



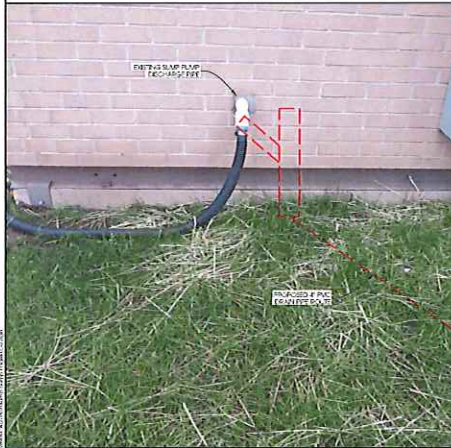




A YARD INLET DETAIL
SCALE: 11 x 17 - 1" = 1'-0"
22 x 34 - 1" = 0'-6"



B DISCHARGE PIPE CONNECTION DETAIL
SCALE: 11 x 17 - 1" = 1'-0"
22 x 34 - 1" = 0'-6"



SUMP DISCHARGE FROM SHELTER



PROPOSED DRAIN ROUTING



EXISTING OVERFLOW DRAIN FROM TOWER BASE



INSTALLATION DETAILS
DE PERE WT [113394]

DATE:	
PROJECT NO.:	
CLIENT:	
LOCATION:	
SCALE:	
DATE:	
BY:	
CHECKED BY:	
DATE:	
BY:	
CHECKED BY:	
DATE:	

C-2

City of De Pere, Wisconsin

**Request For Board of Public Works Action**

MEETING DATE: December 11, 2017

DEPARTMENT: Public Works

FROM: Eric Rakers

SUBJECT: Consider Award of Contract for Project 17-20 Claude Allouez Bridge Repairs.*

The Engineering Department received bids on Project 17-20 Claude Allouez Bridge Repairs on Thursday, November 2, 2017. This work is for repairing cable supports outside of the pedestrian guard rails and repairing and cleaning railings adjacent to the roadway after two recent crashes. The bids received were as follows:

Contractor	Amount
Janke General Contractors, Inc.	\$31,513.00

The budgeted amount from the capital improvement budget is \$50,000.00. Staff's recommendation is to award the bid to Janke General Contractors, Inc. in the amount of \$31,513.00.

ATTACHMENTS:

- 17-20 Bid Tab(PDF)

**PROJECT 17-20 CLAUDE ALLOUEZ BRIDGE REPAIRS
BID TAB**



				BIDDER NO. 1	
				Janke General Contractors, Inc.	
ITEM	DESCRIPTION	UNIT	QTY	UNIT PRICE	AMOUNT BID
SC-01	Cable Railing Repair	EA	8	\$2,650.00	\$ 21,200.00
SC-02	Aluminum Traffic Rail Repair at STA 85+82	LS	1	\$4,300.00	\$ 4,300.00
SC-03	Clean Rails of Paint & Debris and Remove Burrs at STA 81+78	LS	1	\$3,700.00	\$ 3,700.00
SC-04	Traffic Control (Project)	LS	1	\$2,313.00	\$ 2,313.00
Total Amount Bid					\$ 31,513.00

City of De Pere, Wisconsin

**Request For Board of Public Works Action**

MEETING DATE: December 11, 2017

DEPARTMENT: Public Works

FROM: Eric Rakers

SUBJECT: Consider Award of Contract for Project 17-21 City of De Pere Sign Bridge.*

The Engineering Department received bids on Project 17-21 City of De Pere Sign Bridge on Thursday, November 30, 2017. This work is for removing the existing sign bridge and installing a new sign bridge on Reid Street. The bids received were as follows:

Contractor	Amount
Bodart Electrical Service, Inc.	\$63,336.00
Highway Landscapers, Inc.	\$80,260.00
Janke General Contractors, Inc.	\$85,000.00
Milbach Construction Services, Co.	\$125,265.00

The budgeted amount from undesignated reserve funds is \$60,000.00. Of this amount, \$9,365.00 was awarded to GRAEF-USA, Inc. for the sign bridge design and construction management. This leaves \$50,635.00 for construction. Staff's recommendation is to award the bid to Bodart Electrical Service, Inc. in the amount of \$63,336.00 with an approximate 10% contingency and assign an additional \$19,000 from undesignated reserve funds to the project.

ATTACHMENTS:

- 17-21 Bid Tab(PDF)

BID TAB
PROJECT 17-21 CITY OF DE PERE SIGN BRIDGE



				BIDDER NO. 1		BIDDER NO. 2		BIDDER NO. 3		BIDDER NO. 4	
				BODART ELECTRICAL SERVICE, INC.		HIGHWAY LANDSCAPERS, INC.		JANKE GENERAL CONTRACTORS, INC.		MILBACH CONSTRUCTION SERVICES, CO.	
ITEM	DESCRIPTION	UNIT	QTY	UNIT PRICE	AMOUNT BID	UNIT PRICE	AMOUNT BID	UNIT PRICE	AMOUNT BID	UNIT PRICE	AMOUNT BID
SC-01	Remove Existing Sign Bridge and Provide New Sign Bridge and All Restoration	LS	1	\$ 63,336.00	\$ 63,336.00	\$ 80,260.00	\$ 80,260.00	\$ 85,000.00	\$ 85,000.00	\$ 125,265.00	\$ 125,265.00
TOTAL AMOUNT BID					\$ 63,336.00		\$ 80,260.00		\$ 85,000.00		\$ 125,265.00

Attachment: 17-21 Bid Tab (6367 : Consider Award of Contract for Project 17-21 City of De Pere Sign

City of De Pere, Wisconsin

**Request For Board of Public Works Action**

MEETING DATE: December 11, 2017

DEPARTMENT: Public Works

FROM: Eric Rakers

SUBJECT: Consider Award of Contract for Project 17-22 Community Center Boiler Rebid.*

ATTACHMENTS:

- 17-22 Bid Tab(PDF)

BID TAB
PROJECT 17-22 COMMUNITY CENTER BOILER REPLACEMENT REBID



				BIDDER NO. 1		BIDDER NO. 2		BIDDER NO. 3	
				TWEET/GAROT MECHANICAL, INC.		JUST SERVICE, INC.		JOHNSON & JONET MECHANICAL CONTRACTORS, INC.	
ITEM	DESCRIPTION	UNIT	QTY	UNIT PRICE	AMOUNT BID	UNIT PRICE	AMOUNT BID	UNIT PRICE	AMOUNT BID
SP-01	Boiler Replacement	LS	1	\$ 45,076.00	\$ 45,076.00	\$ 47,395.00	\$ 47,395.00	\$ 51,800.00	\$ 51,800.00
SP-02	Existing Boiler Repairs	LS	1	\$ 14,546.00	\$ 14,546.00	\$ 21,595.00	\$ 21,595.00	\$ 17,200.00	\$ 17,200.00
TOTAL AMOUNT BID					\$ 59,622.00		\$ 68,990.00		\$ 69,000.00

Attachment: 17-22 Bid Tab (6448 : Consider Award of Contract for Project 17-22 Community Center Boiler