



PROJECT MANUAL
FOR
TOWN OF KEWASKUM
HIGHLAND DRIVE
Mohawk Rd (CTH H) – W. Moraine Drive
W. MORaine DRIVE
Highland Drive – CTH V

I hereby certify that this plan and specification was prepared by me or under my direct supervision, and that I am a duly registered Professional Engineer under the laws of the State of Wisconsin.



Jacob Rosbeck, P.E. – Project Engineer

Date: 10/15/2026 Reg. No. 42432-6

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SECTION 00030

NOTICE TO BIDDERS

Project Name: Highland Drive / W Moraine Drive - Road Reconstruction
ARIP Project Number: A00086
Project ID: 39508802514

The Town of Kewaskum will receive Bids for the **Highland Drive / W Moraine Drive - Road Reconstruction** as follows:

Reconstructing 1.73 miles of Highland Drive between Mohawk Road (CTH H) to W Moraine Drive and an alternate bid for 0.94 miles of W Moraine Drive from Highland Drive to CTH V.

The project generally consists of:

- Roadway reconditioning and preparation
- Gravel (approximately 26' wide, ≥10" thick)
- Placement of approximately 4 inches of Hot Mix Asphalt Pavement (HMA)
- 11' travel width per lane
- Unclassified excavation
- Culvert work as required
- Restoration of driveway aprons and shoulders to blend to the new road profile
- Associated roadway improvements and incidental construction

PROJECT MANUAL: Project manuals will be available after 9:00 AM on Thursday, October 15, 2026. Project manuals including contract documents, bidding documents, plans, and specifications may be obtained on the town website at www.townofkewaskumwi.gov, or by contacting Anne Trautner, Town Clerk at 262-626-2566 or by email at clerk@townofkewaskumwi.gov. Hard copies of the project manual will be available for review and may be purchased for a \$20 non-refundable fee at Parish Survey & Engineering, 122 Wisconsin Street, West Bend, WI 53095. A \$5 shipping and handling charge will apply for hard copy manuals that are mailed.

QUESTIONS: Questions should be submitted via email no later than 12:00 noon on Monday, November 23, 2026. Direct comment or questions regarding this project to Jacob Rosbeck of Parish Survey & Engineering at jrosbeck@parishse.com. Answers will be sent to all on the bidders list no later 5:00 PM on Wednesday November 25, 2026. The names of Contractors submitting questions will not be disclosed. Personal visits and phone calls will not be allowed.

BIDS: All Bids shall be addressed to Anne Trautner, Town Clerk, and shall be enclosed with the name and address of the Bidder and the contract for which the Bid is being submitted on the outside of the sealed envelope. Bids can be mailed to Anne Trautner, Town Clerk, PO Box 484, Kewaskum, WI 53040, or can be placed in the Kewaskum Community Center drop box, located at 9019 Kettle Moraine Drive, Kewaskum, WI 53040.

BID SECURITY: Each Bid shall include a Bid Bond, certified check, or cashier's check payable to the Town of Kewaskum in an amount not less than five percent (5%) of the total Bid, including the Base Bid and the Alternate Bid submitted. A Bid without the required Bid Security shall be rejected as nonresponsive. See Section 00100 for detailed requirements.

TIME: Sealed Bids will be received until 5:00 PM on Monday, November 30, 2026, at the Kewaskum Community Center. Bids will be publicly opened and read aloud at the Town Board Meeting, which begins at 6:00 PM.

START & COMPLETION DATE: Work shall begin no earlier than Monday, May 3, 2027, weather permitting. All work shall be completed by Friday, October 15, 2027. Failure to meet this deadline will result in the assessment of liquidated damages as specified by the Contract Documents.

QUALIFICATION STATEMENT: Bidders shall be required to submit a statement of financial ability, equipment, and experience in the work prescribed. This Pre-Qualification Statement shall be submitted to the Town of Kewaskum no less than five days prior to the opening of bids. Failure to submit a pre-

qualification statement at least five days prior to bid opening will result in the rejection of the bid. Pre-Qualification Statement forms can be obtained from Parish Survey & Engineering, LLC. Review of qualification statements will be made by the Town of Kewaskum prior to award. Those firms whose qualifications are found to be unacceptable shall be disqualified from consideration of award.

BID REJECTION: The Town of Kewaskum reserves the right to reject any and all Bids, waive any informalities or irregularities in Bidding or accept any Bid or Bids which, in the opinion of Parish Survey & Engineering, shall serve the Owner's best interest.

BID WITHDRAWAL: No Bid may be withdrawn for a period of forty-five (45) days after the time and date set for the opening thereof, without the consent of Town of Kewaskum.

AWARD OF CONTRACT: Authorization to award to the selected qualified, responsive and responsible low bidder will be granted by the end of the day on Monday, November 30, 2026. The selected contractor shall, within ten (10) calendar days after notification, deliver three executed copies of the Agreement, separate Performance and Payment Bonds each in the amount of one hundred percent (100%) of the awarded Contract Price, certificates of insurance and required endorsements, and other required post-award documents. The awarded Contract Price includes the Base Bid and only alternates accepted by the Town. Surety qualifications and bond forms are specified in Sections 00100 and 00800.

END OF SECTION

SECTION 00100

INSTRUCTION TO BIDDERS

DEFINED TERMS

Terms used in these Instructions to Bidders shall have the meanings assigned in the Contract Documents, including the WisDOT Specifications incorporated by Section 00700, as modified by the Supplementary Conditions and the express definitions in these Instructions and Section 00500. "Owner" means the Town of Kewaskum. "Engineer" means the party identified as ENGINEER in Section 00500, acting within the authority assigned by the Contract Documents. "Bidder" means one who submits a Bid in accordance with these Instructions. "Successful Bidder" means the lowest qualified, responsible, and responsive Bidder to whom the Owner awards the Contract.

COPIES OF BIDDING DOCUMENTS

The Plans, Specifications, and Contract Documents (PS & CD), which include the Official Notice; Instructions to Bidders; General and Supplementary Conditions; Performance Bond; Payment Bond; Addenda; Specifications; Plans; Drawings; and all Amendments, Modifications, Change Orders, and Supplements issued on or after the Effective Date of the Agreement are on file at the Town of Kewaskum. Bidders may examine them and/or may obtain complete sets at this office, as stated in the Official Notice.

Each Bidder shall consider the foregoing PS & CD, applying to this work, as a part of every Bid which he submits and shall consider the PS & CD as a part of every Agreement subsequently executed for doing the work referred to herein, as fully as though they had been set forth in the body of the Bid and the Agreement.

QUALIFICATION STATEMENT

Bidders shall be required to submit a statement of financial ability, equipment, and experience in the work prescribed. This Pre-Qualification Statement shall be submitted to the office of the Owner no less than five days prior to the opening of bids. Pre-Qualification Statement forms can be obtained from the Town of Kewaskum.

The Bidder shall also show that he is fully prepared to with the necessary capital to commence the work or furnish the material, without delay, and that he is prepared to **complete the work within the time specified in the PS & CD** and in accordance with the Agreement.

EXAMINATION OF CONTRACT DOCUMENTS AND THE SITE

Bidders **must** satisfy themselves, by personal examination of the location of the proposed work, and by such other means as they prefer, as to the character of the work to be done, the accuracy of material quantities, and the intent of the PS & CD. After the submission of the Bid, the Owner will not entertain any complaint or claim of misunderstanding with regard to the schedule, quantities, or to the nature of the work to be done.

Neither the Town of Kewaskum, its agents, or employees make any representation as to the existence or nature of surface or subsurface difficulties, obstructions, or obstacles which the Successful Bidder may encounter in the course of completing the work, whether shown on the Plans or not. The Bid price for the work described by the PS & CD must cover satisfactory completion thereof on this condition. In no event shall a Bidder hold the Owner, its agents, or employees responsible for the accuracy of test borings, if furnished, heretofore or hereafter made or any representations as to the nature of the soil.

Bidders must acquaint themselves, whenever necessary, with the condition of the ground on and through which they are to do the work, to determine whether any excavation may be in rock, hard-pan, quick-sand or soft ground, and the existence and nature of all surface or sub-surface difficulties, obstructions or obstacles, whether or not shown on the plans. Bidders should be familiar with all of the requirements of the PS & CD for this work, so that they can submit an intelligent bid.

All Bidders are strongly encouraged to visit the construction site so as to acquaint themselves with the scope of work and to perform their own material quantity take-offs. However, trespassing onto private property outside of road right-of-way areas is not allowed. Failure to perform such a site visit does not relieve the bidder from its responsibilities, bid accuracy, knowledge of scope of work, and full compliance with all contract requirements. Should a bidder find a significant (10%) error in the contract quantities, it is

incumbent upon them to bring this to the Owner's attention prior to bid opening, so appropriate action can be taken. Failure to do so does not obligate the Owner for any additional cost and expense incurred by the contractor.

MATERIAL AND EQUIPMENT

Wherever the contract documents provide only one listed vender, supplier, or manufacturer for a piece of equipment or material, the contractor shall interpret the meaning to be "or equal." When the listed vender, supplier or manufacturer is not the provider of the material and/or equipment bid, it shall be the contractor's responsibility to provide the owner all forms of documentation required and/or necessary to clearly show that the item bid is equal to the listed item from the suggested/recommended vender, supplier, or manufacturer. If the contractor fails to provide sufficient documentation to clearly show equivalency, the item shall be supplied by the listed vendor, supplier, or manufacturer.

BID SIGNATURE

Bidders must state in their Bids their full name and business address. If an incorporated company, Bidders must list the name of the State which has incorporated the company under its laws. The State of Wisconsin must have licensed this company to do business, prior to award of this Contract for the work described in the PS & CD. The party properly authorized to submit the Bid must sign it.

If a Bidder does not sign his Bid, the signee must attach a Power of Attorney, evidencing the authority to sign the Bid in the name of the persons for whom he has signed it.

The signee of a Bid for a corporation shall indicate the correct corporate name thereof and shall include the signature of the president or other authorized officer of the corporation, manually written below the corporate name following the word "By (name, title)". If the signee of such a Bid is other than the President or Vice-President of the corporation, this signee shall attach a certified copy of a resolution of the Board of Directors, evidencing the authority of such official to sign the Bid. Such Bid should also bear the attesting signature of the secretary of the corporation and the impression of the corporate seal.

For Bids of a partnership, all of the partners, or an attorney-in-fact, shall sign the Bid. If signed by an attorney-in-fact, he should attach to the Bid a Power of Attorney, executed by the partners, evidencing authority to sign the Bid.

BID FORM AND SUBMITTAL

Each Bidder must seal his Bid in an envelope, upon which he shall plainly state the title of the work for which he submits the Bid. The Bidder should deliver or mail the Bid to the Owner at or before the time specified in the Official Notice.

The Owner will only consider Bids which are made out on the regular form furnished with this document and which include a quotation for all required Bid items. When the Owner does not require a quotation on an item in the schedule of quantities, Bidders should insert the words "No Bid" in the appropriate space provided. Bids must contain a price which is both adequate and reasonable for each and every item named in the schedule of quantities on the Bid form. The Owner will reject unbalanced Bids. The Bidder shall specify in words and in figures (in case of discrepancy, the written words will govern) the total sum for which he will perform all of the work or furnish all of the material specified. All writing shall be done in ink. The Owner, at its discretion, will compare Bids, in whole or in part, on a unit basis.

The Bidding shall be as set forth on the Bid Form. Each Bid Item shall include all of the Contractor's costs, such as transportation, insurance, delays, labor, machinery, tools, rigging, brushes, and all materials necessary to repair, clean, and paint as necessary in strict conformity with the requirements of these Specifications.

The schedule of quantities of the work, while the result of careful calculation, are approximate. Bidders shall assume them to be reasonably accurate, and shall use them in calculating the relative amounts of the bid, but they are not the basis for final payment. Each Bidder shall make his own estimate of the quantities and shall calculate his unit prices accordingly. Bidders who rely upon and use these approximate quantities for the calculation of their bid quantities do so at their own risk. The estimated quantities are provided for project scoping purposes.

The Bidder declares: 1) that he will perform all of the work at his own proper cost and expense; 2) that he will furnish all necessary material, labor, tools, machinery, apparatus, and other means of construction in the manner provided and at the time specified in the PS & CD, of which his Bid will become part, if and when accepted; 3) that only the persons, firm, or corporation herein named have an interest in this Bid; and 4) that he submits this Bid without collusion with any person(s) or corporation(s). 5) The submission of a bid acknowledges that the respective bidder recognizes the fact that the contract is a **unit price contract** and that the prices per item provided in the bid schedule are to be used for bid analysis and to provide a basis for addressing addition or deletion of work as a result of unforeseen conditions. The contract will be awarded on the **total** bid price on the bid form.

BID SECURITY

Each Bid shall be accompanied by Bid Security in an amount not less than five percent (5%) of the total Bid. For this procurement, the total Bid for determining Bid Security is the sum of the Base Bid and the Alternate Bid submitted, whether or not the Alternate is ultimately awarded.

Bid Security shall be an executed Bid Bond naming the Town of Kewaskum as obligee, or a certified check or cashier's check payable to the Town of Kewaskum. The Bid Bond shall identify this project and be signed by the Bidder and an authorized representative of the Surety. A current power of attorney evidencing the Surety representative's authority shall accompany the bond. The Surety shall meet Section 00800 qualifications.

The Bid Bond shall secure the Bidder's obligation, if awarded the Contract during the forty-five (45) day Bid acceptance period or a written extension agreed to by the Bidder and Surety, to execute the Agreement and furnish the required Performance Bond, Payment Bond, insurance documents, and other post-award documents within ten (10) calendar days after notification of award. Its penal sum shall be not less than the required Bid Security amount. A surety's standard Bid Bond form may be used if it meets these requirements.

A Bid submitted without the required Bid Security, or with Bid Security in less than the required amount, shall be rejected as nonresponsive. This material requirement shall not be waived as an informality or irregularity.

If the Successful Bidder fails to execute and deliver the Agreement and required post-award documents within the specified time, the Owner may cancel the award and exercise its rights against the Bid Security, subject to applicable law and the terms of the Bid Bond. Recovery shall not exceed the amount of the Bid Security.

The Owner shall release Bid Security of unsuccessful Bidders after award. The Successful Bidder's Bid Security shall be released after execution of the Agreement by the Owner and acceptance of the required bonds, insurance documents, and other post-award documents. If no award is made within the Bid acceptance period, Bid Security shall be released unless the Bidder and, for a Bid Bond, the Surety consent in writing to an extension.

REJECTION OF BIDS

The Owner reserves the right to reject any and all Bids when such rejection is in the best interest of the Owner; to reject the Bid of a Bidder who has previously failed to perform properly or complete on time, Contracts of a similar nature; and to reject the Bid of a Bidder who is not, in the opinion of the Owner, in a position to perform the work specified.

AWARD

The Owner shall award the Contract to the lowest responsive responsible Bidder. The Owner shall mail or deliver a Notice of Award to the Successful Bidder. If low Bids are tied, the Owner will select the Successful Bidder.

The Successful Bidder shall, within ten (10) calendar days after notification that the Owner has authorized award, deliver three executed copies of the Agreement, a separate Performance Bond and a separate Payment Bond, certificates of insurance and required endorsements, and all other required post-award documents. Each bond shall be in a penal sum equal to one hundred percent (100%) of the awarded Contract Price, consisting of the Base Bid and only alternates accepted by the Owner. Both bonds shall name the Town of Kewaskum as Owner and obligee, satisfy Wis. Stat. § 779.14, and comply with Section

00800. Use the full standard EJCDC C-610 Performance Bond and C-615 Payment Bond forms furnished with the Bidding Documents as Sections 00610 and 00620. Bond approval shall be by the Town Board as required by law. The Contractor shall not begin work before the Agreement is executed and the required bonds and insurance documents are accepted.

TRAFFIC CONTROL

Unless directed otherwise by the Owner, all work included in this contract shall be done under traffic. Traffic control is the sole responsibility of the Successful Bidder/Contractor. Traffic control shall meet the requirements of the Manual on Uniform Traffic Control Devices (MUTCD). The Contractor shall develop a traffic control plan for review and approval by the Owner at the pre-construction conference or at a minimum, 5 working days prior to desired start date.

TIME OF COMPLETION

The Successful Bidder must complete the entire work, to the Owner's satisfaction, in the number of days or by the date specified in the contract documents. The Owner or his designated representative shall oversee, but not supervise the work.

LIQUIDATED DAMAGES

The liquidated damages for not completing the work within the time specified shall be as set forth in the Supplementary Conditions and/or the Agreement (Section 00500-Contract).

INTERPRETATION OF DOCUMENTS

If any person contemplating submitting a Bid for the proposed work is in doubt as to the true meaning of any part of the PS & CD, he may submit to the Owner a written request for an interpretation thereof. The person submitting the request will be responsible for its prompt delivery. The Owner will make an interpretation of the proposed documents only by an Addendum, duly issued. The Owner will send copies of such Addendum to each prospective Bidder and this Addendum will become a part of the PS & CD.

All Bids submitted shall include an acknowledgment of receipt of the Addenda. Verbal interpretations will be without legal effect.

WITHDRAWAL OF BIDS

A Bidder may withdraw his Bid at any time prior to the scheduled time for receipt of Bids. Unless a longer or shorter time period is stated in the Official Notice, no Bid may be withdrawn for forty-five (45) days after the date of the Bid opening.

END OF SECTION

SECTION 00300

BID FORM

Project Identification: **Highland Drive / W Moraine Drive – Road Reconstruction**
Town of Kewaskum, Wisconsin

This Bid is Submitted to: Town of Kewaskum
Attn: Anne Trautner
P.O. Box 484
Kewaskum, WI 53040

1. The Bidder signing and submitting this proposal agrees and declares as a condition thereof, to be bound by the following conditions and requirements.
2. The items in the alternate bid shall be interpreted as additional items to the base bid and shall be bid accordingly. If authorized by the Town of Kewaskum, the alternate bid items shall be constructed within the same construction timeline as the base bid.
3. The Bidder declares that he has carefully examined the site of, and the proposal, plans, specifications, line item quantities and contract forms for the work contemplated, and it is assumed that the Bidder has investigated and is satisfied as to the conditions to be encountered, as to character, quality, quantities of work to be performed and materials to be furnished, and as to the requirements of the specifications, special provisions and contract. Bidder has examined and carefully studied the Project Manual and the following Addenda, receipt of all which is hereby acknowledged:

Addenda Number

Date

5. **GUARANTEE:** All work shall be and is guaranteed for a period of three (3) years from the Town acceptance of work. If, within said guarantee period, rework, which, in the opinion of the Town or Engineer, is rendered necessary as the result of the use of materials, equipment or workmanship which are inferior, defective, or not in accordance with the terms of the contract, the Contractor shall promptly, upon receipt of the notice from the Town, and without expense to the Town, restore the work to a satisfactory condition, correct all defects, make good all damage to the structure, site, defects, or contents thereof, which damage, in the opinion of the Town, results from the use of such inferior or defective materials, equipment or workmanship.

If within ten (10) days after notice the Contractor fails to comply with the terms of any guarantee herein contained, the Town may have the defects corrected and the Contractor shall be liable for all expenses incurred; except when, in the opinion of the Town, delay in correcting the defects would cause serious cost or damage, repairs may be made by the Town without notice being given to the Contractor and the Contractor shall pay the cost thereof.

All special guarantees or warranties applicable to specific parts of the work as may be stipulated in the contract specifications or other documents being a part of this contract shall be subject to the terms of this paragraph during the three-year guarantee period. All special guarantees and manufacturers' warranties shall be delivered to the Engineer before shop drawings on items of

major equipment are approved; guarantees and warranties for other items shall be furnished prior to the acceptance of the work.

6. The Town of Kewaskum reserves the right to modify elements and/or portions of the contract if budget constraints warrant it. The unit prices are to be used as a basis for any addition and/or deletion of work to the contract.

Attach all Addenda's, if any, to this sheet.

PRICE SCHEDULE – BASE BID ITEMS (HIGHLAND DRIVE)

ITEM NUMBER	ITEM	UNIT	EST. QUANTITY	UNIT BID PRICE	TOTAL
1.	Traffic Control	LS	1		
2.	Clearing & Grubbing	LS	1		
3.	Silt Fence	LF	6,060		
4.	Sawcut Pavement	LF	232		
5.	Remove Asphalt Pavement	SY	21,310		
6.	Remove Concrete Pavement	SY	65		
7.	Remove Trees	EA	3		
8.	Moving Existing Signs	EA	18		
9.	Remove 12" Culvert	LF	132		
10.	Remove 15" Culvert	LF	25		
11.	Remove 18" Culvert	LF	129		
12.	Remove 24" Culvert	LF	94		
13.	Remove 36" Culvert	LF	43		
14.	Unclassified Excavation	CY	13,703		
15.	Earthwork Fill (from Unclassified Exc.)	CY	5,499		
16.	Excavation Below Subgrade	CY	1,370		
17.	15" RCP Storm Sewer	LF	40		
18.	36" RCP Storm Sewer	LF	50		
19.	24" RCP Storm Sewer	LF	159		

20.	12" HDPE Storm Sewer	LF	251		
21.	15" HDPE Storm Sewer	LF	221		
22.	18" HDPE Storm Sewer	LF	166		
23.	24" HDPE Storm Sewer	LF	55		
24.	12" Apron Endwall	EA	14		
25.	15" Apron Endwall	EA	12		
26.	18" Apron Endwall	EA	10		
27.	24" Apron Endwall	EA	8		
28.	36" Apron Endwall	EA	2		
29.	30" Curb and Gutter	LF	2,250		
30.	Concrete Flume	EA	8		
31.	Light Rip Rap w/ Fabric	SY	21		
32.	1-1/4" Aggregate Base Dense	TON	13,110		
33.	Finish Grading	SY	26,170		
34.	2 1/4" 3 LT 58-28 S Asphalt Binder	TON	3,461		
35.	Tack Coat	SY	26,170		
36.	1 3/4" 4 LT 58-28 S Asphalt Surface	TON	2,691		
37.	4" Asphalt Pavement for Driveways w/ 6" CABC	SY	360		
38.	6" - 3/4" Aggregate Base Dense Driveway	SY	1,075		
39.	5" Concrete Driveway w/ 6" CABC	SY	130		
40.	Temporary Seed and Mulch	SY	20,610		

41.	Restoration (Topsoil, Seed and Fertilizer)	SY	20,610		
42.	Class I, Type A Erosion Mat	SY	11,490		
Contract Price - Base Bid: Total Bid for Items 1 through 42					

Written _____
\$ _____
Figures

PRICE SCHEDULE – ALTERNATE BID ITEMS (W MORaine DRIVE)

ITEM NUMBER	ITEM	UNIT	EST. QUANTITY	UNIT BID PRICE	TOTAL
1.	Clearing & Grubbing	LS	1		
2.	Silt Fence	LF	1,953		
3.	Sawcut Pavement	LF	243		
4.	Remove Asphalt Pavement	SY	10,765		
5.	Remove Concrete Pavement	SY	23		
6.	Remove Trees	EA	1		
7.	Moving Existing Signs	EA	13		
8.	Remove 12" Culvert	LF	60		
9.	Remove 24" Culvert	LF	47		
10.	Unclassified Excavation	CY	5,735		
11.	Earthwork Fill (from Unclassified Exc.)	CY	1,107		
12.	Excavation Below Subgrade	CY	574		
13.	12" HDPE Storm Sewer	LF	334		
14.	15" HDPE Storm Sewer	LF	53		
15.	24" RCP Storm Sewer	LF	65		
16.	12" Apron Endwall	EA	16		
17.	15" Apron Endwall	EA	2		
18.	24" Apron Endwall	EA	2		
19.	30" Curb and Gutter	LF	854		

20.	Concrete Flume	EA	3		
21.	Light Rip Rap w/ Fabric	SY	8		
22.	1-1/4" Aggregate Base Dense	TON	6,965		
23.	Finish Grading	SY	13,312		
24.	2 1/4" 3 LT 58-28 S Asphalt Binder	TON	1,775		
25.	Tack Coat	SY	13,312		
26.	1 3/4" 4 LT 58-28 S Asphalt Surface	TON	1,380		
27.	2" Asphaltic Pavement for Driveways w/ 6" CABC	SY	155		
28.	6" - 3/4" Aggregate Base Dense Driveway	SY	555		
29.	Temporary Seed and Mulch	SY	9,640		
30.	Restoration (Topsoil, Seed and Fertilizer)	SY	9,640		
31.	Class I, Type A Erosion Mat	SY	5,625		
Contract Price - Alternate Bid: Total Bid for Items 1 through 31					

Written

\$ _____
Figures

Final completion of all work is required as stated in Notice to Bidders. Start date for construction will be approved by the Town.

The Engineer reserves the right to reject any or all Bids, to waive any technicality in any Bid and accept any Bid deemed to be the most advantageous to the Town.

The Bidder submitting this Proposal hereby agrees to perform the work in accordance with all the terms, conditions and requirements of the PROPOSAL, CONTRACT DOCUMENTS AND SPECIFICATIONS. Said Contract Documents are made a part hereof as full and completely as if attached hereto.

Proposal submitted by: NAME: _____

ADDRESS: _____

If a corporation, answer the following:

Sole Trade, Partner, or Corporation

Incorporated under the laws of the State of _____

By: _____ (Bidder must sign on this line) _____ (Title)

LIST OF SUBCONTRACTORS

The Bidder, as part of this proposal, submits this full and complete list of all subcontractors and the class of work to be performed by each:

NAME OF SUBCONTRACTORS	CLASS OF WORK
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

I hereby certify that the use of the name of the above Contractor was with the knowledge and consent of the sub-contractor.

(Bidder)

SUBLETTING OR ASSIGNING OF CONTRACT

If the Contractor sublets the whole or any part of the work to be done under this Contract, he shall not under any circumstances be relieved of his liabilities and obligation. All transactions of the Owner shall be with the Contractor; Subcontractors shall be recognized only in the capacity of employees or workmen and shall be subject to the same requirements as to the character and competence. The Contractor shall not assign, sublet, transfer, convey, sell or otherwise dispose of the whole or any part of his contract, his

right, title, or interest therein, or his power to execute such contract to any person, firm, partnership or corporation without the written consent of the Owner.

AFFIDAVIT OF BIDDER

STATE OF WISCONSIN)

) SS

Pursuant to Section 66.29 (7), Wisconsin Statutes

being duly sworn, deposes and says:

That _____, the duly authorized representative of

(Name of person, firm or corporation submitting Bid)

Bidder for doing the work or labor or the furnishing of material under the proposal of which this affidavit is a part, and

That the said Bidder has examined and carefully prepared his Bid form, the Plans and Specifications, and has checked the same in detail before submitting said Proposal or Bid to the Engineer.

(Signed by Bidder or his authorized representative)

Subscribed and sworn to before me this

_____ day of _____, 20____

Notary Public

My commission expires _____

END OF SECTION

SECTION 00500

CONTRACT

THIS AGREEMENT is dated as of the _____ day of _____, 2026 by and between the Town of Kewaskum hereinafter called "OWNER" and _____, hereinafter called "CONTRACTOR."

OWNER and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

WORK

CONTRACTOR shall complete all work as specified or indicated in the Contract Documents. The work is generally described as follows:

Reconstructing 1.73 miles of Highland Drive between Mohawk Road (CTH H) to W. Moraine Drive with an alternate to reconstruct 0.94 miles of W. Moraine Drive from Highland Drive to CTH V. Work includes expansion to the width of the roadway and associated storm sewer, curb & gutter.

The Project for which the work, under the Contract Documents, may be the whole or only a part is generally referred to as:

Highland Drive / East Moraine Drive - Road Reconstruction

ENGINEER

The Plans and the Specifications were prepared by Parish Survey & Engineering, who is hereinafter called ENGINEER. The ENGINEER will assume all duties and responsibilities and will have the rights and authority assigned to ENGINEER in the Contract Documents in connection with completion of the WORK in accordance with the Contract Documents.

CONTRACT PRICE

The OWNER shall pay the CONTRACTOR for performance of the work in accordance with the Contract Documents in current funds as specified in Section 00300, as follows \$_____ which figure shall be adjusted in accordance with the attached "Contractor's Unit Prices" for extras and credits, for changes in the scope of the work. The OWNER reserves the right to increase or decrease the quantities of work. The cost for such an increase or decrease in the quantities of work will be negotiated using the unit prices/schedule of prices for determination of reasonable cost. No allowance will be made for any increased expenses, loss of expected reimbursement, or loss of anticipated profits suffered or claimed by the CONTRACTOR resulting either directly from such alterations or indirectly from unbalanced allocation among the contract items of overhead expense on the part of the bidder and subsequent loss of expected reimbursement therefore, or from any other cause.

PERFORMANCE AND PAYMENT BONDS

CONTRACTOR shall furnish separate Performance and Payment Bonds as required by Sections 00100 and 00800, each initially in a penal sum equal to one hundred percent (100%) of the awarded Contract Price. The awarded Contract Price includes the Base Bid and only alternates accepted by OWNER. Each bond shall name the Town of Kewaskum as OWNER and obligee and shall comply with Wis. Stat. § 779.14. The executed bonds are Contract Documents. Bond adjustments for changes in Contract Price shall comply with Section 00800 and the bond terms.

The three (3) year contractual guarantee remains as specified in Section 00300 and the applicable Specifications. No separate warranty or maintenance bond is required. The scope of the Surety's obligations and the time for asserting bond claims are governed by the executed bonds and applicable Wisconsin law; this Agreement does not impose an additional three-year bond extension or create an automatic one-year bond expiration.

CONTRACT TIME

Some work has specific start dates to allow completion of preliminary work by others. These start dates are shown in the project description. All work shall be completed by Friday, October 15, 2027. Failure to

meet this deadline will result in the assessment of liquidated damages as specified by the Contract Documents.

DAMAGES

Failure to comply with the project completion date will result in liquidated damages being assessed at the rate of \$500.00 (five hundred dollars) per day.

PAYMENT PROCEDURES

Submittal and Processing of Payments

Prior to the start of work, the Contractor shall submit an initial invoice of the full contract price to the Town of Kewaskum for the release of funds from the State of Wisconsin. Once work begins, the Contractor shall submit Applications for Payment to the OWNER in accordance with the General Conditions. Applications for Payment will be processed by OWNER.

Progress Payments; Retainage

The OWNER shall make payments on account of the Contract Price on the basis of Contractor's Applications for Payment. All such payments will be measured by the Schedule of Values established in the Bid Tab (and in the case of Bid Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided by Wisconsin State Statutes:

- The retainage shall be an amount equal to not more than 5% of said the estimate until 50% of the work has been completed.
- At 50% completion, no additional amounts shall be retained, and partial payments shall be made in full to the contractor unless the architect or engineer certifies that the job is not proceeding satisfactorily.
- At 50% completion or any time thereafter when the progress of the work is not satisfactory, additional amounts may be retained but in no event shall the total retainage be more than 10% of the value of the work completed.
- Upon substantial completion of the work, an amount retained may be paid to the contractor.

Final Payment

Upon final completion and acceptance of the Work, The OWNER shall pay the Contract Price.

CONTRACTOR'S REPRESENTATIONS

In order to induce OWNER to enter into this Agreement CONTRACTOR makes the following representations:

CONTRACTOR has familiarized himself with the nature and extent of the Contract Documents, Work, locality, and with all local conditions and federal, state and local laws, ordinances, rules and regulations that in any manner may affect cost, progress or performance of the Work. CONTRACTOR has studied carefully all latent physical conditions at the site or otherwise affecting cost, progress or performance of the Work which were relied upon by Parish Survey & Engineering in the preparation of the Drawings and Specifications and which have been identified in the Contract Documents. CONTRACTOR has made or caused to be made examinations, investigations and test and studies of such reports and related data in addition to those referred to above as he deems necessary for the performance of the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents; and no additional examinations, investigations, test, reports or similar data are or will be required by the CONTRACTOR for such purposes. The CONTRACTOR has correlated the results of all such observations, examinations, investigations, test reports and data with the terms and conditions of the Contract Documents. The CONTRACTOR has given Parish Survey & Engineering written notice of all conflicts, errors or discrepancies that he has discovered in the Contract Documents and the written resolution thereof by Parish Survey & Engineering is acceptable to the CONTRACTOR.

CONTRACT DOCUMENTS

The Contract documents which comprise the entire agreement between the OWNER and CONTRACTOR are attached or referenced to this Agreement, made a part hereof and consists of the following:

Official Notice and Instructions to Bidders, Supplementary Conditions, Bid Form (Section 00300), executed Performance Bond (Section 00610), executed Payment Bond (Section 00620), Addenda, Specifications, Plans, Drawings, Contract, all Amendments, Modifications, Change Orders and Supplements issued on or after the effective date of agreement. There are no Contract Documents other than those listed above. The Contract Documents may only be altered, amended or repealed by a Change Order.

MISCELLANEOUS

Terms used in this Agreement shall have the meanings assigned in the Contract Documents, including the WisDOT Specifications incorporated by Section 00700, as modified by the Supplementary Conditions and the express definitions in this Agreement. No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party to be bound; and specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents. OWNER and CONTRACTOR each binds himself, his partners, successor's assigns and legal representatives to the other party hereto, his partners, successors, assigns and legal representatives in respect to all covenants, agreements and obligations contained in the Contract Documents.

IN WITNESS WHEREOF, the parties hereto have signed this Agreement in triplicate. One counterpart each has been delivered to the CONTRACTOR and TWO to the OWNER. All portions of the Contract Documents have been signed or identified by OWNER and CONTRACTOR.

THIS AGREEMENT will be effective on _____, 2026

OWNER: TOWN OF KEWASKUM

CONTRACTOR:

BY _____
(Title)

BY _____
(Title)

(Date)

(Date)

END OF SECTION

SECTION 00600

CERTIFICATION

1. GENERAL

The requirements of the Contract Documents, including the General Conditions, the Supplemental Conditions and Division I - General Requirements apply to this section, except as modified herein.

2. CERTIFICATES

- A. CONTRACTOR shall furnish to the OWNER with a certificate of insurance providing proof of adequate insurance coverage per the contract requirements prior to commencement of the work.

END OF SECTION

SECTION 00610
PERFORMANCE BOND

Contractor Name: Address (<i>principal place of business</i>):	Surety Name: Address (<i>principal place of business</i>):
Owner Name: Mailing address (<i>principal place of business</i>):	Contract Description (<i>name and location</i>): Contract Price: Effective Date of Contract:
Bond Bond Amount: Date of Bond: <i>(Date of Bond cannot be earlier than Effective Date of Contract)</i> Modifications to this Bond form: ☐ None ☐ See Paragraph 16	
Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Performance Bond, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.	
Contractor as Principal	Surety
<i>(Full formal name of Contractor)</i>	<i>(Full formal name of Surety) (corporate seal)</i>
By: _____ <i>(Signature)</i>	By: _____ <i>(Signature)(Attach Power of Attorney)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____ <i>(Signature)</i>	Attest: _____ <i>(Signature)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
<i>Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.</i>	

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.
2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond will arise after:
 - 3.1. The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice may indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 will be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement does not waive the Owner's right, if any, subsequently to declare a Contractor Default;
 - 3.2. The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and
 - 3.3. The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.
4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 does not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.
5. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:
 - 5.1. Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;
 - 5.2. Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;
 - 5.3. Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or
 - 5.4. Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:
 - 5.4.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
 - 5.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.
6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner refuses the payment, or the Surety has denied liability, in

whole or in part, without further notice, the Owner shall be entitled to enforce any remedy available to the Owner.

7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner will not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety will not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:
 - 7.1. the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
 - 7.2. additional legal, design professional, and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and
 - 7.3. liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.
8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.
9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price will not be reduced or set off on account of any such unrelated obligations. No right of action will accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.
10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
11. Any proceeding, legal or equitable, under this Bond must be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and must be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit will be applicable.
12. Notice to the Surety, the Owner, or the Contractor must be mailed or delivered to the address shown on the page on which their signature appears.
13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement will be deemed deleted therefrom and provisions conforming to such statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.

14. Definitions

- 14.1. *Balance of the Contract Price*—The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.
- 14.2. *Construction Contract*—The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.
- 14.3. *Contractor Default*—Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.
- 14.4. *Owner Default*—Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

- 14.5. *Contract Documents*—All the documents that comprise the agreement between the Owner and Contractor.
15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.
16. Modifications to this Bond are as follows: **None.**

END OF SECTION

SECTION 00620

PAYMENT BOND

Contractor Name: _____ Address (<i>principal place of business</i>): _____	Surety Name: _____ Address (<i>principal place of business</i>): _____
Owner Name: _____ Mailing address (<i>principal place of business</i>): _____	Contract Description (<i>name and location</i>): _____ Contract Price: _____ Effective Date of Contract: _____
Bond Bond Amount: _____ Date of Bond: _____ <i>(Date of Bond cannot be earlier than Effective Date of Contract)</i> Modifications to this Bond form: ☐ None ☐ See Paragraph 18	
Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Payment Bond, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.	
Contractor as Principal	Surety
_____ <i>(Full formal name of Contractor)</i>	_____ <i>(Full formal name of Surety) (corporate seal)</i>
By: _____ <i>(Signature)</i>	By: _____ <i>(Signature)(Attach Power of Attorney)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____ <i>(Signature)</i>	Attest: _____ <i>(Signature)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
<i>Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.</i>	

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.
2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond will arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.
4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.
5. The Surety's obligations to a Claimant under this Bond will arise after the following:
 - 5.1. Claimants who do not have a direct contract with the Contractor
 - 5.1.1. have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
 - 5.1.2. have sent a Claim to the Surety (at the address described in Paragraph 13).
 - 5.2. Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).
6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.
7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:
 - 7.1. Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
 - 7.2. Pay or arrange for payment of any undisputed amounts.
 - 7.3. The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 will not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.
8. The Surety's total obligation will not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond will be credited for any payments made in good faith by the Surety.
9. Amounts owed by the Owner to the Contractor under the Construction Contract will be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction

performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfying obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.
11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
12. No suit or action will be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit will be applicable.
13. Notice and Claims to the Surety, the Owner, or the Contractor must be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, will be sufficient compliance as of the date received.
14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement will be deemed deleted here from and provisions conforming to such statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.
15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

16. Definitions

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

- 16.1.1. The name of the Claimant;
- 16.1.2. The name of the person for whom the labor was done, or materials or equipment furnished;
- 16.1.3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
- 16.1.4. A brief description of the labor, materials, or equipment furnished;
- 16.1.5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
- 16.1.6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
- 16.1.7. The total amount of previous payments received by the Claimant; and
- 16.1.8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.

16.2. *Claimant*—An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or

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

- 16.3. *Construction Contract*—The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.
 - 16.4. *Owner Default*—Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
 - 16.5. *Contract Documents*—All the documents that comprise the agreement between the Owner and Contractor.
17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.
18. Modifications to this Bond are as follows: **None.**

END OF SECTION

SECTION 00700

STANDARD GENERAL CONDITIONS

1. GENERAL

A. STANDARD

1. Sections 104, 105, 106, 108 and 109 of the 2026 Edition of the State of Wisconsin Specifications for Highway and Structure Construction (WisDOT Specifications) are hereby made a part of the Construction Documents by reference. Copies of these are available anytime at no charge.

B. PRECEDENCE

1. The incorporated WisDOT Specifications apply except where expressly revised, modified, supplemented, or superseded by the project Plans, project Specifications, or Supplementary Conditions.
2. In the event of a conflict or inconsistency between the incorporated WisDOT Specifications and the project Plans, project Specifications, or Supplementary Conditions, the applicable project-specific requirement shall govern. WisDOT provisions that are not modified or superseded remain in effect.
3. "Engineer" means the party identified as ENGINEER in Section 00500, acting within the authority assigned by the Contract Documents.
4. If the Contractor discovers a conflict or inconsistency among the project Plans, project Specifications, or Supplementary Conditions, the Contractor shall notify the Engineer in writing and obtain written clarification before proceeding with the affected Work. Any resulting change in Contract Price or Contract Time shall be addressed through the change procedures established in the Contract Documents.

C. BID SECURITY AND CONTRACT BONDS

1. Bid Security requirements are specified in Section 00100. Performance and Payment Bond requirements are specified in Sections 00500 and 00800, with bond forms provided in Sections 00610 and 00620.

D. GUARANTEE

1. The Contractor's three-year guarantee shall be as specified in Section 00300 and the applicable Specifications. Bonding requirements shall be as specified in Section 00800.

E. LIQUIDATED DAMAGES

1. Notwithstanding any contrary provision of the incorporated WisDOT Specifications, liquidated damages for failure to complete the Work within the Contract Time shall be assessed at \$500.00 per calendar day, as specified under "DAMAGES" in Section 00500—Contract.
2. This project-specific rate replaces any liquidated damages rate or rate schedule in the incorporated WisDOT Specifications. Section 00500 shall govern the rate and the completion deadline that triggers assessment, subject to extensions of Contract Time authorized under the Contract Documents. All other applicable provisions concerning assessment and deduction of liquidated damages remain in effect unless expressly modified.

END OF SECTION

SECTION 00800

SUPPLEMENTARY CONDITIONS

These Supplementary Conditions amend or supplement the WisDOT Specifications. All provisions which are not so amended or supplemented remain in full force and effect.

The terms used in these supplementary Conditions have the meanings stated in the WisDOT Specifications. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

The address system used in these Supplementary Conditions is the same as the address system used in the WisDOT Specifications.

General

Replace "Department" with "Owner" except in sections applicable to WisDOT product lists or aggregate sources.

Insurance

The limits of liability for the insurance shall be not less than the following amounts or greater where required by Laws and Regulations:

1. Workers' Compensation Insurance
Coverage A - Statutory
Coverage B \$1,000,000 Per Accident
 \$1,000,000 Disease, Policy Limit
 \$1,000,000 Disease, Each Employee
2. Commercial General Liability (including Premises-Operations; Independent Contractors' Protective; Products and Completed Operations; Broad Form Property Damage; and Contractual Liability):

 \$2,000,000 General Aggregate
 \$2,000,000 Products-Completed Operations Aggregate
 \$2,000,000 Each Occurrence
 \$2,000,000 Personal and Advertising Injury
3. Automobile Liability (including owned, non-owned, and hired vehicles):

 \$1,000,000 Combined Single Limit - Bodily Injury and Property Damage
4. Umbrella Excess Liability (excess over Employer's Liability, Commercial General Liability, and Automobile Liability):

 \$5,000,000 General Aggregate
 \$5,000,000 Each Occurrence
5. Contractor shall be responsible for its own property while on site.

Bonds

The following project-specific bonding requirements apply independently of the selected WisDOT Standard Specification sections incorporated elsewhere in the Project Manual. They do not incorporate WisDOT's State contract bond form, State approval procedures, or other State letting requirements.

Furnish separate Performance and Payment Bonds on the full standard EJCDC C-610 and C-615 forms furnished as Sections 00610 and 00620. Each bond shall name the Town of Kewaskum as Owner and

obligee and shall initially be in a penal sum equal to one hundred percent (100%) of the awarded Contract Price, including only accepted alternates. Both bonds shall satisfy Wis. Stat. § 779.14. Do not substitute proprietary forms or add riders limiting coverage without the Owner's written approval and compliance with applicable law.

Each Surety issuing a Bid Bond, Performance Bond, or Payment Bond shall be authorized to transact surety business in Wisconsin and shall have an A.M. Best Financial Strength Rating of A- or better. Submit evidence of current Wisconsin authorization and rating with the bond. Attach a current power of attorney for each attorney-in-fact executing a bond. Performance and Payment Bonds are subject to approval by the Town Chairperson as required by law.

Deliver the executed Performance and Payment Bonds with the Agreement, certificates of insurance and required endorsements, and other required post-award documents within ten (10) calendar days after notification of award. Include all bond costs in the Bid prices. Do not begin work until the Agreement is executed and the required bonds and insurance documents are accepted.

Maintain required bond coverage as the Contract Price changes. For increases in Contract Price, furnish any endorsements or riders needed to keep each penal sum at not less than one hundred percent (100%) of the revised Contract Price. Any reduction in a penal sum requires the Owner's written approval and shall not reduce coverage below that required by law.

The Contractor's three (3) year guarantee in Section 00300 and the applicable Specifications remains in effect. No separate warranty or maintenance bond and no additional three-year performance-bond extension are required. The executed bond terms and applicable Wisconsin law govern Surety obligations and bond claim procedures and deadlines. Neither final payment nor this provision independently releases a Surety or creates an automatic one-year expiration of either bond.

105.9 Inspecting Work – add the following:

All inspections required by the Town of Kewaskum shall be scheduled by the Contractor and coordinated with Engineers and the Owner. The necessary inspections will be detailed by Engineers at the Preconstruction Meeting.

106.1.2 Project Materials Coordinator

Remove this section

106.2.2 Preference for US-Made Materials

Remove this section

109.6.3.3 Retainage

Remove this section

END OF SECTION

SECTION 01020

ALLOWANCES

1. GENERAL

- A. The requirements of the Contract Documents, including the General Conditions, the Supplementary Conditions and Division I - General Requirements apply to this section except as modified herein.

2. EXAMINATION OF SITE

- A. The CONTRACTOR, prior to submitting this proposal, shall visit the site of the said work and familiarize himself with the location and conditions affecting the work thereon and/or therein. No allowance will be granted because of lack of knowledge of such conditions.

3. INCIDENTAL WORK

- A. Incidental work shall include all work not particularly specified or that which may be specified and not provided for in a basis for payment, that is of an incidental or temporary nature, and required in order to safely and satisfactorily carry out the intent of the work as indicated on the drawings and in the specifications. The cost of such work shall be merged with and included in the prices bid under all items of work.

4. LOCATION OF UNDERGROUND FACILITIES

- A. The location of any underground facilities furnished, shown on the plans or given on the site are based upon the available records, but are not guaranteed to be complete or correct and are given only to assist the CONTRACTOR in making a determination of the general location of all underground facilities. It is the contractor's responsibility to notify Diggers Hotline and/or utility company for a utility locate, sufficiently in advance of the project start.

END OF SECTION

SECTION 01040

COORDINATION

1. GENERAL

The requirements of the Contract Documents, including the General Conditions, the Supplementary Conditions and Division I - General Requirements apply to this section, except as modified herein.

2. COOPERATION WITH OTHER CONTRACTORS & UTILITIES

- A. The CONTRACTOR shall work in harmony with other Contractors, or with utility or Town of Kewaskum's forces engaged in collateral work. In case of dispute, the decision of the OWNER shall be final and binding upon the parties affected.
- B. The CONTRACTOR is responsible for all utility coordination. It is the CONTRACTOR's responsibility to contact all affected utilities and coordinate their work with his. The CONTRACTOR shall update the OWNER and the ENGINEER as to the status and schedule of all utility operations.

3. COORDINATION OF WORK

- A. The CONTRACTOR shall be responsible for the general coordination of the entire project. Each sub-contractor shall be responsible to advise and coordinate their phase of the work, and their suppliers, through the CONTRACTOR and with other contractors, subcontractors and suppliers working at the project.

4. NOTICE OF INTENT TO PROCEED

- A. The CONTRACTOR shall notify all appropriate governmental and regulatory units, including emergency services departments, at least seven (7) working days prior to his commencing work.
- B. The CONTRACTOR shall notify the OWNER, the ENGINEER, and all utilities and/or underground facilities locators whose property may be affected by the CONTRACTOR's operations at least seven (7) working days prior to his commencing work in that area.
- C. The CONTRACTOR shall notify the OWNER and the ENGINEER at least seven (7) working days prior to his commencing operations of his intent to start work. Continuing notice shall be given to the OWNER and the ENGINEER each time construction is resumed after shutdown.

END OF SECTION

SECTION 01060

REGULATORY REQUIREMENTS

1. GENERAL

- A. The requirements of the Contract Documents, including the General Conditions, the Supplementary Conditions and Division I - General Requirements apply to this section, except as modified herein.

2. PERMITS

- A. The CONTRACTOR shall procure all necessary permits and licenses, pay all charges and fees, and give all notices necessary and incidental to the due and lawful prosecution of the work. The ENGINEER will apply for the NOI/WRAPP permit (if required).
- B. All work requiring permits or licenses shall abide by the governing permit/license specifications where they exceed the requirements stated in these specifications.

3. COMPLIANCE WITH LAWS

- A. The CONTRACTOR, CONTRACTOR'S agents and employees, shall at all times, observe and comply with all Federal and State Laws, local laws, ordinances, codes and regulation which in any manner affect the conduct of the work and all such orders or decrees as exist at the present and which may be enacted later, by bodies or tribunals having jurisdiction or authority over the work. The CONTRACTOR shall protect and save harmless the OWNER, the ENGINEER, and their representatives, against any claim or liability arising from the violation of any law, ordinance, code, regulation or order.
- B. In particular, the CONTRACTOR shall comply with all local ordinances regulating work hours, noise levels, dust, mud, roadway load limits and barricades/warning devices required at the site.

END OF SECTION

SECTION 01150

MEASUREMENT AND PAYMENT

1. GENERAL

- A. The requirements of the Contract Documents, including the General Conditions, the Supplementary Conditions and Division I - General Requirements apply to this section, except as modified herein.

2. MEASUREMENT

- A. Payments shall be based on actual field measurements for unit price contracts. If contract is bid as lump sum per street or specific bid items are lump sum, payments shall be lump sum based on bid amount.
- B. The OWNER may elect to accept measurements made by the CONTRACTOR. When the OWNER agrees to accept such CONTRACTOR measurements, CONTRACTOR shall provide written evidence of such measurement (load tickets, etc.).
- C. The OWNER reserves the right to increase or decrease the quantities of work. The cost for such an increase or decrease in the quantities of work will be negotiated using the unit prices/schedule of prices for determination of reasonable cost. No allowance will be made for any increased expenses, loss of expected reimbursement, or loss of anticipated profits suffered or claimed by the CONTRACTOR resulting either directly from such alterations or indirectly from unbalanced allocation among the contract items of overhead expense on the part of the bidder and subsequent loss of expected reimbursement therefore, or from any other cause.

3. PAYMENT APPLICATIONS

- A. A. Initial Funding Invoice: The initial invoice for the full Contract Price required by Section 00500 shall be submitted solely for administration of the Owner's request for State funding. This invoice shall not constitute an Application for Payment for completed Work, establish that the invoiced amount has been earned, or independently obligate the Owner to pay for Work not yet performed.
- B. Progress Payments: After Work begins, the Contractor shall submit Applications for Payment documenting amounts earned in accordance with the Contract Documents. Progress payments shall reflect accepted Work and any other items expressly eligible for payment under the Contract Documents, less applicable retainage, previous payments, and authorized deductions. The initial funding invoice shall not be included as an additional earned amount.
- C. Final Payment: The requirement in Section 00500 to pay the Contract Price upon final completion and acceptance shall mean payment of the remaining unpaid balance of the Contract Price, as adjusted by authorized changes. Final payment shall account for all previous payments and authorized deductions in accordance with Paragraph 4.B of this Section.

4. FINAL PAYMENT

- A. When the project has been finally accepted by the OWNER, the CONTRACTOR shall submit to the OWNER or his designated Representative, an invoice for final payment in accordance with the GENERAL CONDITIONS.
- B. When the OWNER has verified and accepted the quantities of work, the CONTRACTOR shall 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.

- C. All prior partial estimates and payments shall be subject to correction in the final estimate of payment.
- D. Acceptance of the final payment by the CONTRACTOR is his acceptance of all contract conditions and his indemnification of the OWNER from any future claims arising from this Contract.

END OF SECTION

SECTION 01200
PROJECT MEETINGS

1. GENERAL

- A. The requirements of the Contract Documents, including the General Conditions, the Supplementary Conditions and Division I - General Requirements apply to this section, except as modified herein.

2. PRECONSTRUCTION MEETINGS

- A. The CONTRACTOR shall attend a pre-construction meeting prior to commencing work on the site. The CONTRACTOR will be advised of the exact date, time and location of the meeting. The pre-construction meeting shall be held within 10 days prior to the start of work.
- B. The meeting shall be attended by the OWNER and/or the ENGINEER, the CONTRACTOR's representative, having the authority to make informed commitments for the CONTRACTOR, any principal sub-contractors and Town of Kewaskum representatives.
- C. The CONTRACTOR's representative shall be prepared to present a tentative construction schedule setting out target dates for completion of key elements, and shall also have a rough sketch showing the location of the CONTRACTOR's intended haul roads and material storage points. The name of the person in charge who will be staffing the project and a name and telephone number of a 24-hour contact in case of an after-hours emergency shall be provided.

3. WEEKLY PROGRESS MEETINGS

- A. The CONTRACTOR shall attend weekly progress meetings. The CONTRACTOR will be advised of the exact date, time and location of the meeting.
- B. The meeting shall be attended by the OWNER and/or the ENGINEER, the CONTRACTOR's representative, having the authority to make informed commitments for the CONTRACTOR, any principal sub-contractors and Town of Kewaskum representatives.
- C. The CONTRACTOR's representative shall be prepared to present a summary of work to be done that week, the sub-contractors to be on site performing work, along with any upcoming project target dates.

4. FINAL WALK THROUGH

- A. The CONTRACTOR shall schedule a final walk through at the site upon Final Completion.

END OF SECTION

SECTION 01300

SUBMITTALS

1. GENERAL

- A. The requirements of the Contract Documents, including the General Conditions, the Supplementary Conditions and Division I - General Requirements apply to this section, except as modified herein.

2. SUBMITTALS

A. HAUL ROUTES

- i. Haul routes for all construction submitted for review and approval by the Engineer at the pre-construction conference, or at a minimum, 5 working days prior to desired start date.

B. TRAFFIC CONTROL PLAN

- i. A traffic control plan for all construction submitted for review and approval by the Engineer at the pre-construction conference, or at a minimum, 5 working days prior to desired start date

C. NOTICE TO TOWN OF WORK SCHEDULE

- i. Prior to commencement of any work the contractor shall submit to the Engineer, for his approval, a complete construction schedule detailing proposed start and completion dates for all elements of the contract. No work shall commence until such schedule is reviewed and accepted by the Engineer. The Contractor shall submit to the Engineer, by Wednesday of each week, an updated and detailed work schedule for all work to be performed the following week. No work shall be performed if it has not been scheduled the previous week. Work not completed by the completion date; except due to unforeseen weather conditions, shall be subject to liquidated damages as per section 00500.

- D. Certified Test Reports and Design Specifications will be required for the following items. Design Specifications shall be submitted to the ENGINEER 14 days prior to use on the job site. Test Reports shall be submitted to the ENGINEER within 24 hours of test completion.

- i. Erosion Control Device Product Sheets
- ii. Asphaltic Mixture Designs
- iii. Asphalt Binder Certification
- iv. Concrete Mix Designs
- v. Concrete Admixtures Product Sheets
- vi. Tack Material Certification
- vii. Precast Concrete Structure Shop Drawings
- viii. Storm Sewer Pipe Product Sheets

E. Test Results

- i. The results of the "required sampling and testing" under "QUALITY CONTROL" – 32 12 16.13 Plant Mix Asphalt Paving
- ii. Nuclear Asphaltic Testing Records – 32 12 16.13 Plant Mix Asphalt Paving
- iii. Sieve analysis and approved source verification – 32 11 23 Dense Graded Base
- iv. 7 Day and 28 Day Concrete Strength testing records – 03 30 05 Cast-In-Place Concrete (Outside the Building Footprint)

END OF SECTION

SECTION 01400
QUALITY CONTROL

1. GENERAL

- A. The requirement of the Contract Documents, including the General Conditions the Supplementary Conditions and Division I - General Requirements apply to this section except as modified herein.

2. REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.
 - i. American Association of State Highway and Transportation Officials (AASHTO)
 - ii. Wisconsin Department of Transportation
 - 1. Standard Specifications for Highway & Structure Construction (latest edition)
 - 2. Facilities Development Manual
 - iii. Wisconsin Administrative Code (Transportation Section)
 - iv. Standard Specifications for Sewer & Water Construction in Wisconsin

3. RESPONSIBILITY

- A. The CONTRACTOR shall assume complete and sole responsibility for the quality of work. If changes or adjustments are recommended by the CONTRACTOR, they may be made only upon written approval from the TOWN.
- B. The CONTRACTOR shall assume full responsibility for the furnishing of uniform and satisfactory materials.

4. AUTHORITY OF ENGINEER

- A. All work shall be done in compliance with the Contract Documents. The ENGINEER shall decide all questions regarding the quality and acceptability of materials furnished, work performed, workmanship, rate of progress of work, and interpretation of the Plans and Specifications. The ENGINEER shall decide all questions of acceptable fulfillment of the Contract, compensation, and disputes and mutual rights between CONTRACTOR'S under the specifications. The TOWN or ENGINEER shall determine the amount of work performed and materials furnished.
- B. The ENGINEER'S failure to reject what is in its opinion to be substandard work or materials does not imply its acceptance of said work or materials. The TOWN may, at any subsequent time, recover damages for or require that the CONTRACTOR replace substandard work or material regardless of his failure to reject said work or materials.

5. AUTHORITY AND DUTIES OF INSPECTORS

- A. Inspectors employed by the TOWN shall be authorized to inspect all work done and all material furnished. Such inspection may extend to all or any part of the work and to the preparation, fabrication or manufacture of the material to be used. The Inspector is not authorized to revoke, alter or waive any requirements of the Specifications, nor is he authorized to approve or accept any portion of the completed project. He shall call the attention of the CONTRACTOR to any failure of the work or materials to conform to the Specifications and Contract, and shall have the authority to reject material. Any dispute

between the Inspector and CONTRACTOR shall be referred to the TOWN. Any advice which the Inspector may give the CONTRACTOR shall in no way be construed as binding the TOWN in any way or releasing the CONTRACTOR from fulfilling any of the terms of the Contract.

6. INSPECTION

- A. All material and each part of detail of the work shall be subject at all times to inspection by the TOWN, or his Authorized Representatives and the CONTRACTOR will be held strictly to the true intent of the Specifications in regard to quality of materials, workmanship, and the diligent execution of the Contract. Such inspection may include mill, plant or shop inspection, and any material furnished under these specifications is subject to such inspection. The TOWN or their Representatives shall be allowed access to all part of the work, and shall be furnished with such information and assistance by the CONTRACTOR as is determined, by the TOWN or his representative to make a complete and detailed inspection.
- B. Where such access or opportunity for inspection is not reasonably made available to the TOWN or Inspector, the CONTRACTOR shall, at the TOWN's request, remove or uncover such portion of the finished work as the TOWN may direct before the final acceptance of the same. After the examination, the CONTRACTOR shall restore said portion of the work to the standard required by the specifications. The expense of uncovering or removing and replacing of the same in accordance with the specifications shall be borne by the CONTRACTOR.

7. WORKMANSHIP

- A. All workmanship shall conform to the best standard practice. Unless otherwise specified, the Specifications or recognized association of manufacturers and CONTRACTORS or industrial manufacturers shall be used as guides for the standards of workmanship.
- B. All exposed items of work shall present a neat workmanlike appearance and shall be as true to shape and alignment as possible to obtain with measuring or leveling instruments generally used in the respective type of work. Items of work shall be sound and fully protected against damage and premature deterioration. It is specifically understood, the CONTRACTOR agrees to abide by the decision of the TOWN.

8. DEFECTIVE MATERIALS

- A. All materials and workmanship not conforming to the requirements of the Contract Documents shall be considered as defective, and all such materials, whether in-place or not, shall be rejected and shall be removed from the work by the CONTRACTOR at his expense. Upon failure on the part of the CONTRACTOR to comply with any order of the TOWN relative to the provisions of this article, the TOWN shall have the authority to remove and replace such defective material and to deduct the cost of removal and replacement from any monies due or which may become due the CONTRACTOR.

9. PLANS AND SPECIFICATIONS TO BE AVAILABLE

- A. The CONTRACTOR shall keep a legible copy of the plans, specifications, and all permits at the site of the work at all times.

END OF SECTION

SECTION 01500

CONSTRUCTION FACILITIES

1. GENERAL

- A. The requirements of the Contract Documents including the General Conditions, the Supplementary Conditions and Division-1 General Requirements apply in this section except as modified herein.

2. SIGNS & MAILBOXES

- A. Any signs and mailboxes located in conflict with construction shall be removed, temporarily relocated during construction, and permanently relocated after construction by the CONTRACTOR. This work is incidental to the construction taking place.

3. CONSTRUCTION DEBRIS

- A. The CONTRACTOR shall at all times keep the site including all private or public property involved in or adjacent to the site free from any rubbish, surplus or waste materials.
- B. The CONTRACTOR shall remove all surplus materials, tools and equipment leaving the site and all portions of the finished work clean, unobstructed, and ready for use before Final Completion will be granted. After written notification, the OWNER may remove all rubbish, surplus or waste materials which the CONTRACTOR has neglected or refused to remove from the site and deduct the costs of such removal from any monies due the CONTRACTOR.
- C. The OWNER and the ENGINEER or their Representative shall have the right to regulate the work in order to control objectionable dust, mud, or other nuisances in or adjacent to the area of the site.

4. STORAGE OF MATERIALS

- A. Materials delivered for the CONTRACTOR are to be neatly and compactly placed on the site in such manner as to cause the least inconvenience and ensure the safety of the general public. Materials shall not be placed within 20 feet of any hydrant, pedestrian crossing, or intersection.
- B. Storage of materials "on" or "off" site is to be insured by the CONTRACTOR against loss, theft, and/or damage. The OWNER does not assume any liability for any material or product until it is incorporated into the work at the project site and the CONTRACTOR has been issued a final project release. Final project release will be concurrent with final payment.

5. ACCESS

- A. The OWNER and the ENGINEER and their Representatives shall have access to the site at all times. Other CONTRACTORS, SUBCONTRACTORS, and material suppliers shall be permitted reasonable coordinated access to the site.
- B. The CONTRACTOR shall furnish, erect, and maintain the traffic control devices at the project termini and at intersecting roads along the project as provided in this contract or directed by the ENGINEER.
- C. The CONTRACTOR shall not close at any time any road to the public except by specific written permission by the ENGINEER. The CONTRACTOR shall notify the OWNER and the ENGINEER at the earliest possible date (minimum 7 calendar days) so arrangements

may be made for closing the road and provided detours. The CONTRACTOR shall install signs one week (5 days) in advance advising users of the road closing.

6. TRAFFIC CONTROL

- A. Traffic control shall be the responsibility of the CONTRACTOR.
- B. The CONTRACTOR shall be responsible for the erection and maintenance of all barricades, lights, and signs necessary for public safety and convenience in accordance with all applicable requirements. In general, all hazards within the limits of the work must be marked with well-painted, well-maintained barricades, reflectors, electric lights, flashers and warning and directional signs in sufficient quantity and size adequate to protect life and property. These safeguards shall be moved, changed, increased, or removed as required during the progress of the work to meet changing conditions.
- C. Adequate protection shall be provided around all openings wherever required to safeguard the work or the public. All openings and surface obstructions shall be protected with barricades, signs, and warning devices in accordance with local requirements.
- D. As a minimum, the provisions of the State Highway Specifications and State Manual for Uniform Traffic Control Devices shall be met. The CONTRACTOR shall develop a traffic control plan for each location. Said plan shall be subject to review and approval of the OWNER and the ENGINEER at the preconstruction conference or a minimum, 5 working days prior to the desired start date.

7. PROTECTION FROM DAMAGE

- A. The CONTRACTOR shall be responsible for taking appropriate reasonable and responsible care to protect surrounding property, facilities, and/or utilities from damage. All damage resulting from his work operations to any utilities, property, and/or facilities shall be the contractor's responsibility to repair and or replace as deemed appropriate by the OWNER and the ENGINEER. CONTRACTOR shall also be responsible for damage to pavement, sidewalks, curbs, gutter, driveways, trees, shrubbery, or lawns which are scheduled to remain.
- B. All costs of repairs arising from the CONTRACTOR'S damage to utilities, private property, or pavement, sidewalks, curbs, gutter, driveways, trees, shrubbery and lawns shall be paid by the CONTRACTOR.

8. STREET AND RIGHT OF WAY USE

- A. Prior to commencement of work the CONTRACTOR shall furnish the OWNER and the ENGINEER with a listing of all proposed haul routes for approval.
- B. CONTRACTOR shall be responsible to keep all streets, drives, and parking lots in the area free of mud, clay, gravel, and other materials which vehicles or equipment may track or scatter onto them, or which may be deposited by uncontrolled drainage of water directly onto streets or drives.
 - i. Frequency of cleaning shall be based upon amount of material deposited, not necessarily done on a fixed schedule.
 - ii. CONTRACTOR failure to comply with these requirements within twenty-four hours after being given notice by the OWNER or the ENGINEER will result in the OWNER having streets cleaned and deducting costs from amount due CONTRACTOR.
 - iii. Vehicles and equipment shall not be flushed out or dumped onto any streets, drives, walks, gutters, or on grounds of any private property.
- C. CONTRACTOR shall maintain dust-free roadways at all times. Roadway surfaces shall be kept watered as required.

END OF SECTION

SECTION 01600

MATERIAL AND EQUIPMENT

1. GENERAL

- A. The requirements of the Contract Documents, including the General Conditions, the Supplementary Conditions and Division 1 – General Requirements, and the Wisconsin Best Practices Management Handbook apply to this section except as modified herein.

2. SECTION INCLUDES

- A. Products
- B. Transportation and Handling
- C. Storage and Protection
- D. Product Options
- E. Substitutions

3. RELATED SECTIONS

- A. Section 01400 - Quality Control
- B. Section 01700 - Contract Close Out

4. PRODUCTS

- A. Products include material, equipment, and systems.
- B. Comply with Specifications and referenced standards as minimum requirements.
- C. Components required to be supplied in quantity within a Specification section shall be the same and shall be interchangeable.

5. TRANSPORTATION AND HANDLING

- A. Transport products by methods to avoid product damage; deliver in undamaged condition in manufacturer's unopened containers or packaging, dry.
- B. Provide equipment and personnel to handle products by methods to prevent soiling or damage.
- C. Promptly inspect shipments to assure that products comply with requirements, quantities are correct, and products are undamaged.

6. STORAGE AND PROTECTION

- A. Store loose granular materials on solid surfaces in a well-drained area; prevent mixing with foreign matter.
- B. Arrange storage to provide access for inspection. Periodically inspect to assure the products are undamaged and are maintained under required conditions.

7. PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Any product meeting those standards.
- B. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for an approved equal.

8. SUBSTITUTIONS

- A. Only within 10 days after date established in Notice to Proceed will the ENGINEER consider requests from CONTRACTOR for substitutions. Subsequently, substitutions will be considered only when a product becomes unavailable due to no fault of CONTRACTOR.
- B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.
- C. Request constitutes a representation that CONTRACTOR:
 - i. Has investigated proposed product and determined that it meets or exceeds, in all respects, specified product.
 - ii. Will provide the same warranty for substitution as for specified product.
 - iii. Will coordinate installation and make other changes which may be required for work to be complete in all respects.
 - iv. Waives claims for additional costs which may subsequently become apparent.
- D. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals without separate written request, or when acceptance will require substantial revision of Contract Documents.
- E. The TOWN will determine acceptability of proposed substitution and will notify CONTRACTOR of acceptance or rejection in writing.
- F. Only one request for substitution will be considered for each product. When substitution is not accepted the contractor shall provide the specified product.

END OF SECTION

SECTION 01700

CONTRACT CLOSEOUT

1. GENERAL

- A. The requirement of the Contract Documents, including the General Conditions the Supplementary Conditions and Division I - General Requirements apply to this section except as modified herein.

2. CLEAN-UP AND FINAL INSPECTION

- A. The CONTRACTOR shall have thorough and systematic clean-up operations follow closely behind the construction work. CONTRACTOR shall, at its own expense, remove and properly dispose of all dirt, rubbish, construction debris, brush, gravel, wood or any other foreign substances from the site. When the CONTRACTOR has cleaned the work site and is ready for final inspection, a walk through shall be scheduled with the ENGINEER. This shall be done prior to the CONTRACTOR leaving the site. Upon the OWNER's or the ENGINEER's inspection, if the work is not found satisfactory the ENGINEER may require further cleaning and repair and when these are completed, will again inspect the work. In no case will the job be considered complete until the CONTRACTOR has complied with all the requirements set forth and the OWNER and the ENGINEER has made their final inspection of the entire work and is satisfied that the entire work is properly and satisfactorily constructed in accordance with the plans and specifications and that such work is ready for acceptance by the OWNER.

3. GUARANTEE

- A. The CONTRACTOR shall be liable for the acceptable condition of all work including backfill and surface restoration, both during construction and throughout the guarantee period. The guarantee period of three (3) years, shall commence on the date of OWNER acceptance of Final Completion. Should any defect appear either during construction or the guarantee period, the CONTRACTOR shall in conformance to a written order from the OWNER or the ENGINEER, make the required repairs or replacement at his own expense.

4. FINAL PAYMENT

- A. After the work has been finally accepted by the TOWN, the CONTRACTOR will be paid in accordance with the final payment provisions of Section 01150 of these Specifications and the General Conditions.

END OF SECTION

SECTION 02 41 13

DEMOLITION

PART 1 - GENERAL

1.01 SCOPE

- A. The work under this section shall consist of providing all work, materials, labor, equipment, and supervision necessary to provide for the demolition of site work and such features as required in these specifications and on the drawings. Included are the following topics:

PART 1 - GENERAL

Scope

Related Work

Submittals

Record Drawings

Safety

Permits

Removing/Salvaging of Items

PART 2- MATERIALS

Equipment

PART 3- EXECUTION

Protection of Existing Work and Facilities

Demolition

Demolition below Grade

Demolition Backfill

Drain Tile

Transportation and Disposal of Demolition Waste

1.02 RELATED WORK

- A. Applicable provisions of Division 01 govern work under this Section.

Section 31 25 00 Erosion Control

1.03 SUBMITTALS

- A. For utilities or other services requiring removal or abandonment in-place, submit materials documenting completion of such work.
- B. Submit record drawings.
- C. Submit copies of records documenting recycling or disposal of demolition materials from the site.

1.04 RECORD DRAWINGS

- A. Maintain record drawings showing actual locations of utilities and other features encountered, and any deviations from the original design. Show actual limits of removal and demolition.

1.05 SAFETY

- A. Verify that all gas and electrical utilities have been abandoned or disconnected and associated hazards mitigated, prior to beginning any demolition.

- B. Take all necessary precautions while dismantling piping containing gas, gasoline, oil or other explosive or toxic fluids or gases. Purge lines and contain materials in accordance with all applicable regulations. Store such piping outdoors until fumes are removed.
- C. Maintain a clean and orderly site. Remove debris at end of each workday.
- D. Burning of debris is not permitted.
- E. If hazardous materials are not anticipated, but encountered, terminate operations and contact the Construction Representative immediately. Follow all applicable local, state and federal regulations pertaining to hazardous materials.

1.06 PERMITS

- A. Unless otherwise noted, Contractor shall be responsible for obtaining and paying for all permits necessary to complete demolition work.
- B. If necessary, file and maintain Notification of Demolition and/or Renovation and Application for Permit Exemption (WDNR Form 4500-113) in accordance with the Wisconsin Department of Safety and Professional Services Administrative Code Chapter NR447

1.07 REMOVAL/SALVAGING OF ITEMS

- A. Carefully remove all items that are scheduled to be salvaged.
- B. Secure salvaged items to allow for future movement; provide pallets, skids and other devices as necessary. Secure all loose parts.
- C. Provide crates, padding, tarps and other measures necessary to protect salvaged items during storage. Store items in secure location, safe from vandalism, weather, dust and other adverse elements.
- D. Where salvaged items are indicated to be turned over to Owner, deliver to location on property where designated by Owner.
- E. Where indicated to be incorporated into new work, store the salvaged item in secure location until trade responsible for re-installation mobilizes his equipment and storage facilities to the site, or otherwise accepts responsibility for the salvaged item.

PART 2 - MATERIALS

2.01 EQUIPMENT

- A. Use Contractor's normal equipment for demolition purposes and which meets all safety requirements imposed on such equipment.

PART 3 - EXECUTION

3.01 PROTECTION OF EXISTING WORK AND FACILITIES

- A. Take all measures necessary to safeguard all existing work and facilities which are outside the limits of the work.
- B. Furnish and install fencing or other barriers as shown on the plans or as otherwise necessary to protect existing features.
- C. Verify the locations of, and protect, any buildings, structures, utilities, paved surfaces, signs, streetlights, utilities, landscaping and all other such facilities that are intended to remain or be salvaged.

- D. Make such explorations and probes as necessary to ascertain any required protection measures that shall be used before proceeding with demolition.
- E. Provide and maintain adequate catch platforms, warning lights, barricades, guards, weather protection, dust protection, fences, planking, bracing, shoring, piling, signs, and other items required for proper protection. Provide protection for workmen, public, adjacent construction and occupants of existing building(s).
- F. Report damage of any facilities or items scheduled for salvaging to the Construction Representative.
- G. Repair or replace any damaged facilities that are not scheduled for demolition.
- H. Explosives shall not be used for demolition.
- I. Keep streets, walks and all other adjacent paved areas clean and swept clear of dirt, mud and debris deposited as a result of this operation.
- J. Protect surrounding area from dust. Control rodents, and other vermin associated with demolition operations.

3.02 DEMOLITION

- A. Remove all equipment, fixtures and other materials scheduled for salvage prior to beginning demolition operations.
- B. Demolish and remove all buildings and structures scheduled for demolition as shown on the plans.
- C. Abandon gas, electric and communication utilities in accordance with local utility company requirements, or applicable substantive requirements if considered private.
- D. Carry out vehicle loading as necessary within the project boundaries or as defined or indicated on the drawings, but not in locations that block vehicular traffic on the streets or pedestrian traffic on adjacent public walks.
- E. Dismantle each structure in an orderly manner to provide complete stability of the structure at all times. Provide bracing and shoring where necessary to avoid premature collapse of structure.
- F. Conduct demolition operations and the removal of rubbish and debris in such a way that a minimum of nuisance dust is caused. Constantly sprinkle rubbish and debris with water if necessary, to keep nuisance dust to a minimum.
- G. Where necessary to prevent collapse of any construction, install temporary shores, underpinning, struts or bracing. Do not commence demolition work until all temporary construction is complete.
- H. During the execution of the work, provide, operate, and maintain all pumping equipment, suction and discharge lines in a number of capacity as required to keep all cellars and pits free of water from any source whatsoever at all times.
- I. Masonry and concrete shall be demolished in small sections. Use braces and shores as necessary to support the structure of the building or structure and protect it from damage. Where limits of demolition are exposed in the finished work, cutting shall be made with saws, providing an absolutely straight line, plumb, true and square.
- J. Operate equipment so as to cause a minimum of damage to plaster which is to remain, and so as to keep dust and dirt to a minimum.

3.03 DEMOLITION BELOW GRADE

- A. Demolish foundation walls and other below grade features in accordance with the plans. Unless otherwise noted, remove all below grade features to a point 4' below adjoining existing grade, or proposed grade, whichever is lower. Basement and/or lowest level floors more than 4' below existing grade need not be removed, but must be broken up to permit drainage.

3.04 DEMOLITION BACKFILL

- A. Backfill and compact below grade areas and voids resulting from demolition of structures and other abandonment and demolition.
- B. Backfilling shall not begin until demolition and abandonment has been approved and documented by the Construction Representative.
- C. Prior to placement of fill materials, ensure that areas to be filled are free of standing water, frost, frozen materials, trash and debris.
- D. Backfill type, lift thickness and compaction requirements shall be in accordance with Section 31 05 00 - Common Work Results for Earthwork (Outside the Building Footprint).

3.05 DRAIN TILE

- A. Carefully protect and/or replace drain tiles encountered during demolition which are necessary to maintain site drainage conditions. Immediately repair or replace any drain tiles not scheduled for demolition, but damaged. Report damage to the Construction Representative. Repairs to drain tile or replacement drain tile shall be comparable or better than the existing drain tile system.
- B. Test drain lines with water to assure free flow before covering. Remove all obstructions which may be found, retest until satisfactory.
- C. Repairs to drain tile or replacement drain tile shall be comparable or better than the existing drain tile system.

3.06 TRANSPORTATION AND DISPOSAL OF DEMOLITION WASTE

- A. Transport and dispose all demolition waste in accordance with local, state, and federal guidelines.
- B. Whenever possible, or otherwise required by the Contract Documents, recycle demolition waste.
- C. Demolition waste shall be disposed of at a landfill or dumpsite designed and approved to accept the given waste.
- D. Maintain records documenting recycling and disposal of demolition waste. Record description of material, date removed, quantity removed, method of transport and recycling/disposal destination.

END OF SECTION

SECTION 03 30 05

CAST-IN-PLACE CONCRETE (OUTSIDE THE BUILDING FOOTPRINT)

PART 1 - GENERAL

- A. Work Included: Cast-in-place concrete required for this Work Is indicated on the drawings and includes, but is not necessarily limited to:

PART 1 -General

Scope
Quality Assurance
Submittals
Product Handling
Reference Specifications

PART 2- Products

Concrete Materials
Miscellaneous
Materials Mixes and Delivery
Detectable Warning Field

PART 3- Execution

Field Quality Control Preparation Concrete Placement Concrete Joints
Expansion/Isolation Joints Concrete Curing and Protection Tolerances
Dense Graded Base
Concrete Curb and Gutter
Concrete Sidewalks, Pads and Driveways

- B. Provide all work, materials, labor, equipment and supervision necessary.

- C. Related work described elsewhere:

Section 31 05 00 Common Work Results for Earthwork (Outside the Building Footprint)

Section 32 11 23 Dense Graded Base

1.02 QUALITY ASSURANCE

- A. All work shall be in accordance with applicable manufacturer's and suppliers instructions as well as applicable sections of the WisDOT Standard Specifications.
- B. Qualifications of Workers:
1. Provide at least one person who will be present at all times during execution of this portion of the work who is thoroughly trained and experienced in placing the types of concrete specified and who will direct all work performed under this Section.
 2. For finishing of exposed surfaces of concrete, use only thoroughly trained and experienced concrete finishers.
 3. Concrete field tests for water content, slump, air content, yield, and strength cylinders shall be conducted by a certified Wisconsin Concrete Technician, or technician of equivalent certification.
- C. Correction of Defective Work: All concrete work which does not conform to the requirements of the Contract Documents and ACI 301, including function, durability, appearance, strength, cracking, tolerances and finishing, shall be corrected as directed by the ENGINEER at Contractor's expense. Additional testing, engineering, reinforcement and removal and replacement of defective concrete shall be paid for by Concrete Contractor. Contractor shall also be responsible for the cost of corrections to any other work affected by or resulting from corrections to the concrete work.

1. Concrete repairs including, but not limited to, patching, epoxy injection, routing and sealing, shall be performed by a specialty repair/restoration contractor, certified by the material supplier.
 - a. Provide qualifications to the ENGINEER for review and approval.
 - b. Restoration contractor shall provide material lists and describe means and methods to the ENGINEER for review, prior to commencement of work.
 - c. Acceptance of units, repaired pursuant to written approval, is contingent upon repairs being skillfully done so as to be sound, permanent, flush with adjacent surfaces and, when exposed, of color and texture matching similar adjoining surfaces and showing no apparent line of demarcation between original and repaired work.

1.03 SUBMITTALS

- A. Materials List: Within 30 days after award of Contract, and before any concrete is delivered to the job site, submit to the ENGINEER, in accordance with General Conditions, a complete list of all materials proposed to be furnished and installed under this portion of the Work, showing manufacturer's name and catalog number of all items such as admixture and membrane, and the name and address of transit-mix concrete supplier. Prior to starting construction, General Contractor shall also furnish a statement to the ENGINEER giving source, sieve analysis and specific gravity of both fine and coarse aggregate, proportions by weight (dry) of cement, fine and coarse aggregates, admixtures, and water that will be used in the manufacture of each class of concrete specified. No change in source of materials shall be made without prior notification to the ENGINEER.
- B. Concrete Mix Design: Submit five (5) copies of Mix Design to the ENGINEER for review. This submittal shall include the following:
 1. Required cylindrical compression strength (28 day).
 2. Element (curb, driveway, etc.) in which each class (strength of concrete) will be used.
 3. Cylinder compressive strength test results or complete standard deviation analysis in accordance with ACI 318 Section 5.3.
 4. Proportions of Materials.
 5. Source of materials - Cement (type and brand), gravel pit.
 6. Aggregate size and certification from an independent testing lab that gradation, specific gravity, soundness, absorption, and impurities meet ASTM requirements.
 7. Admixture brand, dosage, literature.
 8. Air content.
 9. Water content and target slump.
 10. Range of ambient temperature and humidity for which design is valid.
 11. characteristics of mix which require precautions in mixing, placing, or finishing techniques to achieve finished product specified.
- C. Product Data: Submit manufacturer's product data for review with application and installation instructions for proprietary materials and items including patching compounds, epoxies, curing compounds, dry-shake finish materials, hardeners, sealers etc. for all items specified and used in materials list.
- D. Substitutes to Specified Items:
 1. Provide all product literature for substitutes to the ENGINEER for review.
 2. Manufacturer's Representative shall certify in writing that the proposed substitute product meets or exceeds all requirements, test results, etc. in the Specification and the specified product's literature. Provide test results performed by an independent testing agency using the same test methods.
 3. Specify amount of credit to owner if substitute is approved.
- E. Construction Joints: Submit drawing of proposed construction joints for review for slabs on grade if different from those shown on drawings or if none shown on drawings.

- F. Transit-mix delivery slips: With each load of concrete delivered to job, there shall be furnished by ready-mixed concrete producer duplicate delivery tickets, one (1) for Contractor and one (1) for Owner's representative. Delivery tickets shall provide following information:
1. Date
 2. Name of ready-mixed concrete plant
 3. Job location
 4. Contractor
 5. Type (Standard, A.E. or H.E.S.) and brand name of cement
 6. Class and specified cement content In pounds per cubic yard (.76 m3) of concrete
 7. Truck number
 8. Time dispatched
 9. Amount of concrete in load in cubic yards (.76m3)
 10. Admixtures in concrete
 11. Maximum size of aggregate
 12. Water added at job, if any.
 13. Make the record available to the ENGINEER for inspection upon request.
- G. Provide samples of broomed finish, stamped patterns, and dye colors.
- H. Provide copies of all quality assurance testing reports.
- I. Provide manufacturers product information (cut sheets) for truncated domes.

1.04 PRODUCT HANDLING

- A. Protection: Use all means necessary to protect cast-in-place concrete materials before, during and after installation and to protect the installed work and materials of all other trades.
- B. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the ENGINEER at no additional cost to Owner.
- C. Do not use aluminum pipe if concrete is to be transported by means of pumping. Aluminum will not be allowed in concrete.

1.05 REFERENCE SPECIFICATIONS

- A. The following latest edition reference specifications, guides and standards shall become part of this specification as if herein written. If provisions conflict, the more stringent provisions shall apply.

ACI 117	Specifications for Tolerances for Concrete Construction and Materials and Commentary.
ACI 211.1	Recommended Practice for Selecting Proportions for Normal Mass and Heavyweight Concrete
ACI 211.2	Recommended Practice for Selecting Proportions for Lightweight Concrete
ACI 212	Chemical Admixtures for Concrete
ACI 214	Recommended Practice for Evaluation of Results of Tests used to Determine the Strength of Concrete
ACI 302.1	Guide for Concrete Floor and Slab Construction
ACI 303.1	Standard Specification for Cast-In-Place Architectural Concrete

ACI 304	Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete
ACI 304.2R	Placing Concrete by Pumping Method
ACI 305.1	Specification for Hot Weather Concreting
ACI 306	Cold Weather Concreting
ACI 306.1	Standard Specification for Cold Weather Concreting
ACI 308.1	Standard Specification for Curing Concrete
ACI 309	Recommended Practice for Consolidation of Concrete
ACI 318	Building Code Requirements for Reinforced Concrete
ACI ITG-4.1	Specification for High-Strength Concrete in Moderate to High Seismic Applications (IBC Seismic Design Categories C-F)
ASTM C 31	Method of Making and Curing Concrete Specimens in the Field
ASTM C 33	Standard Specification for Concrete Aggregate
ASTM C 39	Test Method for Compressive Strength of Cylindrical Concrete Specimens
ASTM C 94	Standard Specification for Ready-Mixed Concrete
ASTM C 138	Standard Method of Test for Weight per Cubic Foot, Yield, and Air Content (Gravimetric) of Concrete
ASTM C 143	Standard Method of Test for Slump of Portland Cement Concrete
ASTM C 150	Specification for Portland Cement
ASTM C 171	Sheet Materials for Curing Compound
ASTM C 172	Method of Sampling Fresh Concrete
ASTM C 173	Standard Method of Test for Air Content of Freshly Mixed Concrete by the Volumetric Method
ASTM C 192	Standard Method of Making and Curing Concrete Test Specimens in the Laboratory
ASTM C 231	Standard Method of Test for Air Content of Freshly Mixed Concrete by the Pressure Method
ASTM C 260-	Specification for Air-Entraining Admixtures for Concrete
ASTM C 330-	Standard Specification for Lightweight Aggregates for Structural Concrete
ASTM C 494	Specification for Chemical Admixtures for Concrete
ASTM C 595	Specification for Blended Hydraulic Cements
ASTM C 618	Specification for Fly Ash and Raw or Calcinated Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete.

ASTM C989 Standard Specification for Slag Cement for Use in Concrete and Mortars.
ASTM C1017- Standard Specification for Chemical Admixtures for Use in
Producing Flowing Concrete

OSHA Standard "Safety and Health Regulations for Construction", Part 1926 Subpart Q:
"Concrete and Masonry Construction."

ANSI A10.9 Safety Requirements for Concrete Construction and Masonry Work

Standard Specification for Highway and Structure Construction, State of Wisconsin.

AASHTO T318 Standard Method of Test for Water Content of Freshly Mixed Concrete
Using Microwave Oven Drying"

PART 2 -PRODUCTS

2.01 CONCRETE MATERIALS

- A. General: Concrete shall conform to Sections 501 and 601 of the Standard Specifications for Highway Construction.
- B. General: All concrete, unless otherwise specifically permitted by the ENGINEER shall be transit-mixed in accordance with ASTM C 94.
 - 1. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, each aggregate from one source, and each admixture from the same manufacturer.
 - 2. In regions where Alkali Silica Reactions (ASR) occur concrete mixes shall be provided with proven performance history to mitigate the problems through the use of:
 - a. Low-alkali cement
 - b. Non-reactive aggregates
 - c. Pozzolans
 - d. Lithium-based admixtures
- C. Portland Cement:
 - 1. Standard Portland Cement: ASTM C 150, Type 1.
 - 2. High Early Strength Portland Cement: ASTM C 150, Type 3.
 - 3. Self-Consolidating Concrete (SCC): A highly flowable, non-segregating concrete that spreads into place, fills formwork, and encapsulates congested reinforcement, which can be placed by means of its own weight, with little or no vibration. The flowability of SCC is measured in terms of spread when using a modified version of the slump test (ASTM C143). The spread (slump flow) of sec typically ranges from 18 to 32 inches and shall depend on the requirements for the project. The viscosity, as visually observed by the rate at which concrete spreads, shall be controlled when designing the mix to suit the type of application being constructed.
- D. Aggregates:
 - 1. In general, comply with ASTM C 33.
 - 2. Fine natural sand, clean, hard, strong, durable, uncoated grains, free from all injurious, deleterious substances passing No. 4 sieve.
 - 3. Coarse gravel or crushed stone, clean, hard, strong, durable, uncoated pieces free from deleterious substances.
 - a. 1-1/2" (3.8 cm) maximum size aggregate shall conform to gradation for size No.4 and 3/4" (1.9 cm) aggregate to size No. 67 in Table II of ASTM C 33.
 - b. When 1-1 1/2" (3.8 cm) size is used, it shall be proportioned with 3/4" (1.9 cm) aggregate so as to produce gradation conforming to size No. 46 in Table II of ASTM C33.

4. Where concrete is exposed to view, aggregate shall not contain iron or other staining elements.
 5. For exterior exposed surfaces, sidewalks, drives, etc. and parking structures, do not use fine or coarse aggregates containing spalling-causing substances. The amount of chert with a specific gravity less than 2.40 shall be limited to 1.0% of the weight of the coarse aggregate.
- E. In regions where Alkali Silica Reactions (ASR) occur concrete mixes shall be provided with proven performance history to mitigate the problems through the use of:
1. Low-alkali cement
 2. Non-reactive aggregates
 3. Pozzolans
 4. Lithium-based admixtures
- F. Fly Ash: ASTM C-618 Class "C", the product of only one manufacturer using one source of coal. Maximum loss of ignition shall not exceed three percent (3%). Use Class "F" Fly Ash for mass concrete. Use only when permitted by Engineer.
- G. Cement: ASTM C 989, Grade 100 or Grade 120 ground granulated blast-furnace slag.
- H. Chemical Admixtures:
1. Admixtures shall not contain more chloride ions than are present in municipal drinking water
 2. Shall be from the WisDOT Approved Products List (PAL)
 3. Prohibited Admixtures: Calcium chloride, thiocyanates or admixtures containing more than 0.05% chloride ions by weight of admixture are not permitted.
 4. Certification: Written conformance to the above-mentioned requirements and the chloride-ion content of the admixture is required from the admixture manufacturer.
- I. Synthetic Fibers shall be used in concrete mix design in lieu of welded wire fabric. Synthetic fibers shall not replace reinforcing rebar/dowels as depicted on the Construction Details.
- J. Water: potable
- K. Curing and Sealing Compound:
1. Curing and sealing compounds shall be used for interior or exterior applications where concrete is left exposed with no other finish coating or hardener. Compound shall be compatible with paint or striping applications.
 2. Liquid type, membrane forming curing and sealing compound complying with ASTM 1315 Type 1, Class A with 25% solids, VOC compliant. And found on the WisDOT Approved Products List (PAL)
 - a. Provide test data from an independent testing laboratory indicating a maximum moisture loss of 0.04 grams per sq. em. when applied at a coverage rate of 300 sq. ft. per gallon.
 - b. Colorless, clear or with fugitive dye or pigment, non-yellowing, U.V. resistant, resin based, not wax based.
 3. Provide a second application for sealing and dust-proofing after 30 days, unless noted otherwise.

2.02 MISCELLANEOUS MATERIALS

- A. Expansion/Isolation Joints:
1. Premolded expansion joint strips 3/4" thick of premolded resilient, compressible, re-expanding, nonextruded, bituminous, and fiber materials, conforming to ASTM D-994.
 2. Plastic joint fillers where called for on drawings or specified shall be foamed polyvinyl chloride plastic premolded joint filler, thickness, and width as shown.
 - a. "Rodofoam, Grade 327" (Eieclrovert, Inc.)
 - b. Approved equal

3. Joint Filler and Sealants: Polyurethane joint sealant for slab-on-grade control and construction joints required for all exposed concrete where specified on the drawings.
 - a. "Sikaflex 2CSL" (Sika)
 - b. "THC-900", (Tremco), level surfaces
 - c. "Vulkem 245SL"
 - d. "THC-901", (Tremco), sloped surfaces
 - e. "Eucolastic II", (Euclid Chemical)
 - f. "Sonolastic SL2", (Sonneborn)
 - g. Approved equal
- B. Felt: 15 lb. (6.8kg) asphalt saturated. ASTM D 250.
- C. Edge Forms and Screeds: Proper wood or metal screeds, accurately leveled and securely fastened, shall be provided to bring the floor and other slabs to the required elevation for the concrete strikeoff operation.
- D. Moisture Absorptive Cover: Burlap cloth made from jute or kenaf, weighing approximately 9 oz. per sq. yd., complying with AASHTO M 182, Class 2.
- E. Moisture Retaining Cover: One of the following, complying with ASTM C 171, for moist-curing concrete:
 1. Waterproof Paper
 2. Polyethylene sheet not less than 6 mills thick
 3. Polyethylene-coated burlap
- F. Bonding Compound: Polyvinyl acetate or acrylic base, re-wettable type, for cosmetic nonstructural repairs.
 1. "Euco Weld" (Euclid Chemical)
 2. "Weldcrete" (Larsen Co.)
- G. Epoxy Products: Two component material suitable for use on dry or damp surface, complying with ASTM C 881, for use in all structural concrete repairs.
 1. Products for Crack Repair:
 - a. "Eucopoxy Injection Resin" or "Dural 50"; Euclid
 - b. "Concresive Standard LVI"; BASF
 - c. "Product R303", Concrete Injection Resin; "Rescon" Technology Corp.
 - d. Sikadur 35 Hi Mod LV"; Sika Chemical Company
 - e. Approved equal
 2. Products for Epoxy Mortar Patches, Interior use:
 - a. "Concresive 3007" or "Concresive LPL Liquid"; BASF
 - b. "Euco Epoxy #452" or "Duralcrete System"; Euclid
 - c. "Product R616, Concrete Bonder" or "Product R404, Epoxy Mortar Resin"; Rescon Technology
 - d. "Sikadur21 Lo Mod LV"; Sika Chemical Company
 - e. "Sikadur 23 Lo Mod Gel"; (overhead, vertical)
 - f. Approved equal
 3. Products for Epoxying Bolts or Reinforcing Steel into Concrete:
 - a. "Euco 452 Gel" or "Euco 452MV" or "Duralcrete Gel"; Euclid
 - b. "Concresive 1420 Cartridge System"; BASF
 - c. "Product R606, Concrete Bonder"; Rescon Technology Corp.
 - d. "Sikadur 31 Hi-Mod Gel"; (vertical use) Sika Corporation
 - e. "Sikadur 32 Hi-Mod Gel"; (horizontal use) Sika Corporation
 - f. Approved equal
- H. Polymer Modified Mortars for interior or exterior concrete surface repairs including spalls and patches in non-corrosive environments:
 1. "Sika Repair 222 with Sikalates R"; horizontal repairs; Sika Chemical Corp.
 2. "Sika Repair 223 with Sikalates R"; vertical repairs; Sika Chemical Corp.

3. "Euco Verticoat Supreme" or "Speed Crete Red Line"; Euclid Chemical
4. "Euco Thin Top Supreme" or "Tammspatch II" ; Euclid Chemical
5. Approved equal

2.03 MIXES AND DELIVERY

- A. Concrete Mix:
 1. Ready-mixed concrete shall be subject to the following:
 - a. Concrete must meet all requirements of the ASTM C 94, ACI 211, ACI 318 Chapter 4 Durability Requirements, and those herein specified for materials, proportioning, mixing and other details of manufacturer, quality and deliver.
 - b. Submit suitable evidence as to experience, equipment and capacity of plant to the ENGINEER for approval.
- B. Mix Proportioning: Furnish ready-mixed concrete in accordance with the following:
 1. Minimum compressive strength at 3 days: 1,800 psi
 2. Minimum compressive strength at 28 days: 4,000 psi
 3. Max Slump:
 - a. 1.5 inches for Slip-form Curb
 - b. 2-4 inches for sidewalk
 4. Air-entrained
 5. Maximum aggregate size shall not exceed one third of the slab on grade thickness
 6. Air entrained concrete: Use for all exterior slabs, walls, walks, platforms, ramps, steps, all portions of parking ramps, and all other concrete exposed to freezing and thawing.
 7. Coordinate with Contractor as to project schedule. Reduce water/cementitious ratio to 0.40, with MRWR or HRWR, to achieve required water vapor emission rates for installation of finish materials.
- C. Additional Mix Requirements
 1. Cement content specified above is minimum, except:
 - a. If concrete mix test results in accordance with ACI318 Section 5.3 indicate strength greater than that specified, reduction of specified cement content is allowed.
 - b. Should test results indicate strength below that specified, additional cement shall be added without cost to Owner.
 2. Fly Ash may be used as a pound for pound replacement of cement up to 20% of the total cementitious content, except for finished flatwork during winter construction, subject to the ENGINEER's approval.
 - a. Mixes shall develop sufficient strength to meet contractor's schedule for flatwork finishing and formwork removal. Adjust proportions of fly ash as required.
 3. Combination of Fly Ash and Slag, at a 1:1 ratio, may be used as a pound-for-pound replacement of cement as follows:
 - a. 30% of the total cementitious content, except for finished flatwork during winter construction.
 - b. Mixes shall develop sufficient strength to meet contractor's schedule for flatwork finishing and formwork removal. Adjust proportions of fly ash and slag as required.
 4. Air-Entrained Concrete:
 - a. requiring air entrainment shall contain six (6) percent plus or minus one and a half (1.5) percent air by volume, (at end of discharge hose if pumped) for 3/4" dia. aggregate. Conform to ACI 318, Chapter 4. Give proper consideration to the reduction of air content when fly ash is used.
 5. Where synthetic fibers are used in slabs, mix designer shall adjust the admixture dosage and/or water content to maintain the specified slump and adjust mix for increase in air content from fibers.

- D. Admixture Usage:
1. All concrete must contain the specified water-reducing admixture or water-reducing/retarding admixture and/or the specified high-range water-reducing admixture (superplasticizer).
 2. Specified cement contents shall be increased 10 percent (10%) when no water-reducing admixtures are used.
 3. When temperature is at or below 40 degrees F when placing or within next 24 hours, all concrete, less than 8" in thickness, shall contain the specified non-corrosive, non-chloride accelerator.
 4. All concrete required to be air entrained shall contain an approved air entraining admixture.
 5. All pumped concrete, concrete for industrial slabs, synthetic fiber concrete, architectural concrete, self-consolidating concrete (SCC), concrete for wall pours exceeding 14 feet in height or with high rebar congestion which makes consolidation difficult (bars at 4" on center or less), concrete required to be water-tight and concrete with a water/cementitious ratio below 0.41 shall contain the specified site applied high-range water-reducing admixture (Superplasticizer). Mid-range plasticizers may be substituted for high-range when water-cementitious ratios exceed 0.45. Do not use HRWR or MRWR at the batch plant.
 6. When high temperatures and/or placing conditions dictate and/or when concrete temperatures exceed 80 degrees F. use a water-reducing-retarding admixture (Type D) in lieu of the water-reducing admixture (Type A).
 7. Self-Consolidating Concrete (SCC) shall be used as noted on the plans. The concrete shall contain the specified high-range water-reducing admixture and viscosity-modifying admixture where required. Minimum slump/flow of 20-30" is required by the successful test placement. The workability, pumpability, finishability, and setting time of the proposed mix design shall be verified with a successful test placement onsite.
 8. Admixture Certifications must be submitted with the proposed mix design for review by the ENGINEER.
 9. No other admixtures will be permitted.
- E. Measuring Materials: Cement, aggregates, water and admixtures shall be measured and combined strictly in accordance with ASTM Specification C 94.
- F. Mixing and Delivery:
1. Ready-mixed concrete shall be mixed and delivered to point designated by means and standards set forth by ASTM Specification C 94.
 2. Mixers and agitators may be examined by a representative of Owner for changes in conditions due to accumulation of hardened concrete or mortar or through wear of blades.
 3. When concrete is mixed in a truck mixer loaded to its maximum rated capacity, number of revolutions of drums or blades at a mixing speed shall not be less than 70 or more than 100.
 4. When a truck mixer or a truck agitator is used for transporting concrete, concrete shall be delivered to site of work, and discharge shall be completed within one and one-half (1-1/2) hours or before drum has revolved a total of 300 revolutions, whichever comes first, after introduction of mixing water to the cement and aggregates, or mixing of cement and aggregates, unless a longer time is specifically authorized by the ENGINEER. In hot weather, or under conditions contributing to quick stiffening of concrete, concrete delivery and discharge shall be completed within 45 minutes.
 5. Water may be added on the job site in the presence of a testing laboratory representative, to bring the slump to the specified level, but not to exceed 1 gallon per cubic yard and prior to any superplasticizer use. For concrete with w/c less than 0.41 and for concrete exceeding 4,600 PSI strength, concrete supplier's representative and Engineer shall provide approval prior to addition of any water. Mixing time shall be appropriately increased with a minimum of twenty (20) revolutions of the drum. The maximum slump shall not be exceeded with the

addition of water, Concrete with higher slumps will be rejected. Contractor may exceed specified slump only if a superplasticizer is used. Amount of water added on the jobsite shall be recorded on each delivery ticket and concrete test report. All slump tests shall be taken after all water has been added. Water shall not be added to the batch at any later time.

6. Drivers may not wash concrete trucks, or discharge water at any time into pump hoppers used for concrete pumping operation.

2.04 DETECTIBLE WARNING FIELD

- A. Detectable warning fields to be Neenah Foundry Detectable Warning Fields (or approved equal), black in color. The color shall be verified with the owner prior to ordering and installation.

PART 3 - EXECUTION

3.01 FIELD QUALITY CONTROL

- A. If, In the opinion of the ENGINEER or designer, concrete of poor quality has been placed, concrete tests shall be made as directed. Concrete quality shall be based on visual inspection of the concrete and review and analysis of the cylinder strengths. Tests shall be at the expense of Contractor. Tests may be compression tests on cored cylinders obtained by a Testing Laboratory per ASTM C42 or load tests per ACI318 or as recommended by the Testing Laboratory and directed by the ENGINEER or designer.

3.02 PREPARATION

- A. Notification:
 1. Notify the ENGINEER at least 3 working days in advance before pouring.
- B. Preparation:
 1. Before Placing Concrete:
 - a. Clean all mixing and transporting equipment.
 - b. Remove all ice, snow, dirt, chips and other debris from forms or place to receive concrete.
 - c. Flush and wet down forms thoroughly to close any cracks between boards.
 - d. Wet down subgrade with as much water as it will absorb readily. Remove standing water.
 - e. Do not place concrete in dry forms or on dry subgrade.

3.03 CONCRETE PLACEMENT

- A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.
- B. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.
 1. Deposit concrete in horizontal layers of depth to not exceed formwork design pressures and in a manner to avoid inclined construction joints.
 2. Place all concrete in accordance with ACI 304, ACI 304.2R and ACI 302 for slabs. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
 3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of

vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.

4. Specified superplasticizers, or approved alternative admixtures, are required in the concrete mix if concrete pumping is used for placement.
 5. Delivery carts or buggies and/or pumping equipment shall be kept on temporary runways built over floor systems. Runway supports shall not bear on reinforcing steel or fresh concrete.
 6. Concreting operation shall not alter location of reinforcing bars. Extreme care by workmen is required. Do not drag or drop equipment, such as pumping hose on reinforcement.
 7. In no case shall concrete be delivered or placed with a free fall exceeding 10 feet for concrete containing superplasticizer, 15 feet for self-consolidating concrete (SCC) or 5 feet for other concrete. Spreading of concrete with hoes and shovels for distance greater than 6'0" from delivery end of chutes, carts or buggies will not be permitted.
 8. Consistency of concrete to be such that it will be:
 - a. Uniform throughout with mortar clinging to coarse aggregate;
 - b. Plastic enough that concrete will work readily into corners and angles of forms and around reinforcement without excessive puddling or spading and without segregation of material or collecting of free water on surface while transporting or placing;
 - c. Of sufficient mortar content in mass to fill all voids, prevent harshness or honeycombing in the structure and uniform distribute coarse aggregate.
 9. Concrete shall be deposited in such a manner as to secure most thorough consolidation. Vibration with an approved "spud" type internal vibrator with flexible shaft shall be used where possible. Vibrator shall not come in contact with reinforcing or forms. Use and type of vibrators shall conform to ACI309.
- C. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
 2. Maintain reinforcement in position on chairs during concrete placement.
 3. Screed slab surfaces with a straightedge and strike off to correct elevations.
 4. Slope surfaces uniformly to drains where required.
 5. Begin Initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleed water appears on the surface. Do not further disturb slab surfaces before starting finishing operations.
- D. Concreting In Cold Weather:
1. Follow ACI 306 and 306.1 for mixing, placing and protection, and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
 - a. When temperature is at or below 40 degrees F (4 C.) when placing or within next 24 hours.
 - b. Temperature of all surfaces in contact with newly placed concrete shall be a minimum of 37°F and shall not be more than 10°F higher than minimum concrete placement temperatures specified in ACI 306.
 - c. Provide heated concrete material with temperature of concrete when placed as recommended by ACI guidelines.
 - d. Only the specified non-corrosive non-chloride accelerator shall be used. Calcium chloride, thiocyanates or admixtures containing more than 0.05% chloride ions are not permitted.
 - e. Do not place on frozen subgrades.
 - f. Do not place concrete when the air temperature does not exceed 10°F during the day.
 - g. Provide adequate housing covering and heating for freshly placed concrete for a minimum period of 72 hours after placing; maintain

temperatures above 55°F. Do not allow carbon dioxide from heating units to contact freshly placed concrete surfaces for a minimum of 48 hours. Vent all heaters outside of any enclosure.

- h. All slabs on grade shall be protected from the penetration of frost by use of heaters, Insulation, backfill, enclosures or other means. This protection shall exist throughout the entire construction period. The ENGINEER may inspect the frost penetration during construction. If frost is within 6 inches of the bottom of any construction in place, the Contractor shall take immediate steps to insulate or heat to prevent further frost penetration.
- i. If the protection provided by Contractor is inadequate and frost penetration extends beneath the bottom of the construction, this shall be a basis for rejecting that portion of the work. This rejected work shall be removed and properly replaced at the expense of Contractor.

- 2. Contractor's Responsibility: Repair or replace, in manner acceptable to the ENGINEER, all concrete work damaged due to water, snow, freezing, excessive heating and too rapid drying out.

E. Hot Weather Concreting:

- 1. Conditions warranting hot weather concreting practices are defined as any combination of high air temperature, low relative humidity and wind velocity tending to impair the quality of fresh or hardened concrete or otherwise result in abnormal properties. Place concrete, cure and protect in compliance with ACI 305, Hot Weather Concreting. Do not place concrete when the air temperature is expected to reach 90° For greater when placing or within next 24 hours.
- 2. Temperature of concrete when placed shall not be less than 50 degrees F nor exceed 85 degrees F. Control by:
 - a. Cooling aggregates;
 - b. Using cement with maximum temperature of 170 degrees F (77°C);
 - c. Using cold water or ice.
- 3. Sprinkle forms, subgrade and reinforcing with cool water prior to placing concrete. Keep buggies, chutes and other equipment shaded.
- 4. Cover reinforcing steel with water-soaked burlap if it becomes too hot, so that the steel temperature will not exceed the ambient air temperature immediately before embedment in concrete.
- 5. Mixing, Placing and Protection:
 - a. Keep mixing to minimum requirement which will insure adequate quality.
 - b. Do not expose mixers to hot sun.
 - c. Use concrete promptly.
 - d. Provide fog spraying operation immediately following placement and prior to final curing.
 - e. Finish promptly.
 - f. Protect and cure properly.
 - g. Do not use retarding agents unless approved by the ENGINEER.
 - h. Maintain concrete temperature not less than 50 degrees F nor more than 90 degrees F for the first three days after placing. Protect from temperatures over 90 degrees F for the next five days.
- 6. When high temperatures and/or placing conditions dictate, use a water-reducing-retarding admixture (Type D) in lieu of the water-reducing admixture (Type A).

F. Evaporation Retardant/Finishing Aid: During rapid drying conditions (high concrete or ambient temperatures, low humidity, high winds, direct sunlight, etc.) apply a concrete evaporation retardant and finishing aid to minimize plastic cracking. The compound may be required to be applied one or more times during the finishing operation. The initial application is usually made after the strike-off operation.

- 1. Use is subject to approval of membrane or sealer manufacturer.

3.04 CONCRETE JOINTS

- A. Use and location of expansion, contraction, control and construction joints as approved by Engineer or as shown on drawings. Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. If jointing requirements are not indicated on the drawings the contractor shall submit a request for information to the Engineer for jointing requirements. The contractor shall not proceed with work until the jointing requirements are provided by the Engineer.

3.05 EXPANSION/ISOLATION JOINTS AND CONTROL JOINTS

- A. At joints between slabs on earth and vertical surfaces, including columns, piers and walls, provide premolded joint filler strips. Before placing concrete, set isolation joint material in designated areas. Top of joint material shall be level to 1/4" below finished surface of concrete. Provide adequate means to maintain proper positioning of joint material during concrete placement. The minimum depth of isolation joint material shall be equal to the smaller of the concrete slab thickness with which it comes in contact.
- B. Control (contraction) joints shall be provided in all slabs on earth by means of 1/8" to 1/4" wide saw cuts to a depth of 1/4 slab thickness when using conventional saws, 1.25" for early entry cut saws, approximately 12'-0" on each way as directed by the ENGINEER or as shown on drawings/details. It is preferred that saw-cutting while concrete is "green" to minimize dust and provide for better quality control. Sawcut joints prior to the formation of shrinkage cracks and within 12 hours of concrete placement. Provide dust barriers during cutting operations. Vacuum/clean surfaces following cutting operations to reduce residual concrete dust.
- C. Where joint compound is indicated for control and construction joints, install premolded expansion joint filler strips topped with tapered, dressed, oiled wood strip to form groove at least 1" (2.5 cm) deep unless shown otherwise. After concrete has set, per manufacturer's exact specification, remove strip, grind or sandblast surfaces, prime, and fill groove with specified elastomeric sealant.

3.06 CONCRETE CURING AND PROTECTION

- A. General:
 - 1. Protect freshly placed concrete from premature drying and excessive cold or hot temperatures in conformance with ACI 301 and ACI 308. After placement and prior to finishing of slabs, contractor shall use evaporation retardants, fogging, windscreens, etc. to prevent plastic shrinkage cracking caused by excessive drying of the top surface. For surfaces floated and broomed, place curing compound immediately where allowed.
 - 2. Start initial curing as soon as free water has disappeared from concrete surface after placing and finishing. Keep continuously moist for not less than 24 hours.
 - 3. Begin final curing procedures immediately following initial curing and before concrete has dried. Continue final curing for at least 7 days in accordance with ACI procedures. Avoid rapid drying at end of final curing period.
- B. Curing Methods: Perform curing of concrete by curing compound, curing and sealing compound, by moist curing, by moisture-retaining cover curing and by combinations thereof, as herein specified.
 - 1. Provide moisture curing by following methods:
 - a. Keep concrete surface continuously wet by covering with water.
 - b. Continuous water-fog spray.
 - c. Cover concrete surface with specified burlap absorptive cover, thoroughly saturating cover with water and keeping continuously wet. Place absorptive cover to provide coverage of concrete surfaces and edges with 4" lap over adjacent absorptive covers.
 - 2. Provide moisture-cover curing as follows: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width sides and

ends lapped at least 3" and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

3. Provide curing compound or curing and sealing compound to slabs as follows:
 - a. Apply curing compound, per manufacturer's specification, to concrete slabs, including construction joints* after form removal as soon as final finishing operations are complete (within two hours). Apply uniformly in continuous operation by power-spray or roller in accordance with manufacturer's directions. Recoat areas subjected to rainfall within three (3) hours after initial application. Maintain continuity of coating and repair damage during curing period. Cover with moisture retaining cover for 48 hours.
 - b. Exterior slabs shall have fugitive dye or pigment. Interior slabs may be clear or with pigment as required by the ENGINEER.
 - c. Apply at dosage rates per Manufacturer's written recommendation.

3.07 TOLERANCES

- A. The construction tolerances for cast-in-place concrete shall meet the requirements of ACI 117 and 347 and the special project tolerance requirements listed below. Where requirements conflict, the more stringent shall govern.
 1. Linear and Vertical Lines (When Forms are Stripped):
 - a. Perimeter slab edges shall be within $\pm 3/8"$ of established lines.
 2. Elevations:
 - a. Top of slab at perimeter edge shall be within $\pm 1/4"$ of established elevations.
 3. Slab Thickness: $-1/4"$ maximum

3.08 DENSE GRADED BASE

- A. Dense Graded Base, required to bring to proper level, are specified in Section 32 11 23.

3.09 CONCRETE CURB AND GUTTER

- A. Concrete work shall meet the requirements of Division 03.
- B. Provide curb and gutter of type and dimensions shown on the drawings, or to match adjacent existing curb and gutter.
- C. Trowel and broom the face surface of curb and gutter. Fill any honeycombed or void areas remaining on the back of curbs with mortar.
- D. Concrete curb and gutter shall be placed in accordance with WisDOT Section 601 to the dimensions and shapes shown in the standard detail drawings. Where curb and gutter details are not provided, curb and gutter shape and dimensions shall match existing adjacent curb and gutter.
- E. Where there is sidewalk behind the curb, sidewalk and top of curb shall be flush.
- F. A minimum 4-inch thick layer of compacted dense graded base shall be provided beneath the full width and a minimum 6 inches behind all curb and gutter. At sections of the curb and gutter to be replaced, the existing base course may be reused provided it conforms to the above requirement and is placed over a stable subgrade. Prior to placement of concrete, the base shall be thoroughly compacted and moistened.
- G. All curved curb and gutter shall form smooth curves and shall not be a series of chords. Radius forms shall be used for all curved curb and gutter where the radius of curvature is 100 feet or less.

- H. Driveway openings in the curb line shall be staked by CONTRACTOR in the field and approved by the ENGINEER or designer. The details for concrete gutter sections through a driveway are shown in the standard detail drawings.
- I. A 3/4-inch thick expansion joint filler shall be provided in accordance with Section 415 of the WisDOT Specifications, through the curb and gutter at:
 - 1. The ends of radii on curved sections including intersection radii.
 - 2. At storm sewer inlets (5 feet away from each side);
 - 3. At a maximum interval of 100 feet.
- J. Expansion joint filler shall extend through the entire thickness of concrete, be perpendicular to the surface and at right angles to the line of the curb and gutter and be left 1/4-inch below the gutter line.
- K. At equally spaced, nominal intervals of not less than 6 feet nor more than 15 feet, with 10 feet typical, a contraction joint shall be tooled to a depth of 1/5 of the total concrete thickness with a 1/4-inch radius jointer. The contraction joint shall be tooled at right angles to the line of the curb and gutter from the top back of curb to the gutter flag.
- L. CONTRACTOR shall provide curb and gutter with the following steel reinforcement:
 - 1. Provide two 20-foot No. 4 rebars centered on each utility crossing with 3-inch bottom clearance. One bar shall be positioned 3-inches from the gutter flag and one bar shall be positioned 3-inches from the back of curb.
 - 2. Provide two 5-foot No.4 rebars centered on each storm sewer inlet casting having a minimum 4 inches of concrete between the casting and the finished pavement. Rebars shall be positioned 2 inches from the gutter flag. One rebar shall be positioned 2 inches from the top gutter surface. The other rebar shall be positioned 4 inches from the top gutter surface.
- M. The location and type of joints in curb and gutter shall match joints in adjacent pavement whenever possible.

3.10 CONCRETE SIDEWALKS, PADS AND DRIVEWAYS

- A. Provide concrete pavement having the thickness and reinforcement as shown on the drawings, or to match adjacent existing pavement.
- B. Concrete shall have a minimum 28-day compressive strength of 4,000 psi with 4% to 7% air entrainment.
- C. Tie bars should be placed as called for on the drawings.
- D. Lubricated smooth epoxy coated dowel bars should be installed as called for on the drawings.
- E. Expansion joints shall be provided where pavement abuts fixed objects, such as buildings and light poles. Control joints shall be in accordance with American Concrete Institute (ACI) recommendations.
- F. Concrete sidewalk and driveway shall be placed in accordance with WisDOT Section 602 to the dimensions and thicknesses shown in the standard detail drawings.
- G. A minimum 6-inch thick layer of compacted dense graded base shall be provided beneath all new sidewalks and driveways, unless otherwise noted in the standard details. Where sidewalks and driveways are to be replaced, existing base material may be reused provided it conforms to the above requirement and is placed over a stable subgrade.
- H. Sidewalks shall slope toward the roadway at 1/4-inch per foot except the transverse slope of sidewalks at a driveway or alley entrance shall match slope of driveway or alley, but shall

not exceed 3/4-inch per foot, unless otherwise noted on the drawings or requested by the engineer.

- I. Concrete sidewalk shall be segmented into 5-foot long rectangular blocks with tooled joints made at right angles to the centerline of the sidewalk (unless noted otherwise on the drawings). Sidewalk intended as a multi-use path shall be segmented with sawcut joints instead of tooled joints. Tooled edges and joints shall be rounded with an edging tool of 1/4-inch radius. Concrete driveways shall be segmented into uniform rectangular blocks with sawcut joints at a maximum spacing of 10 feet in each direction. Joints must extend at least 1.25" for early entry saws or 1/4 of slab thickness if a conventional saw is used.
- J. A 3/4-inch thick expansion joint filler shall be provided in accordance with Section 415 of the WisDOT Specifications, through the sidewalk. Filler shall be placed at:
 - 1. The ends of radii on curved sections including intersection radii.
 - 2. Interfaces of sidewalks and driveways.
 - 3. Interfaces of driveways and curbs.
 - 4. Interfaces of sidewalks and curbs.
 - 5. Interfaces of sidewalks at corners.
 - 6. At box-outs for castings.
 - 7. At 100-foot intervals in sidewalks.
- K. Where an existing curb stop box will lie within a proposed sidewalk or driveway apron, CONTRACTOR shall install a frost-proof collar prior to CONTRACTOR pouring concrete.
- L. The final floating shall be done with a wooden float. Before the concrete is given the final surface finish, the surface of the walk shall be checked with a ten-foot straightedge, and any areas which show a variation or departure from the testing edge of more than 1/4-Inch shall be corrected by adding or removing concrete as necessary while the concrete is still plastic. Before the mortar has set, the surface shall be brushed or lightly broomed. Review finishes and patterns on landscape plans if applicable.
- M. Cure immediately after final finishing.
- N. Replace any existing sidewalks, curbs, drives etc. damaged during the construction process.

END OF SECTION

SECTION 31 00 05

CIVIL GENERAL REQUIREMENTS

PART 1 - GENERAL

1.01 INDEX

02 41 13	Site Demolition
03 30 05	Cast-In-Place Concrete (Outside the Building Footprint)
31 05 00	Common Work Results for Earthwork (Outside the Building Footprint)
31 23 16.13	Trenching
31 23 19	Dewatering
31 25 00	Erosion Control
32 05 00	Common Work Results for Exterior Improvement
32 11 23.33	Dense Graded Base
32 12 16.13	Plant Mix Asphalt Paving
33 05 00	Common Work Results for Utilities
33 40 00	Storm Drainage Utilities

1.02 DESCRIPTION

- A. Work Includes:
 - 1. Furnish all labor materials, tools, equipment, and services for all electrical work as indicated, in accord with provisions of Contract Documents.
 - 2. Completely coordinate with work of all other trades.
 - 3. Although such work is not specifically called out on drawing, the contractor shall furnish and install all miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation.
 - 4. See Division 01 for General Requirements.
- B. Drawings Use and Interpretation:
 - 1. Drawings are diagrammatic and indicate general arrangement of site features, dimensions, utility tags are provided as a courtesy. All lengths and dimensions shall be verified by Contractor in advance of bidding, otherwise, the more expensive option shall be deemed to be included.
 - 2. Field verify locations and arrangement of all existing site features.
 - 3. If any errors or omissions appear in Drawings, Specifications, or other documents, bidding Contractor shall notify the ENGINEER no later than November 23, 2026. Should conflict occur in or between drawings and specifications, bidding contractor is deemed to have estimated more expensive way of doing work, unless he shall have asked for and obtained written decision (addendum) before submission of bid as to which method or materials will be required.
- C. Installation of all systems and materials is subject to clarification as indicated in reviewed shop drawings and field coordination drawings.

1.03 QUALITY ASSURANCE

- A. Perform all work and Install materials and equipment in full accordance with the latest applicable rules, regulations, requirements, and specifications of the following:
- B. State and Federal Laws
- C. Local laws, codes and ordinances
- D. American Society for Testing and Materials (ASTM)
- E. American Water Works Association (AWWA)
- F. Federal Highway Administration (FHA)
- G. Environmental Protection Agency (EPA)
- H. Wisconsin Department of Safety and Professional Services (SPS):
- I. Chapter NR 141 ·Monitoring Well Construction

- J. Chapter NR 812 - Well Construction and Pump Installation
- K. Wisconsin Department of Natural Resources Technical Standards for Construction Site, Erosion & Sediment Control
- L. Conflicts, if any, which may exist between the above items, the more restrictive shall govern.

1.04 SUBMITTALS

- A. General:
 - 1. The A/E's review of shop drawings or samples shall not relieve the Contractor of responsibility for any deviation from the contract documents. The Contractor shall include with the shop drawings an Index sheet detailing all deviations from the contract documents and will be held responsible for all deviations unless he has received written approval from the OWNER and the ENGINEER for the specific deviation, separate from general shop drawing approval. The A/E's and Town of Kewaskum's review shall not relieve the contractor from responsibility for errors or omissions in the shop drawings or samples.
- B. Shop Drawings:
 - 1. As indicated in Divisions 03, 31, 32, and 33.
 - 2. The Contractor shall review the shop drawings and stamp with his approval prior to submitting shop drawings to A/E for review.
 - 3. Shop drawings shall be submitted electronically in one PDF format file. File name shall contain specification number and product name. Each shop drawing shall contain the following:
 - a. Cover Sheet: The submittals shall contain a cover sheet, which shall include the following information.
 - 1) Submittal Date
 - 2) Specification Section(s)
 - 3) Manufacturer's Representative (Contact Name, address, and telephone number)
 - 4) Project Name, Project Town, Project State, and Project Address.
 - 4. Product Data: Manufacturer's product data sheets and description of all system components. These data sheets shall be highlighted or suitably marked, so that included items and options are indicated. On data sheets that include multiple products, the products that are not used shall be crossed out.
- C. Samples:
 - 1. As indicated in Divisions: 03, 31, 32, and 33.
- D. Approval Documents:
 - 1. Prepare and submit all drawings, calculations, and professional seals as required to Federal, State and local authorities having jurisdiction.

1.05 JOB CONDITIONS

- A. Cause as little interference or interruption of existing utilities and services as possible.
 - 1. Schedule work which will cause interference or interruption in advance with Owner, Architect, authorities having jurisdiction and all affected trades.
- B. Examine Contract Documents to determine how other work will affect execution of civil work.
- C. Determine and verify locations of all existing utilities on or near site.
- D. Make arrangements for and pay for necessary permits, licenses, and inspections.
- E. Record drawings:
 - 1. Keep a complete set of all civil drawings in job site office for showing actual locations of utilities and other features encountered, modifications to proposed grades and site features, and other deviations from the original design.

2. Use this set of drawings for no other purpose.
3. Where any locations of utilities and other features encountered, modifications to proposed grades and site features, and other deviations from the original design are installed differently from that shown, indicate differences clearly and neatly using ink or indelible pencil.
4. At project completion, submit record set of drawings

PART 2 - PRODUCTS

2.00 MATERIALS

- A. Acceptable Manufacturers:
 1. Individual items:
 - a. Base: As noted
 - b. Optional: As noted
- B. Use only prime quality, new materials, apparatus and equipment.

PART 3 -EXECUTION

3.00 GENERAL

- A. Use only thorough, highly skilled, and experienced workmen.
 1. Divisions: 31, 32, and 33 grading and utilities shall be installed in a neat and workmanlike manner.
- B. When changes in location of any work are required, obtain approval of the ENGINEER before making change.
 1. Make changes at no extra cost.
- C. Do not change indicated sizes without written approval of the ENGINEER.

3.01 CUTTING AND PATCHING

- A. Perform or pay for all cutting, fitting, repairing, patching and finishing of work of other sections where it is necessary to disturb such work to permit installation of civil elements.
 1. Repair or replace existing or new work disturbed.

3.02 INSTALLATION OF UTILITIES

- A. Install all utilities in accord with manufacturer's recommendations.

3.03 FIELD QUALITY CONTROL

- A. Perform indicated tests to demonstrate workmanship, operation, and performance.
 1. Conduct tests in presence of the ENGINEER or designee and, if required inspectors or agencies having jurisdiction.
 2. Arrange date of tests in advance with the ENGINEER, manufacturer and installer.
 3. Give all inspectors minimum of 24 hour notice.
- B. Repair or replace equipment and systems found inoperative or defective and retest.
 1. If equipment or system fails retest, replace it with products conforming with Contract Documents.
 2. Continue remedial measures and retests until satisfactory results are obtained.
- C. Test equipment and systems as indicated for each item, unless otherwise recommended by manufacturer.

END OF SECTION

SECTION 31 05 00

COMMON WORK RESULTS FOR EARTHWORK

PART 1 - GENERAL

1.01 SCOPE

- A. Work Included: Furnish all labor, equipment and materials to complete all earthwork including:
 - 1. Site clearing, grubbing, stripping, and earth moving.
 - 2. Excavation, filling, backfilling, compaction and grading.
 - 3. Preparation of subgrade for slabs on grade, walks, pavements, roads and parking areas.
 - 4. Proof-rolling of Subgrade.
 - 5. Furnish, apply and rough grade topsoil.
 - 6. Removal of structures at or below grade.
 - 7. Provide and pay for all necessary permits.
 - 8. Shoring, cribbing and bracing to safely support excavations.
 - 9. Contractor shall determine if the site "balances" and include in their bid any Import or export of material including any spoils from utilities.

- B. Work Not Included:
 - 1. Excavating and backfilling inside and outside of building as required for plumbing, heating and electric work installed underground, including tanks, pits, manholes, catch basins and inlets.

- C. Summary of Specification Sections:
 - PART 1 -GENERAL
 - Scope
 - Reference Standards
 - Quality Assurance
 - Quantities
 - PART 2- MATERIALS
 - Fill Materials
 - Topsoil
 - PART 3- EXECUTION
 - General
 - Protection
 - Existing Utilities
 - Site Clearing and Grubbing
 - Site Grading
 - Cut and Fill
 - Excavating
 - Geotextile Fabric
 - Backfill and Fill
 - Compaction
 - Final Grading
 - Gravel Sub-Beds
 - Maintenance
 - Disposal of Excess and Waste Materials
 - Unanticipated Subsurface Conditions

1.02 REFERENCE STANDARDS {LATEST EDITION}

- A. ASTM A444 - Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process for Culverts and Underdrains
- B. ASTM C136- Sieve Analysis of Fine and Coarse Aggregates
- C. ASTM C207 - Hydrated Lime for Masonry Purposes
- D. ASTM D1556- Standard Test Method for Density of Soil in Place by the Sand-Cone Method
- E. ASTM D422 - Particle Size Analysis of Soils
- F. ASTM D423 - Liquid Limit of Soils
- G. ASTM D424 - Plastic Limit and Plasticity Index of Soils
- H. ASTM D698 - Moisture-Density Relations of Soils and Soil-Aggregate. Mixtures using 5.5 lb. Rammer and 12 inch Drop (Standard Proctor Test)
- I. ASTM D1452- Soil Investigation and Sampling by Auger Borings
- J. ASTM D1557- Moisture Density Relations of Soils and Soil-Aggregate Mixtures using a 10 lb. Hammer and 18 inch Drop (Modified Proctor Test)
- K. ASTM D2167 - Density of Soil in Place by the Rubber-Balloon Method
- L. ASTM D2487- Classification of Soils for Engineering Purposes
- M. ASTM D2922- Standard Test Methods for Density of Soil and Soil-Aggregates in Place by Nuclear Methods (Shallow Depth).
- N. Standard Specification for Highway and Structure Construction, State of Wisconsin.

1.03 QUALITY ASSURANCE

- A. Perform earthwork in compliance with local, state and OSHA requirements.
- B. Testing and Inspection Service:
 - 1. Additional copies of testing reports shall be sent to the ENGINEER and designer.
 - 2. Proof-rolling, excavation below subgrade (EBS) and fill operations shall be performed under the observation of the ENGINEER.
 - 3. Approval by the ENGINEER must be given prior to the placing of any concrete or fill material, and whenever the Soil Report or actual conditions encountered indicate loose or variable soil conditions, variable soil coloration, unexpected materials, etc. Do not proceed if unsuitable conditions are encountered. Notify the ENGINEER immediately.
 - 4. Provide Geotextile Fabric Information to the ENGINEER for review.
 - 5. Review and approval by the ENGINEER is required for concrete or clay cut-off walls.
- C. Grading Limits: Confine work to the Construction Limits as Indicated on the drawings. In the absence of such a designation on the drawings, confine work to the minimum area reasonably necessary to undertake the work as determined by the Engineer. All areas disturbed by excavation and grading, plus such additional areas as are disturbed by construction related activities including construction access and storage and installation of materials shall be considered the "Construction Area."

- D. Wherever provisions of the Specification, Drawings, including supplements and addenda, or the requirements of Geotechnical Engineer conflict (e.g. compaction materials, required percent compaction, etc.), the more stringent requirements shall govern unless approved in writing by the Engineer.
- E. Conform to Federal, State and local ordinances with respect to excavations, disposal of waste, burning, air quality, noise, erosion, water runoff, etc.
- F. Record Drawings: Maintain record drawings of all underground utilities, drain tiles, or other structures encountered, and/or earthwork made as part of this project on original drawings prepared by the installing Contractor/ Subcontractor.
- G. Earth Retention System: Contractor is completely responsible for the design and construction of adequate and safe temporary shoring, bracing, retaining structures and excavations. All systems shall be designed for potential sand seams and water, which may cause cave-ins, and/or require additional bracing, casing of bore holes, dewatering, etc.

1.04 QUANTITIES

- A. Elevations provided on the plans are finished elevations including topsoil finished topsoil depth shall be as specified in this section or as shown on the drawings, whichever is greater.
- B. Contractor shall be solely responsible for determining all earthwork quantities based on the existing and proposed elevations provided on the plans. Any geotechnical investigations provided by the Owner apply only to those locations that the data was collected and may not be indicative of conditions elsewhere on the site. The Contractor is responsible for collecting any additional geotechnical or survey data he deems necessary to complete an accurate estimate of earthwork quantities.
- C. Contractor shall be solely responsible for balancing site materials. If on site excavation and borrow operations do not provide enough suitable material for fill areas, Contractor shall coordinate and pay for excavation, transport and placement of imported material meeting the specifications of the contract documents. If excavation results in excess materials, Contractor shall coordinate and remove all excess materials from the site (at no cost to the owner). Prior to Bidding the Contractor to coordinate with the owner to locate on-site locations for excess material. It shall not be assumed that excess materials can remain on site.
- D. If contractor finds the geotechnical information or existing or proposed elevations shown on the plans to be erroneous, he shall notify the Project Manager immediately.

PART 2 - MATERIALS

2.01 FILL MATERIALS

- A. Structural Fill: Well graded, granular material, bank run sand and gravel, or crushed or natural stone, free of shale, clay, friable materials and debris; tested in accordance with ANSI/ASTM C136 within the following limits:
 - 1. Maximum size of aggregate shall be 2" with not more than 80% passing on a 3/4-inch sieve, with not less than 50% by weight passing a No. 4 sieve.
 - 2. Not more than 15% shall pass the No. 200 sieve.
 - 3. When used for bedding under pipes, conduits or culverts, fill shall consist of material with greater than 50% by weight passing a No. 4 sieve and all particles passing a 1-inch sieve. Bedding material shall be selected and placed in accordance with the recommendations of the pipe manufacturers, and in accordance with Chapter 6.43 of *Standard Specifications for Sewer and Water Construction in Wisconsin, Latest Edition*.
 - a. Fill above utilities shall be clay where existing soils are clay.

- b. For all utilities and other excavations, provide anti-seep, concrete collars or cutoff walls, or other suitable means to cut off water where a water source could flow back to building.
 - 4. Structural Fill shall achieve the required soil bearing pressure specified in the Contract Documents and Soil Report.
- B. Fill placed in fabric or geogrid reinforced sub-grade areas in pavement areas shall be granular soil, such as 1-1/4 Inch or 3/4-inch crushed stone aggregate, or other as recommended by the geotechnical engineer. Aggregate should not exceed the maximum recommended by the geotextile manufacturer.
- C. Drainage Fill: Frost resistant, well graded, clean, angular/fractured, crushed stone or gravel (not sand), free of silt, clay, loam, friable or soluble materials, and organic matter; tested in accordance with ANSI/ASTM C136 within the following limits:
 - 1. Not more than 5% shall pass the No. 200 sieve.
 - a. Slab on grade subgrade: ASTM C33, Size 67.
 - b. Building perimeter drain lines shall be surrounded with at least 12 inches of washed aggregate conforming to ASTM C33, Size 67.
 - c. Perimeter drains at retaining walls shall be surrounded with at least 12 inches of washed aggregate conforming to ASTM C33, Size 67.
- D. No. 2 Stone: Angular crushed limestone aggregate having uniform particle size of nominally 2 inches, essentially free of fines.
- E. Common Fill: Approved material from site, excavation or off- site, separated from materials which do not compact by tamping or rolling. Crushed stone, bank run gravel, or coarse sand or general earth material free of particles larger than 6 inches, debris, peal, roots, cinders, wood, trash, organic material or other objectionable material.
- F. No organic, deleterious or frozen or "contaminated" material may be used for backfilling or fill material.
- G. Geotextile Material: Conforming to WISDOT 645 and Soil Report with respect to Grab, Puncture and Burst Strength, Trapezoidal Tear, Permativity, and Apparent Opening Size.
 - 1. Around stone surrounding drain tile and trench drains:
 - a. WISDOT 645.2.4 Type DF, Type A
 - 2. Under slab-on-grade when specified on plans as required:
 - a. WISDOT 645.2.2 Type SAS
 - 3. Soil stabilization and subgrade reinforcement above poor soils
 - a. WISDOT 645.2.3 Type MS

2.02 TOPSOIL

- A. Existing topsoil on site will be stripped and stored by this Contractor.
 - 1. Topsoil remaining after all work is completed shall be disposed of by Contractor at no cost to Owner.
- B. Topsoil to be Furnished: If quantity of stored topsoil is inadequate or if none has been salvaged from site, this Contractor shall furnish sufficient topsoil to properly construct lawns. Topsoil furnished shall be a natural, fertile, friable soil, possessing characteristics of representative productive soils in the vicinity. It shall be obtained from naturally, well-drained areas. It shall not be excessively acid or alkaline or contain toxic substances which may be harmful to plant growth. Topsoil shall be without admixtures of stones, stumps, roots, debris or other objects 1" or more in diameter which might be a hindrance to planting operations. Topsoil shall be placed to a minimum depth of 6" after compaction.

PART 3 - EXECUTION

3.01 GENERAL

- A. Contractor is to establish all heights and grades to properly execute work from benchmark established by others (from original survey work). It is strongly recommended that the original surveyor be contacted and used for all construction layout as well as as-built surveys in an effort to avoid conflict between datums and horizontal control points used. Prior to construction layout, existing and proposed finished floor elevations shall be checked with respect to current site benchmarks to ensure elevations correspond with layout elevations.
- B. Contractor shall provide all construction layout surveys to accurately locate the construction on the site.
- C. Prior to start of work, Contractor shall be completely familiar with all conditions at the site, and shall account for conditions that may affect the work including: imitations on work access, space limitations, overhead obstructions, traffic patterns, local requirements, adjacent activities, etc. Failure to consider these requirements shall not be cause for claim of job extras.
- D. Inspect areas and conditions prior to clearing, excavating, filling, and grading. Do not proceed until unsatisfactory conditions have been corrected.
- E. Permits and Fees:
 - 1. Apply for, pay for and secure all permits required in connection with the work under this section from the governmental authorities having jurisdiction.
 - 2. Pay all highway and dumping fees and repair damage to sidewalks, streets, or other public property, or to any public utilities.
 - 3. The ENGINEER will apply for the NOI/WRAPP permit (if required).

3.02 PROTECTION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout and other hazards created by earthwork and dewatering operations. Protect and maintain all lawns, beds, shrubs, trees, and other work that is to remain in place.
 - 1. Should damage occur as a result of work performed under this Contract, restore to existing condition at no additional cost to Owner, in a manner acceptable to the Engineer.
 - 2. Repair or replace trees and vegetation indicated to remain which are damaged by construction operations, in manner acceptable to the Engineer
- B. Conduct site clearing operations to ensure minimum interference with roads, streets, walks and other adjacent occupied or used facilities. Do not close or obstruct roads or other occupied or used facilities without permission from Owner and authorities having jurisdiction.
- C. Carefully remove items indicated to be salvaged, and store on Owner's premises where indicated or directed.
- D. Provide and maintain temporary fences, planking, lights, warning signs, barricades and guards necessary for protection of premises and public.
- E. Maintain cut at satisfactory slope which will prevent collapse of embankments. Provide bracing and shoring as required to protect existing improvements, including outside contract limits, new construction or excavations. Contractor is solely responsible for

strength and adequacy of bracing or shoring and for safety. Conform to OSHA requirements. Restore any damaged improvements to their original condition.

- F. Do not load vehicles hauling debris excessively as to cause spillage on to streets and roadways. Do not allow spilled materials to clog drainage of streets.
- G. Keep sidewalks and streets adjoining the property broom clean and free of debris, excavated materials, rubbish, trash and obstructions, which might affect the safety of streets, walks, utilities and property. Broom clean daily.
- H. Use all means necessary to control dust on and near the work, if such dust is caused by the Contractor's operations during performance of the work, or if resulting from the condition in which the Contractor leaves the site.
- I. Provide positive protection (mat/sheet coverings) for all excavation slopes to protect slopes from instability and deterioration due to rain, wind or snow/ice.
- J. Construct, maintain and protect erosion and sedimentation controls.

3.03 EXISTING UTILITIES

- A. The Contract Drawings show such Information as can reasonably be obtained regarding the location and nature of pipe lines, storm sewers, water lines, natural gas lines, underground cables, etc. However, the accuracy or completeness of such information is not guaranteed. It shall be Contractor's responsibility to locate such underground features sufficiently in advance of operations to preclude damage to same.
- B. Locate existing underground utilities in the areas of work. If utilities are to remain in place, provide adequate means of support and protection during earthwork operations.
- C. Should uncharted or Incorrectly charted, piping or other utilities be encountered during excavation, consult the Engineer and appropriate utility company immediately for directions. Cooperate with Owner and utility companies for keeping respective services and facilities in operation. Repair damaged utilities to satisfaction of utility company. The cost of repair of uncharted or Incorrectly charted utilities will be paid on the basis of Changes In the work defined in the Conditions of the Contract.
- D. Do not interrupt existing utilities serving facilities occupied and used by Owner or others except when permitted in writing by the ENGINEER and then only after acceptable temporary utility services have been provided. Provide minimum of 3 business days' notice to the ENGINEER and receive written notice to proceed before Interrupting any utility.
- E. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies for shut-off of service if lines are active.

3.04 SITE CLEARING AND GRUBBING

- A. Clear area within contract limits of trees, stumps, brush, shrubs, vegetation, rubbish, and other perishable or objectionable matter (as indicated on the demolition and landscaping plan).
 - 1. Remove all cleared material from site.
 - 2. An effort has been made to show the majority of existing trees on-site on the plans, however, Contractor to visually verify removal limits prior to bidding.
 - 3. Existing bituminous and concrete paving, roads, walks, and curbs shown in areas of proposed improvements or reused grades, shall be removed by this Contractor to a depth of at least 10" below the paved surface.
 - 4. Completely remove stumps, roots, and other debris protruding through ground surface. Use only hand methods for grubbing inside drip line of trees indicated to remain.

5. Remove existing above-grade and below-grade improvements, unsuitable fill, cinders, concrete, old foundations and any other unsuitable material as Indicated on Drawings, soil report or interfering with new construction.
6. Burying or burning of materials on the site is not permitted.
7. Trim limbs and branches of trees to be left in place which overhang roadbeds or structure to provide proper clearance.

3.05 SITE GRADING

- A. Topsoil:
 1. Strip all topsoil to the full depth of all organic material.
 2. Remove heavy growths of grass from areas before stripping.
 3. Where existing trees are indicated to remain, leave existing topsoil in place within drip lines to prevent damage to root system.
 4. Stockpile topsoil on site in storage piles (location to be agreed to by Owner) in areas indicated or directed. Construct storage piles to provide free drainage on site of surface water. Stabilize top soil pile.
 5. Dispose of unsuitable or excess topsoil same as specified for disposal of waste material.
- B. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.
- C. Preparation of subgrades after stripping vegetation, organic or other unsuitable materials shall consist of:
 1. Proof-rolling under the observation of an experienced Geotechnical Engineer or Technician to detect soft, wet, yielding soils or other unstable materials. Proof rolling shall consist of rolling the subgrade with a heavily loaded rubber-tired vehicle such as a loaded scraper or tandem axle dump truck. Any areas requiring EBS shall be measured, marked in the field and documented by the geotechnical engineer. The contractor will be paid only for approved and documented EBS areas in accordance with the required unit price and allowance as outlined on the bid form.
 - a. Should EBS be required, excavate as outlined below only after contract extra has been approved.
 - 1) Excavate soft or unsuitable areas of subgrade 12 inches or as directed by the Engineer. Backfill with granular soil in maximum 12-inch loose lifts, and compact to the minimum required degree of compaction as specified In Compaction Section.
 - 2) Remove the top 18" of the subgrade where expansive clays (Liquid Limit greater than 50) are encountered. Replace with granular structural fill.
 - 3) Remove, as directed by the Engineer, underlying bearing soils that are disturbed by construction, weather or earthwork activities, and replace with structural, engineered fill.
 - 4) In pavement areas, backfill with 3" stone placed in 12-inch lifts and compacted until no further vertical and lateral movement is observed.
 - 5) Provide Geotextile Fabric before backfilling, if soft soils exist at bottom of excavation.
 2. Scarify top 6 to 8 inches.
 3. Moisture condition soils as required.
 4. Re-compaction to same minimum in-situ density required for similar materials.
 5. Stone Base course shall be proof-rolled prior to placing pavement section as well.
- D. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Architect, without additional compensation.
- E. All subgrades shall consist of and be:

1. Underlain by suitable bearing material.
2. Free of all organic, frozen or other deleterious material.
3. Observed, tested and approved by the ENGINEER or designee.

3.06 CUT AND FILL

- A. Provide all necessary cutting and filling required to change existing grade specified or as shown on drawings.
 1. Note: A vibratory smooth drum roller should not be used on clay soils.
 2. In areas under proposed pavement, consult with geotechnical engineer and report for construction methods.
 3. Rough grade all seeded areas to 6" below finish grade elevation. Where topsoil of sufficient depth is encountered, grade shall be brought to final established grade. Minimum depth of topsoil shall be 6".
 4. All roads, drives, and parking areas etc. shall be rough graded to 15" below finish grade, or as required to install subgrade and finish pavement.
- B. Fill in excess of 12" shall be constructed in 8" layers and shall be rolled with rubber-tired equipment or sheepsfoot rollers, or compacted with vibratory equipment, whichever is best suited for soil being compacted.
 1. Fill under paved areas shall be compacted to 95 percent Modified Proctor, as per ASTM D 1557.
- C. Where there is a great change in grade, a maximum slope of three to one (3:1) shall be maintained. Reference Section 31 25 00 – Erosion Control for specific requirements.
- D. Do no grading until sewers, water mains and other utilities are installed. After backfill has settled and when directed, fill shallow places to bring to proper grade.
- E. Excess excavated material from trenches and other excavations will be piled on site if to be reused, or removed from site by respective Contractors. Deposition and spreading shall be done by this Contractor. Fine grading will be by landscape contractor.
 1. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
 2. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

3.07 EXCAVATING

- A. Excavate and remove whatever materials encountered, including existing pavements, abandoned building foundation walls, footings and slabs, and unsuitable fill as required to place within finish elevations shown, all footings, walls, trenches, pits, ground floor slabs, drain tiles inside and around basement to complete the project.
 1. Remove rock to lines and grades indicated, to permit installation of permanent construction without exceeding the following dimensions:
 - a. 12 inches outside of concrete forms at footings.
 - b. 6 inches outside of minimum required dimensions of concrete cast against grade.
 - c. 6 inches beneath bottom of concrete slabs on grade.
- B. Maintain pit or pits to which all excavated parts shall be drained. Provide, operate and maintain suction and discharge lines, pumps and other equipment necessary to drain and keep all excavations, trenches and entire subgrade area free of water under any and all circumstances which may arise.
 1. Notify the ENGINEER if springs or water seepage is encountered during grading for possible construction procedure revisions or inclusion of subgrade drainage system.
- C. Excavated earth shall remain on site, if possible, and placed where directed,

1. After final grading work is complete, remove any excess earth from premises. Where site constraints dictate, excavated earth shall be stored off-site or landfilled.
 2. All surplus earth shall be removed from premises.
- D. Additional Excavation:
1. When excavation has reached required subgrade elevation, notify the ENGINEER for inspection of conditions.
- E. Unauthorized Excavation: Consists of removal of materials beyond indicated subgrade elevations, limits or dimension without specific direction of the ENGINEER. Unauthorized excavation, as well as remedial work directed by the ENGINEER, shall be at Contractor's expense.
- F. Frost Protection: All open footings, trenches and exposed floor slab areas must be protected against frost impregnation.
- G. Stability of Excavations:
1. Slope sides or excavations to comply with governing codes and ordinances, including OSHA Subpart P of 29 CFR 1926, or successor regulations. Shore and brace where sloping is not possible because of space restrictions or stability of material excavated.
 - a. Unless required otherwise by code or unless authorized by Geotechnical Engineer, slopes for excavations 20 feet deep or less should not exceed 1:1 for soil Types A and Band 1-1/2 (horizontal):1 (vertical) for soil, Type C.
 - b. Maintain side and slopes of excavations in a safe condition until completion of backfilling.
- H. Do not place excavated materials where they will inconvenience the public, impede travel, or impede surface drainage unless such drainage is being safely rerouted away from the excavation without causing other damage. Do not place excavated materials close to a trench or excavation, unless shoring of adequate strength is provided to support the additional loads that are imposed.
- I. Tunnel under, or remove and replace, sidewalk and curb in areas of excavation to the nearest joint. Remove all pavements, including curbs and gutters, to neat and straight lines to the limits of removal by a two-step method. Limit the initial removal to the immediate area of the proposed work. Full depth saw cutting is not required for this phase of the removal. After the work is completed, and immediately prior to the pavement replacement, make a full depth sawcut to neat and straight lines outside the widest point of excavation. Make the lines of sawcut parallel to existing joints, or parallel or perpendicular to pavement edges so as to form a neat patch. Carefully remove all remaining pavement within the sawcut area to the lines of the sawcut. Do not disturb existing base materials between the area disturbed by the work and the sawcut line during the saw cutting, pavement removal, or pavement replacement processes.
- J. If field tile are encountered during the excavation, the Contractor shall make provisions for continuing the drainage on an interim basis and immediately notify the ENGINEER. Field tiles shall be re-routed wherever possible.

3.08 GEOTEXTILE FABRIC

- A. Install in accordance with WISDOT 645, Soil Report and Manufacturer's Specification and Requirements with a minimum overlap of two (2) feet
1. Provide around drain tile, wherever shown on drawings and/or recommended/specified in the Soil Report.
 2. Where piping vertically intersects the Geotextile Fabric, run fabric up pipe and tape prior to backfilling.
 3. Where horizontal piping is installed after and below the Geotextile,

- a. Cut the Geotextile in a line centered on the pipe excavation and fold back
 - b. After pipe installation, backfill to the bottom of the Geotextile, fold the fabric back, and tape the joint.
 - c. Tape a 4-foot wide strip of Geotextile, centered over the cut joint.
- B. The ENGINEER shall review and approve installation.

3.09 BACKFILL AND FILL

- A. General: Place acceptable tested and approved soil material in layers to required subgrade elevations, for each area classification listed below.
 - 1. Structural/Engineered Fill:
 - a. Use as fill or backfill in excavations against walls (except as noted in Item 2), under walks, steps and pavements and under interior building slabs, except as noted in Item 3 below.
 - 2. Drainage Fill:
 - a. Use around all drain tile, piping, etc. prior to backfilling with structural fill.
 - 3. Common Fill: Use under unpaved areas.
- B. Prior to Backfill Placement: Backfill excavations as promptly as work permits but not until completion of the following:
 - 1. Acceptance by the ENGINEER or designee of construction below finish grade.
 - 2. Inspection, testing and approval of underground utilities and systems.
 - 3. Removal of shoring and bracing and backfilling of voids with satisfactory materials. Cut off temporary sheet piling driven below bottom of structures and remove in manner to prevent settlement of the structure or utilities or leave in place if required.
 - 4. Surveying locations of underground utilities for Record Documents.
 - 5. Removal of mud, water, caved-in, softened or disturbed soil, or frozen soil as directed by the ENGINEER or designee.
 - 6. Removal of trash and debris.
 - 7. When existing ground surface has a density less than that specified under "Compaction" for the particular area classification, break up the ground surface, pulverize, moisture-condition to the optimum moisture content, and compact to required percentage of maximum density.
- C. Placement and Compaction:
 - 1. Place backfill and fill materials in layers not more than 8" in loose depth for material compacted by heavy compaction equipment, and not more than 4" in loose depth for material compacted by hand-operated tampers. Equipment shall be compatible with type of soil to be compacted.
 - 2. Place backfill and fill materials evenly adjacent to structures, to required elevations. Take care to prevent wedging action of backfill against structures by carrying the material uniformly around structure to approximately same elevation in each lift. Lifts should be placed horizontally and in uniform thicknesses.
 - 3. Extend fill a lateral distance of at least 1 foot for each foot of new fill required, with a minimum of six feet (6') beyond the edge of buildings and foundations. Against walls, free-draining granular structural backfill should extend a lateral distance of at least 4 feet from the outside face of the wall.
 - 4. Notify, coordinate and cooperate with the ENGINEER regarding placement of fill. Each layer must be approved before the next layer is started.

3.10 COMPACTION

- A. It is the responsibility of the Contractor to provide all necessary compaction equipment and other grading equipment that may be required to obtain the specified compaction. Compaction of controlled backfill by travel of grading equipment will not be considered adequate for uniform compaction. Hand guided vibratory or tamping compactors will be

required whenever controlled backfill may be placed adjacent to walls, footings, columns or in confined areas.

B. Moisture Control:

1. Where subgrade or layer of soil material must be moisture conditioned before compaction, uniformly apply water to surface of subgrade, or layer of soil material. Scarify or disk as required to distribute water uniformly through soil. Apply water in manner to prevent free water appearing on surface during or subsequent to compaction operations. The moisture content of the soil should be within -1.0% to +2.5% for cohesive soils, -3% to +3% for cohesionless soils, of the optimum moisture content as determined by ANSI/ASTM D1557.
2. Remove and replace or scarify by repeatedly plowing and discing during favorable weather conditions to air dry, soil material that is too wet to permit compaction to specified density.
3. Soil material that has been removed because it is too wet to permit compaction may be stockpiled or spread and allowed to dry. Assist drying by discing, harrowing or pulverizing until moisture content is reduced to a satisfactory value.
4. Clay soil bearing capacity and compaction levels are highly affected by water and construction activities.
 - a. Clay soils may require continued moisture control, modification with Portland Cement or hydrated lime, and/or per Maintenance Section of this specification until drainage subgrade and slab on grade are installed.

3.11 FINAL GRADING

- A.** General: Uniformly grade area within limits of grading under this section, including adjacent transition areas. Smooth finished surfaces, compact with uniform levels or slopes between points where elevations are shown, or between such points and existing grades. If fill is to be placed and compacted at the edge of a slope steeper than 4H:1V, overfill a minimum of 2 feet laterally beyond the final grade and trim back to design slope after achieving required degree of compaction.
- B.** Grading Outside Building Lines: Grade areas adjacent to building lines to drain away from structures and to prevent ponding. Finish surfaces free from irregular surface changes.
1. All contours and/or spot elevations shown on Drawings are to finish grade, unless otherwise noted (i.e. top of pavement, topsoil, etc.). Contractor shall be responsible for making excavations or embankments to the subgrade elevations necessary such that the addition of the pavement, topsoil or whatever surface improvement, will ensure that finished grades are met.
 2. Contours indicated on drawings are the finished grade elevations. Review all grade elevations before commencing work to ensure that proper slopes for drainage, slopes for drives, walks, paving, etc., are maintained. If Contractor believes a deficiency is apparent, he shall notify the Architect for clarification and correction.
 3. Pavements:
 - a. Shape the surface of the areas under pavement to line, grade and cross-section, compacted as specified, and graded to prevent ponding of water after rains. Rough grade tolerance shall conform to +0 in./-1 1/2 in. Fine grading tolerance shall conform to +0 in./-3/4 in.
 - b. Include such operations as plowing, discing¹ and any moisture or aerating required to provide the optimum moisture content for compaction.
 - c. Fill low areas resulting from removal of unsatisfactory soil material, obstructions, and other deleterious materials, using structural fill material. Shape to line, grade, and cross-section as shown.
 4. Ditches: Finish ditches to ensure proper flow and drainage. Conduct final rolling operations to produce a hard, uniform and smooth cross-section.
- C.** Grading Surface of Fill Under Slabs: Grade smooth and even, free of voids, compacted as specified, and to required elevation. Provide final grades within a tolerance of +0 in./-3/4 in.

- D. Compaction: After grading, compact subgrade surfaces to the percentage of maximum density for each area classification.
- E. Preparation for Lawn Construction: Preparation of Subgrade: Grade and uniformly compact subgrade so that it will be parallel to proposed finished grade. Loosen subgrade materials and mix to a depth of 8 inches. Remove all stones over 1" in size and remove all sticks and rubbish. Do not move heavy objects, except lawn rollers, over lawn areas after the subgrade soil has been prepared unless subgrade soil is again graded and loosened, as specified above, before topsoil is spread.

3.12 MAINTENANCE

- A. Protection of Graded Areas:
 - 1. Protect newly graded areas from traffic and erosion. Keep free of trash and debris.
 - 2. Repair and re-establish grades in settled, eroded, and rutted areas to specified tolerances.
- B. Reconditioning Compacted Areas: Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, re-shape and compact to required density prior to further construction.
- C. Settling: Where settling is measurable or observable at excavated areas during general project warranty period, remove surface (pavement, lawn or other finish); add backfill material, compact, and replace surface treatment. Restore appearance, quality, and condition of surface or finish to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.13 DISPOSAL OF EXCESS AND WASTE MATERIALS

- A. Removal from Owner's Property:
 - 1. Remove excess and waste materials, including excavated material, excess topsoil, trash and debris, and dispose of it off Owners property.

3.14 UNANTICIPATED SUBSURFACE CONDITIONS

- A. If Contractor encounters conditions that are different during earthwork, paving and foundation construction operations than those anticipated, this fact shall immediately (within 24 hours) be brought to Owner's attention. If Owner's representative on the construction site observes subsurface conditions which are different than those anticipated by the Soil Report, this fact shall immediately (within 24 hours) be brought to Contractor's attention. Once unanticipated conditions have been Identified, and Consultant has concurred, immediate negotiations will be undertaken between Owner and Contractor to arrive at a change in contract price for additional work or reduction in work because of the unanticipated conditions. Contractor agrees that unit prices as stated in the Bid Form shall apply for additional or reduced work under the Contract.

END OF SECTION

SECTION 31 23 16

TRENCHING

PART 1 - GENERAL

1.01 SCOPE

- A. The work under this section shall consist of providing all work, materials, labor, equipment, and supervision necessary to complete trenching for utilities and other work, as required in these specifications, on the drawings and as otherwise deemed necessary to complete the work. Included are the following topics:

PART 1 -GENERAL

1. Scope
2. Related Work
3. Submittals
4. Record Drawings
5. Permits/Fees
6. Survey and Staking

PART 2- Materials

7. Crushed Stone Bedding
8. Crushed Stone Screenings
9. Bedding Sand

PART 3 - Execution

10. Preparation
11. Connections to Existing Utilities
12. Dewatering
13. Excavation
14. Bedding/Initial Cover
15. Backfill and Compaction
16. Restoration

1.02 RELATED WORK

- A. Applicable provisions of Division 01 shall govern all work under this section.

31 05 00	COMMON WORK RESULTS FOR EARTHWORK
31 25 00	EROSION CONTROL
33 05 00	COMMON WORK RESULTS FOR UTILITIES
33 40 00	STORM DRAINAGE UTILITIES

1.03 SUBMITTALS

- A. Provide copies of record drawings.

1.04 RECORD DRAWINGS

- A. Refer to Section GR - General Requirements.
- B. Maintain record drawings that show the actual locations, sizes and types of utilities and other features encountered

1.05 PERMIT/FEES

- A. Contractor shall be solely responsible for obtaining all permits necessary to complete trenching work. The Contractor shall pay all fees associated with obtaining permits. These include but are not limited to permits to work within right-of-way, utility connection permits, plumbing permits, electrical permits and other building permits.

1.06 SURVEY AND STAKING

- A. Owner will provide benchmarks and control points for the project.
- B. Contractor shall be responsible for transferring benchmarks, control points, lines and grades as necessary to construct the proposed improvements.

PART 2 - MATERIALS

1.01 CRUSHED STONE BEDDING

- A. Clean material meeting the requirements of %" Crushed Stone Chips" as defined In Section 6.43.2(a)2, regardless of pipe size, of Standard Specifications for Sewer and Water Construction.

1.02 CRUSHED STONE SCREENINGS

- A. Crushed stone free of organic material, concrete, asphalt and other debris. Material shall meet the requirements of "Crushed Stone Screenings" as defined in Section 6.43.2(b) of Standard Specifications for Sewer and Water Construction.

1.03 BEDDING SAND

- A. Sand meeting the requirements of "Bedding Sand" as defined in Section 8.43.2(c) of Standard Specifications for Sewer and Water Construction.

PART 3 - EXECUTION

1.04 PREPARATION

- A. Review plans and prepare work plan and schedule. Coordinate any necessary interruptions in utility service with Construction Representative, in accordance with other specification sections.
- B. Layout work. Establish and transfer line and grade as necessary to complete the work.
- C. Remove topsoil from work area. Saw cut and remove pavement from the work area.

1.05 CONNECTIONS TO EXISTING UTILITIES

- A. Connect to existing utilities in accordance with the requirements of other pertinent specification sections.

1.06 DEWATERING

- A. Dewatering shall be completed in accordance with Section 31 20 00- Earthmoving and Section 31 23 19- Dewatering.

1.07 EXCAVATION

- A. Excavate to elevations and dimensions necessary to complete construction. Excavations shall be sufficiently deep to provide for bedding beneath pipes and structures.
- B. For pipes less than 12" in diameter, maximum trench width at the top of the pipe shall be 3'. For pipes equal to or greater than 12" in diameter, the maximum trench width at the top of the pipe shall be no greater than the outside diameter of the pipe plus 2'.
- C. The trench width at the ground surface shall be minimized to the extent possible through the use of trench boxes shields, or shoring.

- D. The trench width at the ground surface shall not exceed the width of the trench at the top of the pipe by more than 2' without prior approval by the Construction Representative.
- E. Provide a minimum clearance of 6" from outside of pipe to the closest of either the sidewall of trench or inside wall of trench box, shield or shoring.
- F. Notify the ENGINEER if trench subgrade consists of unstable soil, organic material, debris or other undesirable material.
- G. Segregate the various materials excavated. Reserve material meeting the requirements of backfill for the location. Excavated material that does not meet the requirements of backfill and excess excavated material, shall be removed from the site and disposed by the contractor, unless directed otherwise by other specification sections or the Construction Representative.
- H. Locate bedding, backfill and spoil piles in accordance with OSHA requirements, and so that it does not interfere with public travel, adjacent landowners or other construction activities.
- I. Trench excavation shall be limited to that which can be excavated and backfilled within the same workday.
- J. The same trench may obstruct no more than one street crossing at one time.

1.08 BEDDING/INITIAL COVER

- A. Bed pipes and place Initial cover material in accordance with detail drawings and the requirements of specifications for the utility and pipe type being installed.
- B. Establish excavation subgrade in accordance with proposed utility lines and grades, allowing for required amount of bedding material.
- C. Excavation shall be reasonably free of water prior to placement of bedding material.
- D. Place bedding material to required depth, and compact to 95% Modified Proctor dry density.
- E. Shape bedding material to conform to bell of pipe, fittings and structures.
- F. After placing pipe, support during placement and compaction of Initial cover material. Place cover material in lifts having a maximum thickness of 6". Compact initial cover material to 95% Modified Proctor dry density.
- G. Compaction of initial cover material for pipe and fittings shall be accomplished using hand tools and vibratory plate or tamping type walk behind compactors.

1.09 BACKFILL AND COMPACTION

- A. Once initial cover material is placed and compacted, backfill trenches using native materials free of deleterious material.
- B. Backfill trenches to elevations shown on the plans; allow for placement of base course, pavements, and topsoil as required by the plans and other Contract Documents. Where final restoration will be delayed, backfill the trench to existing grade to provide a safe, free-draining surface.
- C. Do not place material on frozen surfaces or use frozen material.

- D. Flooding or jetting of backfill material for compaction purposes is not allowed.

1.10 RESTORATION

- A. Restore trenches to proposed grades and surfaces as soon as practicable after backfilling.
- B. Remove excess bedding, backfill and spoil material from the site as soon as possible after backfilling is complete, but no later than 1 calendar dates after backfilling is complete.
- C. Thoroughly clean all drainage ways, roads, parking lots sidewalks and paved surfaces and remove and dispose all debris and mud.

END OF SECTION

SECTION 31 23 19

DEWATERING

PART 1 - GENERAL

1.01 SCOPE

- A. The work under this section shall consist of providing all work, materials, labor, equipment, and supervision necessary to provide for dewatering as required in these specifications, on the drawings and as otherwise deemed necessary to complete the work. Included are the following topics:

PART 1 -GENERAL

Scope
Related Work
References
Submittals
Quality Assurance
Permits/Fees
Safety
Erosion and Sedimentation Control
Environmental Contaminants
Noise Pollution

PART 2- MATERIALS

General

PART 3- EXECUTION

General
Sump Dewatering
Well Installation
Operation
Removal/Abandonment

1.02 RELATED WORK

- A. Applicable provisions of the General Conditions and Division 01 shall govern all work under this section.

31 05 00 COMMON WORK RESULTS FOR EARTHWORK
31 25 00 EROSION CONTROL

1.03 REFERENCES

- A. Wisconsin Department of Safety and Professional Services (SPS):
1. Chapter NR 141-Monitoring Well Construction
2. Chapter NR 812- Well Construction and Pump Installation.
- B. Wisconsin Department of Natural Resources Technical Standards for Construction Site Erosion & Sediment Control (Technical Standards):
1. https://dnr.wisconsin.gov/topic/Stormwater/standards/const_standards.html

1.04 SUBMITTALS

- A. When deep wells or well point systems are utilized, provide system design computations for the removal of groundwater and design information for sediment removal practices.
- B. For sump dewatering in trenches of excavations, provide copies of sediment removal practice selection discharge design calculations of information.

- C. When permits are required for dewatering, provide copies of all permits.
- D. Provide copies of daily monitoring and testing logs for dewatering practices as described in the DNR Dewatering Technical Standard.
- E. Provide copies of all borehole abandonment forms.

1.05 QUALITY ASSURANCE

- A. Provide and submit a quality assurance program for maintaining erosion control and sediment control practices. As work progresses through phases of the contract, submit copies of the updated quality assurance program for erosion control and sediment removal processes.

1.06 PERMITS/FEES

- A. Pay for and obtain all permits/approval required by local, state and federal regulations.
- B. Necessary permits/approval may include but are not limited to high capacity well approval under NR 812.09 and erosion control permits.
- C. When installing by jetting methods, provide own water source, do not use hydrants as water source without permission from Town of Kewaskum Water Utility, as applicable. Obtain and pay for any required hydrant use and permits.

1.07 SAFETY

- A. Prevent public access to hazardous dewatering system components. Abandon boreholes in accordance with applicable local, state and federal codes immediately following use.

1.08 EROSION CONTROL

- A. Comply with the requirements of the specification sections listed under related work in part 1 of this section.
- B. Selection, installation, operation, and maintenance of erosion control and sediment removal measures related to a dewatering system shall be done in accordance with the DNR Dewatering Technical Standard or equivalent approved by the WDNR.
- C. Upon installation of the dewatering system, immediately remove any mud, sediment or drilling fluid generated by jetting or rotary drilling operations.
- D. When overland discharge of water is necessary, dissipate energy of water stream using nozzles, deflectors, riprap or other methods.
- E. Inspect dewatering system daily for signs of erosion and eliminate cause of erosion.

1.09 ENVIRONMENTAL CONTAMINANTS

- A. Remove all dewatering system components immediately following use.
- B. Clean receiving storm sewer system of any sediment or debris deposits resulting from dewatering system operation.

END OF SECTION

SECTION 31 25 00
EROSION CONTROL

PART 1 - GENERAL

1.01 SCOPE

- A. The work under this section consists of providing all work, materials, labor, equipment, and supervision necessary to provide and construct erosion control measures necessary to protect property and the environment. Included are the following topics:

PART 1 -GENERAL

Scope
Related Work
Permits
Submittals
Erosion Control Plan

PART 2- MATERIALS

General
Sediment Log
Silt Fence Erosion Mat Staples
Tracking Pad Stone
Soil Stabilizers
Soil Tackifiers

PART 3- EXECUTION

General
Grading and Earthwork
Drainage
Tracking Control
Maintenance

1.02 RELATED WORK

- A. Applicable provisions of Division 01 govern work under this Section.
- | | |
|--------------------|-----------------------------------|
| Section 31 05 00 | Common Work Results for Earthwork |
| Section 31 2316.13 | Trenching |
| Section 31 23 19 | Dewatering |
- B. Provide erosion control in accordance with the following references:
1. Wisconsin Department of Natural Resources Technical Standards For Construction Site Erosion and Sediment Control:
https://dnr.wisconsin.gov/topic/Stormwater/standards/const_standards.html
 2. Erosion Control Product Acceptability List ("PAL"), current version as published by the WisDOT: <https://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrcs/tools/pal/default.aspx>
- C. Method of measurement and basis of payment sections in any referenced erosion control documents shall not apply to this contract.
- D. These documents are available from:
State of Wisconsin Document Sales and Distribution
202 South Thornton Avenue
P.O. Box 7840
Madison, WI 53707 (608) 266-3358

1.03 PERMITS

- A. Contractor shall be responsible for obtaining and maintaining all erosion control permits associated with the project.

1.04 SUBMITTALS

- A. The Contractor will submit the following to the ENGINEER:
 - 1. Construction Site Erosion Control Plan, if required.
 - 2. Contractor shall mark-up of the Erosion Control Plan that is included in these documents showing additional or alternate erosion control measures as needed due to the Contractor's means and methods throughout all phases of construction. The Contractor may also be required to submit calculations and backup information showing the proposed measures meet applicable regulations.
 - 3. Submittals for materials used to implement the erosion control plan.
- B. Submit shop drawings for the following erosion control features as indicated in Section 31 00 05 Civil General Requirements:
 - 1. Silt Fence
 - 2. Inlet Sediment Guards
 - 3. Erosion Mat

1.05 EROSION CONTROL PLAN

- A. The ENGINEER has prepared an erosion control plan for the project and will apply for the NOI/WRAPP permit (if required). The Contractor shall provide the ENGINEER notice of the intended project start date at least 21 business days in advance to allow ENGINEER time to prepare and acquire the permit. It is the Contractor's responsibility to ensure all required permits are in place prior to starting construction. The Contractor will provide the consulting engineer and the ENGINEER with submittals for materials used to implement the erosion control plan, as well as any modifications to the erosion control plan that are necessary due to the Contractor's means and methods of construction.
- B. Contractor shall comply with all the requirements of the erosion control plan, and if applicable, the Wisconsin Pollutant Discharge Elimination System, WPDES. If applicable, the project specific WPDES Construction Site Stormwater Discharge Permit for Erosion Control shall supersede the General Permit.
- C. Erosion control and storm water management practices shall be installed and maintained in accordance with the WDNR approved Technical Standards (or equivalent).
- D. Contractor shall provide all erosion control practices necessary to protect property and the environment. Erosion control and storm water management practices shall be installed and maintained in accordance with WDNR approved Technical Standards (or equivalent). The Contractor shall prepare an erosion control plan in accordance with Chapters NR 151, NR 216, and Wisconsin Department of Safety and Professional Services SPS 360; submit this plan to plan to the ENGINEER. The Contractor shall update and modify the erosion control plan as needed for phasing of work. A copy of the current erosion control plan shall be maintained at the project site.

PART 2 - MATERIALS

2.01 GENERAL

- A. Erosion mats, soil stabilizers, and tackifiers shall be listed on the Product Acceptability List for Multi-Modal Applications ("PAL") as published by the Wisconsin Department of Transportation.
- B. When the design or contract includes permanent erosion control or stormwater control features, the contractor may employ these items in his control of erosion and stormwater during his construction activities. However, these items shall be fully cleaned, restored,

and in every way fully functioning for its intended permanent use prior to acceptance of the work.

2.02 SEDIMENT LOG

- A. Curlex sediment log (or equal) (12" diameter)
- B. Drive wood stake down to only penetrate netting not Curlex material. Wood stake should be spaced 2.0 apart. Stake should be placed at toe of slope both side.

2.03 SILT FENCE

- A. Fence fabric shall comply with the requirements of Standard Specifications for Highway Construction 628.2.6, in 3 foot tall rolls, with 4' tall 2" x 2" nominal cross section hardwood posts spaced a maximum of 10' O.C. Silt fence shall be Mirafi, Trevira, Amoco, CFM, or approved equal.

2.04 EROSION MAT

- A. A straw/coconut fiber mat encased in an accelerated photodegradable polypropylene top net. Erosion mat shall comply with the requirements of Class I, Type A erosion mat as defined by Standard Specifications for Highway Construction and the PAL. Erosion mat shall be American Excelsior, SI Geosolutions, Erosion Control Systems, North American Green, or approved equal.
- B. Concentrated Areas/Channels (as indicated on plans): This mat shall be North American Green SC150, or approved equal.
- C. Erosion Mat at Storm Outlets: This mat shall be ProPex Landlok 300, or approved equal.
- D. Erosion Mat in bio-filtration areas shall be North American Green SC-150BN or approved equal.

2.05 STAPLES

- A. Use staples conforming to Standard Specifications for Highway Construction 628.2.3 to anchor erosion mat. Staples shall be U-shaped of No.9 gauge, or heavier steel wire, or other approved materials, with a width of one to two inches and not less than 6 inches for firm soils; not less than 12 inches for loose soils.

2.06 SOIL STABILIZERS

- A. Soil stabilizers shall be non-asphalt-based products of the type specified, and meeting the requirements of the PAL.

2.07 SOIL TACKIFIERS

- A. Soil tackifiers shall be non-asphalt based products of the type specified and meeting the requirements of the PAL.

PART 3 - EXECUTION

3.01 GENERAL

- A. Install erosion control measures as required by the erosion control plan and contract documents. Provide additional erosion control measures as dictated by Contractor's means and methods. or by differing site conditions. Notify Construction Representative of additional erosion control features that are provided, but not shown on the plan.

- B. Contractor shall provide all erosion control measures necessary to protect property and the environment. Include all erosion control measures as required by the most stringent of applicable sections of DNR Technical Standards or the Standard Specifications for Highway Construction.
- C. Perform all work in accordance with manufacturer's instruction where these specifications do not specify a higher requirement.
- D. Contractor shall comply with all the requirements of the erosion control plan, and If applicable, the WPDES Stormwater Discharge Permit for Erosion Control, including required monitoring and documentation.

3.02 GRADING AND EARTHWORK

- A. Install all temporary or permanent erosion control measures prior to any onsite grading or land disturbances.
- B. Clear only those areas designated for the placement of improvements or earthwork before placement of the final cover. Perform stripping of vegetation, grading, excavation, or other land disturbing activities in a logical sequence and manner which will minimize erosion. If possible, schedule construction for times of the year when erosion hazards are minimal.
- C. Do not clear the site of topsoil, trees, and other natural ground covers before the commencement of construction. Retain natural vegetation and protect until the final ground cover is placed.
- D. Temporary stockpiles are to be located greater than 10 feet from any roadway, parking lot, paved area, drainage structure, or channel.
- E. Provide temporary stabilization and control measures (seeding, mulching, covering, erosion matting, barrier fencing, etc.) for the protection of disturbed areas and soil piles which will remain uncovered for a period of more than 7 consecutive calendar days.
- F. Remove surplus excavation materials from the site immediately after rough grading. The disposal site for the surplus excavation materials shall also be subject to these erosion control requirements.

3.03 DRAINAGE

- A. Minimize water runoff and retain or detain on site whenever possible so as to promote settling of solids and groundwater recharge.
- B. Convey drainage to the nearest adequate stormwater facility. Do not discharge water in a manner that will cause erosion or sedimentation of the site or receiving facility.
- C. Protect storm sewer inlets and catch basins in accordance with the erosion control plan, if provided, a log with the WDNR Technical Standards and PAL. If not specified, protect inlets with straw bale barriers, silt fencing, filter basket, or other equivalent methods approved by the ENGINEER, which provide the necessary erosion protection.
- D. Divert roof drainage and runoff from all areas upslope of the site around areas to be disturbed or channel them through the site in a manner that will not cause erosion.
- E. Ditch checks are to be provided in swales or ditches to reduce the velocity of water in the channel. Construct in accordance to DNR Technical Standards and PAL.
- F. Minimize the pumping of sediments when dewatering. Discharge to a sedimentation basin or sedimentation vessel to reduce the discharge of sediments. Do not discharge waster in a manner that will cause erosion or sedimentation of the site or receiving facility. Refer to Section 31 23 19- Dewatering for specifics.

3.04 TRACKING CONTROL

- A. Construct and maintain the existing base as a tracking pad in accordance with the Technical Standards. Provide each entrance to the site with a stone tracking pad at least 50 feet in length with a minimum thickness of 12 inches. The tracking pad shall be the full width of the egress point. Inspect tracking pads on a daily basis and replace aggregate when no longer effective.
- B. If necessary, provide a crushed aggregate paved parking area.
- C. If applicable, wash water shall be discharged to sedimentation basins, sedimentation vessels, or other such control areas.

3.05 MAINTENANCE

- A. Inspect all erosion control measures within 24 hours of the end of each rainfall event that exceeds 0.25", or daily during period of prolonged rainfall, or weekly during periods without rainfall. Immediately repair and/or replace any and all damaged, failed, or inadequate erosion control measures.
- B. Re-apply soil stabilizers, tackifiers, polymers and anionic polycrylamides as needed to prevent erosion of exposed soil.
- C. Maintain records of all inspections and any remedial actions taken.
- D. stockpile stabilization measures as necessary after rainfall events and heavy winds. Replace tarps, re-seed, and reapply mulch, tackifiers and stabilizers as necessary.
- E. Remove sediment from stormwater and erosion control structures, basins and vessels as necessary.
- F. Repair or replace damaged inlet protection.
- G. Replace or supplement stone tracking pads with additional stone when they become ineffective.
- H. Remove any sediment reaching a public or private roadway, parking lot, sidewalk, or other paved. Do not remove tracked sediments by flushing. Completely remove any accumulations not requiring Immediate attention at least once daily at the end of the workday.
- I. Frequently dispose of all waste and unused construction materials in licensed solid waste or wastewater facilities. Do not bury, dump, or discharge, any garbage, debris, cleaning wastes, toxic materials, or hazardous materials on the site, on the land surface or in detention basins, or otherwise allow materials to be carried off the site by runoff onto adjacent lands or into receiving waters or storm sewer systems.

END OF SECTION

SECTION 32 05 00

COMMON WORK RESULTS FOR EXTERIOR IMPROVEMENTS

PART 1 -GENERAL

1.01 SCOPE

- A. This section provides information common to two or more technical site work specification sections or items that are of a general nature¹ and not included in other sections. This section applies to all site work, as applicable. Included are the following topics:

PART 1 - GENERAL Scope Related Work

Referenced Organizations Referenced Documents Quality Assurance

Safety Permits Construction Limits

Equipment & Materials Furnished by Others

Provisions for Future Work

Work by Others

Submittals

Off Site Storage

Codes

Certificates and Inspections

PART 2- MATERIALS

Barricades, Signs, and Warning Devices

Temporary Plastic Barrier Fencing

PART 3- EXECUTION

Maintenance of Site and Building Access/Egress Continuity of Existing

Traffic/Parking and Traffic Control Protection and Continuity of Existing Utilities

Protection of Existing Work and Facilities

Construction Layout

Stormwater Excavation Water Management

Traffic Signing

1.02 RELATED WORK

- A. Applicable provisions of Division 01 govern work under this Section.

Section 03 30 05 Cast-In-Place Concrete (Outside the Building Footprint)

Section 31 05 00 Common Work Results for Earthwork (Outside the Building Footprint)

1.03 REFERENCED ORGANIZATIONS

- A. Applicable provisions of Division 01 shall govern all work under this section.
- B. Abbreviations of organizations referenced in these specifications are as follows:

AASHTO American Association of State Highway and Transportation Officials

ACPA American Concrete Pipe Association

ANSI American National Standards Institute

ASCE American Society of Civil Engineers

ASME American Society of Mechanical Engineers

ASTM American Society for Testing and Materials

AWWA	American Water Works Association
AWS	American Welding Society
FHA	Federal Highway Administration
EPA	Environmental Protection Agency
NEC	National Electric Code
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
NSF	National Sanitation Foundation
OSHA	Occupational Safety and Health Administration
STI	Steel Tank Institute
UL	Underwriters Laboratories Inc.
WDNR	State of Wisconsin Department of Natural Resources
WISDOT	State of Wisconsin Department of Transportation

1.04 REFERENCED DOCUMENTS

- A. Where reference is made to the "SSHSC", it shall mean the pertinent sections of the State of Wisconsin, Department of Transportation, Standard Specifications for Highway and Structure Construction, current edition, and all supplemental and interim supplemental specifications. Where reference is made to the "SSSWC", it shall mean pertinent sections of the Standard Specifications for Sewer and Water Construction in Wisconsin, current edition. Where reference is made to the "BMPH", it shall mean the Wisconsin Construction Site Best Management Practice Handbook, current edition as published by the WDNR. Method of measurement and basis of payment sections in referenced documents shall not apply.

1.05 QUALITY ASSURANCE

- A. Provide materials and products as required by individual specification sections. Refer to Section GC - General Conditions of the Contract regarding substitutions.
- B. Provide quality assurance testing and reporting as required by individual specification sections.

1.06 SAFETY

- A. Contractor is solely responsible for worksite safety.
- B. Perform all work in accordance with applicable OSHA, state and local safety standards.
- C. Contact Diggers Hotline at 1-800-242-8511 in accordance with statutory requirements. Request that non-member utilities and private utilities be located by the appropriate parties.

1.07 PERMITS

- A. Unless otherwise noted in the Contract Documents, Contractor shall be responsible for obtaining and paying for all permits necessary to complete the work.
- B. The ENGINEER will apply for the NOI/WRAPP permit (if required).

1.08 CONSTRUCTION LIMITS

- A. Construction Limits are indicated on the drawings. In the absence of such a designation on the drawings, confine work to the minimum area reasonably necessary to undertake the work as determined by the Construction Representative. In no case shall construction activities extend beyond state property lines or construction easements.

- B. The Contractor shall restore all disturbed areas in accordance with the drawings and specifications. If plans and specifications do not address restoration of specific areas¹ these areas will be restored to pre-construction conditions as approved by the Construction Representative.

1.09 WORK BY OTHERS

- A. Coordinate work under this project with work by Owner and other Contractors on the site.

1.10 SUBMITTALS

- A. Refer to General Conditions of the contract and Division 01.
- B. Submit manufacturer's shop drawings, product data, samples, substitutions and operation and maintenance (O&M) data for approval as required by Individual specification sections using the format specified in Section 31 00 05- Civil General Requirements.

1.11 OFF SITE STORAGE

- A. Refer to Division 01.
- B. Coordinate with Owner prior to bidding.

1.12 CODES

- A. Comply with the requirements of all applicable, local, state, and federal codes.

1.13 CERTIFICATIONS AND INSPECTIONS

- A. Refer to General Conditions.
- B. Obtain and pay for all required sampling, testing, inspections, and certifications except those expressly listed as provided by the ENGINEER or other third party in the Contract Documents. Deliver originals of certificates and documents to the Construction Representative within 3 days; provide copies to the ENGINEER. Include copies of the certifications and documents in the O&M Manual.

PART 2 - MATERIALS

2.01 BARRICADES, SIGNS, AND WARNING DEVICES

- A. Traffic barricades, traffic signs, and warning devices shall meet the requirements of applicable OSHA standards and the FHA Manual of Uniform Traffic Control Devices (MUTCD).
- B. Traffic signing materials shall meet the requirements of Sections 634 and 637 of Standard Specifications for Highway Construction except that signs shall be from aluminum blanks.
- C. Galvanized 2" round posts shall be provided for all signs.

2.02 TEMPORARY PLASTIC BARRIER FENCING

- A. UV stabilized high-density polyethylene barrier fence free of holes tears and other defects. Provide 4' tall fence in diamond or rectangular pattern. Fencing shall be "safety orange" color, unless otherwise noted.

- B. Posts for temporary plastic barrier fencing shall be 5' tall, minimum 12 gauge, painted metal posts.

PART 3 - EXECUTION

3.01 MAINTENANCE OF SITE AND BUILDING ACCESS/EGRESS

- A. Unless otherwise shown or directed, maintain existing access and egress to the facility throughout construction. Maintain ANSI A117 compliant access for disabled persons, delivery access, emergency vehicle access, and emergency egress. Do not interrupt access and egress without prior written approval from the Construction Representative.

3.02 CONTINUITY OF EXISTING TRAFFIC/PARKING AND TRAFFIC CONTROL

- A. Refer also to Section GR- General Requirements.
- B. Do not Interrupt or change existing traffic, delivery, or parking without prior written approval from the Construction Representative. When interruption is required, coordinate schedule with the Owner agency to minimize disruptions. When working in public right of-way, obtain all necessary approvals and permits from applicable municipalities and WISDOT.
- C. When Contractor's activities impede or obstruct traffic flow, Contractor shall provide traffic control devices, signs and flaggers in accordance with other Contract Documents and the current version of the MUTCD, or as shown on the Drawings.

3.03 PROTECTION AND CONTINUITY OF EXISTING UTILITIES

- A. Verify the locations of any water, drainage, gas, sewer, electric, drainage, gas, sewer, electric, telephone/communication, fuel, steam lines or other utilities and site features which may be encountered in any excavations or ether sitework. All lines shall be properly underpinned and supported to avoid disruption of service.
- B. Do not interrupt or change existing utilities without prior written approval from the Construction Representative, affected utilities and users. Notify all users impacted by outages a minimum of 48 hours in advance of outage. Notification shall be provided in writing and describe the nature and duration of outages and provide the name and number of Contractor's foreman or other contact.
- C. Any service connections encountered are to be removed and shall be cut off at the limits of the excavation and capped in accordance with the requirements of applicable codes and any specifications governing such removals.

3.04 PROTECTION OF EXISTING WORK AND FACILITIES

- A. Verify the locations of, and protect, any signs, paved surfaces, buildings, structures, landscaping, streetlights, utilities, and all other such facilities that may be encountered or interfered with during the progress of the work. Take measures necessary to safeguard all existing work and facilities that are outside the limits of the work or items that are within the construction limits but are intended to remain. Report any damage to existing facilities to the Construction Representative immediately. Correct and pay for all damages.

3.05 CONSTRUCTION LAYOUT

- A. Contractor shall establish all heights and grades to properly execute work from bench mark established by others (from original survey work). It is strongly recommended that the original surveyor be contacted and used for all construction layout and as-built surveys in an effort to avoid conflict between datums and horizontal control points used. Prior to

construction layout, existing and proposed finished floor elevations shall be checked with respect to current site benchmarks to ensure elevations correspond with layout elevations.

- B. Contractor shall provide all construction layout surveys to accurately locate the construction on the site.

3.06 STORMWATER/EXCAVATION WATER MANAGEMENT

- A. Control grading around structures, pitch ground to prevent water running into excavated areas.
- B. Pits, trenches within building lines and other excavations shall be maintained free of water.
- C. Provide trenching, pumpings other facilities required.
- D. Notify the ENGINEER if springs or running water are encountered in excavation; provide discharge by trenches, drains, pumping to point outside of excavation. Provide information to the ENGINEER of points and areas that water will be discharged. At the ENGINEER's option, the Contractor shall drain the spring to the storm sewer system by the use of field tile.
- E. Be responsible for control measures to prevent damage from flooding, erosion, and sedimentation to on-site and off-site areas.

3.07 TRAFFIC SIGNING

- A. Install traffic signing at the locations shown on the drawings.
- B. Traffic signs type and size shall be as shown on the drawings. Provide traffic sign footing or base as shown on the drawings of the kind.

END OF SECTION

SECTION 32 11 23

DENSE GRADED BASE

PART 1 - GENERAL

1.01 SCOPE

- A. The work under this section consists of constructing a dense graded base using crushed stone or crushed gravel.

PART 1 -GENERAL Scope Related Work Submittals

Record Drawings
References
Continuity of Existing Traffic
Protection of Existing Work or Facilities
Owner Furnished Materials
Provisions for Future Work or Work by Others
Provisions for Future or Work by Others

PART 2- MATERIALS

General
Breaker Run Aggregate

PART 3- EXECUTION

Construction
Compaction
Excavating Below Subgrade (EBS)
Cleanup

1.02 RELATED WORK

- A. Applicable provisions of Division 01 govern work under this Section.
- | | |
|---------------------|--|
| Section 03 30 05 | Cast-In-Place Concrete (Outside the Building Footprint) |
| Section 31 05 00 | Common Work Results for Earthwork (Outside the Building Footprint) |
| Section 32 12 16.13 | Plant Mixed Asphalt Paving |

1.03 SUBMITTALS

- A. Provide copies of record drawings.
- B. Provide copies of material testing reports.
- C. Provide manufacturer's product information (cut sheets) and mix designs and specifications:
1. Aggregate Gradations
- D. Materials conforming to the WisDOT Standard Specifications for Highway and Structure Construction (Latest Edition, hereafter called "Standard Specifications for Highway Construction" and supplied from a WisDOT approved source need not be tested. The contractor shall furnish evidence of such WisDOT approval to the A/E and/or Construction Representative

1.04 RECORD DRAWINGS

- A. Maintain record drawings showing actual locations of utilities and other features encountered, modifications to proposed grades and site features, and other deviations from the original design.

1.05 REFERENCES

- A. Wherever WisDOT or SSHSC appears in this specification it shall be construed to mean the pertinent sections of the State of Wisconsin, Department of Transportation, Standard Specifications for Highway and Structure Construction (SSHSC), current edition, and all supplemental and interim supplemental specifications, as they may pertain.
- B. Applicable provisions of Division 1 shall apply to this section.

1.06 CONTINUITY OF EXISTING TRAFFIC, PARKING, AND UTILITIES

- A. Do not interrupt or change existing traffic, delivery, parking, or utility services without prior written approval from the Construction Representative. When traffic interruption is required coordinate schedules with the Owner agency in order to minimize disruptions.

1.07 PROTECTION OF EXISTING WORK AND FACILITIES

- A. The Contractor shall verify the locations of, and protect, any signs, adjacent paved surfaces, buildings, structures, landscaping, lights, utilities, and all other such facilities that may be encountered or interrupted with during the progress of the work. The contractor shall take measures necessary to safeguard existing work and facilities which are outside the limits of the work or items which are within the construction limits but are intended to remain.

1.08 PROVISIONS FOR FUTURE WORK

- A. The Contractor shall coordinate his work and access to the site with the work and access requirements of all other Contractors prior to the start of work; he should do so especially when such work will connect to or be connected to other work.

PART 2 - MATERIALS

2.01 GENERAL

- A. Use dense graded base. Materials shall conform to Section 301.2 of the WisDOT Standard Specifications for Highway and Structure Construction. Material gradations shall conform to Section 305.2.2 of the WisDOT Standard Specifications for Highway and Structure Construction unless specified elsewhere in the contract documents.
- B. Base Course Gradation: 1-1/4" Crushed Aggregate
 - 1. Base course material shall be crushed stone or crushed gravel only.

2.02 BREAKER RUN AGGREGATE

- A. Crushed stone, rock, or gravel meeting the requirements of either Breaker Run or Select Crushed material as defined in Section 311.2 or Section 312.2 of Standard Specifications for Highway Construction, respectively.

PART 3 - EXECUTION

3.01 CONSTRUCTION

- A. Preparing the Pavement Foundation (sub-grade)
 - 1. Prepare the foundation or resurface the previously placed base layer, as specified in WisDOT Section 211 before placing base. Do not place base foundations that are soft, spongy, or covered by ice or snow. Water and rework or re-compact dry foundations as necessary to ensure proper compaction or as the representative designates.
 - a. In proposed pavement areas all organic solid shall be removed.

- b. Excavation shall be reasonably free of water prior to filling. Do not place material on frozen surfaces or use frozen material.
 - c. In areas of existing pavement to be modified or adjusted in grade, the existing pavement section shall be removed by an acceptable method. The new pavement section shall match the construction details.
 - d. Place and compact material to minimize settlement and avoid damage to structures, pipes, utility lines, and other features. Hand-place and compact material as necessary.
 - e. Moisture condition backfill material as necessary to achieve density required for given use.
 - f. Compact fill material as required for the given use.
 - g. It is the responsibility of the Contractor to provide all necessary compaction equipment and other grading equipment that may be required to obtain the specified density. Vibratory plate or tamping type walk behind compactors will be required whenever backfill is placed adjacent to structures, pipes, utility lines, and other features.
 - h. Where additional filling or excavation is necessary or placement of base course will be delayed, roll surface of proposed roadway or parking lot with a smooth drum roller to provide relatively impervious surface and promote drainage.
2. Proof roll all subgrade areas that are to receive aggregate base or pavement. Proof roll with a loaded dump truck prior to the placement of base courses in order to locate soft spots that yield under loading. Over-excavate (EBS) areas of soft subgrade that will not compact readily when proof rolled or tamped. Backfill with 3" base aggregate material as approved by the project representative.
- a. Prior to excavating below subgrade (EBS) or placing any base course, contact the ENGINEER to schedule inspection of subgrade and proof rolling. Provide minimum of 3 working days confirmed notice. All proof rolling shall be completed in the presence of the ENGINEER or designee.
 - b. To complete proof rolling, entire roadway subgrade shall be provided with a relatively smooth surface, suitable for observing soil reaction during proof rolling.
 - c. Contractor shall schedule and provide a fully loaded tri-axle dump truck for proof rolling. Loaded truck shall have a minimum gross operating weight of 30 tons. Test shall be conducted with "tag" or "pusher" axles retracted from the ground.
 - d. Test rolling shall be accomplished in a series of traverses parallel to the centerline of the street or parking area. The truck shall traverse the length of the street or parking area once for each 12' of width. Additional passes along the traverse shall be completed as directed by the ENGINEER or designee to further define unsatisfactory subgrade.
 - e. Soft areas, yielding areas, cracked areas, or areas where rolling or wave action is observed shall be considered indicative of an unsatisfactory subgrade. Such areas shall be EBS as outlined in Section 31 05 00.
 - f. Once the subgrade has been proof-rolled and approved, protect the soils from becoming saturated, frozen, or adversely altered.
 - g. Contractor shall provide a unit price and allowance for EBS, see bid form for allowance description and required unit price listing. EBS as outlined in Section 31 05 00.

B. Stockpiling

- 1. If continuous compliance with material specifications is questionable, the Project Representative may require the Contractor to supply material from a stockpile of previously tested material. Maintain a sufficiently large stockpile to preclude the use of material not previously approved.
- 2. Build and maintain stockpiles using methods that minimize segregation and prevent contamination. If the contract specifies location, place stockpiles where specified. Clear and prepare stockpile areas to facilitate the recovery of the maximum amount of stockpiled material.

- C. Constructing Base
 - 1. Place aggregate in a manner that minimizes hauling on the subgrade. Do not use vehicles or operations that damage the subgrade or in-place base. Deposit material in a manner that minimizes segregation.
 - 2. Construct the base to the width and section the plans show, Shape, and compact the base surface to within 0.04 feet (12 mm) of the plan elevation.
 - 3. Ensure there is adequate moisture in the aggregate during placing, shaping, and compacting to prevent segregation and achieve adequate compaction.
 - 4. Maintain the base until paving over it or until the project representative accepts the work if paving is not part of the contract. The contractor is not responsible for maintaining material placed on detours, unless the special provisions specify otherwise.
- D. Standard Compaction
 - 1. Compact the base until there is no appreciable displacement, either laterally or longitudinally, under the compaction equipment. Route hauling equipment uniformly over previously placed base. Compact each layer before placing a subsequent layer. If the material is too dry to readily attain the required compaction, add water as necessary to achieve compaction
- E. Special Compaction
 - 1. If the contract requires special compaction, compact each layer to 95 percent of maximum density, or more, before placing the subsequent layer, a geotechnical engineer will determine the maximum density according to AASHTO T 99 method C or D and in-place density according to AASHTO T 191.
- F. Controlling Dust
 - 1. Apply water or other engineer-approved dust control materials to control dust during construction and maintenance of the base and shoulders.

3.02 COMPACTION

- A. General
 - 1. Compact each base layer, including shoulder foreslopes, with equipment specified in WisDOT Section 301.3.1. Use standard compaction conforming to WisDOT Section 301.3.4.2 unless the special provisions specify other methods. Final shaping of shoulder foreslopes does not require compaction.
- B. Compacting 1 1/4-Inch Base and 3/4-Inch Base
 - 1. If using a pneumatic roller, do not exceed a compacted thickness of 6 inches (150 mm) per layer. For the first layer placed over a loose sandy subgrade, the contractor may, with the geotechnical engineer's approval, increase the compacted layer thickness to 8 inches (200 mm). If using a vibratory roller, do not exceed a compacted thickness of 8 inches (200 mm) per layer.
- C. Compacting 3-Inch Base
 - 1. Compact with a vibratory or pneumatic roller. Do not exceed a compacted thickness of 9 inches (225 mm) per layer.

3.03 EXCAVATION BELOW SUBGRADE (EBS)

- A. EBS shall be completed only when directed by the ENGINEER. The Contractor shall not be compensated for any unauthorized EBS. Measure and document undercut areas and depths in consultation with ENGINEER. Work shall comply with Section 31 05 00.

3.04 CLEANUP

- A. After the project is completed, thoroughly clean up all debris that may have accumulated during the placement of dense graded base. Replace or repair as required, all surfaces and/or landscape features damaged or disturbed under this Item of work.

END OF SECTION

SECTION 32 12 16.13

PLANT MIX ASPHALT PAVING

PART 1 - GENERAL

1.01 SCOPE

- A. The work under this section shall consist of providing all work, materials, labor, equipment, and supervision necessary to provide and construct the paving and surfacing as provided for in these specifications and on the drawings. Included are the following topics:

PART 1 -GENERAL

General
Related Work
Submittals
References
Owner Furnished Material
Provisions for Future Work or Work by Others

PART 2 -MATERIALS

Recycled Products and Materials
Hot Mix Asphalt (HMA) Pavements

PART 3- EXECUTION

Hot Mix Asphalt (HMA) Pavements
Pavement Repairs

1.02 RELATED WORK

- A. Applicable provisions of Division 01 govern work under this Section.
- | | |
|------------------|--|
| Section 31 05 00 | Common Work Results for Earthwork (Outside the Building Footprint) |
| Section 32 05 00 | Common Work Results for Exterior Improvements |
| Section 32 11 23 | Dense Graded Base |

1.03 SUBMITTALS

- A. Provide copies of record drawings.
- B. Provide copies of material testing reports.
- C. Provide manufacturers product information (cut sheets) and mix designs and specifications:
- Asphalt Mix Design
- D. Materials conforming to the WisDOT Standard Specifications for Highway and Structure Construction (Latest Edition, hereafter called "Standard Specifications for Highway Construction") and supplied from a WisDOT approved source need not be tested. The contractor shall furnish evidence of such WisDOT approval to the ENGINEER.

1.04 RECORD DRAWINGS

- A. Maintain record drawings showing actual locations of utilities and other features encountered, modifications to proposed grades and site features, and other deviations from the original design.

1.05 REFERENCES

- A. Wherever WisDOT or SSHSC appears in this specification it shall be construed to mean the pertinent sections of the State of Wisconsin Department of Transportation, Standard Specifications for Highway and Structure Construction (SSHSC), current edition, and all supplemental and interim supplemental specifications, as they may pertain.
- B. Applicable provisions of Division 01 shall apply to this section.

1.06 PROVISIONS FOR FUTURE WORK

- A. The Contractor shall coordinate work and access to the site with the work and access requirements of all other Contractors prior to the start of work; The Contractor should do so especially when such work will connect to or be connected to other work.

PART 2 - MATERIALS

2.01 HOT MIX ASPHALTIC (HMA) PAVEMENT

- A. Provide HMA pavement conforming to the requirements Section 460 of Standard Specifications for Highway Construction. Utilize the same material type throughout the paving operation unless noted elsewhere on the plans. Materials provided under this section to the requirements of WisDOT Standard Specifications for Highway AND Structure Construction, Section 455 and as revised in any current Supplemental Specifications.

PART 3 - EXECUTION

3.01 HOT MIX ASPHALT (HMA) PAVEMENT

- A. HMA shall be placed in accordance with the requirements of Section 460 of Standard Specifications for Highway Construction.
- B. HMA thickness as indicated in plan details.
- C. If final lift of asphalt is not installed until a later date, all failed or damaged areas shall be removed and replaced by the contractor at no cost to the owner at the time of final lift Installation. In addition, a tack coat will be required to be placed for all layers that are not installed at the same time as the initial layer. Tack coat material and application rate shall meet the WDOT standard specifications.
- D. Asphalt shall not be installed adjacent to new curb nor shall backfilling occur adjacent to new curb no sooner than 7 days after pouring. If desired, Contractor (at his cost) may provide cylinders (tested by a geotechnical engineer) that prove a minimum strength of 3,000 psi sooner than 7 days.
- E. Asphalt pavement shall only be installed after a successful proof-roll of the base course has been completed and observed/approved by the ENGINEER (immediately before the asphalt placement).

3.02 PAVEMENT REPAIRS

- A. Sawcut all pavement surfaces to neat and straight lines at the limits of removal by a two-step method (only applicable in areas where existing pavement is not being pulverized). Limit the initial pavement removal to the immediate area of the proposed work. Full depth sawcutting is not required for this phase of removal. After the work is completed, make a full depth sawcut neat and straight lines outside the widest point of pavement disruption. Sawcut the lines of the repair parallel to existing joints, or parallel to or perpendicular to pavement edges so as to form a neat patch. Carefully remove all remaining pavement within the sawcut area to the lines of the sawcut. Do not disturb the existing base materials between the area disturbed by the work and the sawcut line by the sawcutting, pavement removal, or pavement replacement processes.

- B. Contractor to note existing areas of concern or failure to the owner prior to the start of construction.
- C. Remove all walks, curbs, and other jointed paving by sawcutting at the nearest joint beyond the limits of removal
- D. Adjust all inlets, manholes, catch basins, valve boxes, and other such castings to match new finished grade as incidental work.
- E. Place HMA surface course on all roadway, parking lots, service drives, and loading dock areas as designated on the plans.
- F. Place HMA binder course in all areas undergoing removal and replacement and in areas receiving new HMA surface course. Remove existing gravel as necessary to allow placement of the proposed pavement section shown in the plans.

END OF SECTION

SECTION 32 90 00

LANDSCAPING

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Work Included: Labor, materials and equipment required to complete all landscaping including, but not limited to:
1. Finish grading of topsoil;
 2. Soil treatment;
 3. Seeded turf construction;
 4. Native seeded turf construction;
 5. Planting of trees, shrubs, perennials, grasses, ground covers & annuals;
 6. Topsoil & bed amendments for planting;
 7. Installation of mulches & bed edging
 8. Protection and maintenance;
 9. One (1) year warranty & maintenance on trees, shrubs, woody plants, perennials & grasses
 10. One (1) year warranty & maintenance of bluegrass turf areas
 11. Two (2) year warranty & maintenance of low-mow seeded areas
 12. All other labor and materials required to complete landscape work.
- B. Related Work Specified Elsewhere:
1. Common Work Results for Earthwork- Section 31 05 00

1.02 QUALITY ASSURANCE

- A. Samples, Tests and Inspection Notice of Sources: Within ten (10) days following acceptance of the bid, provide written notification to the Engineer of sources of the material required or desired to be inspected or tested.
- B. Plants: Contractor will be responsible for certificates of inspection of plant materials that may be required by the Federal, State or other authorities to accompany shipments of plants. Inspection and approval by the Engineer of plants at place of growth or upon delivery will not in any way impair right of rejection for failure to meet other requirements during progress of Work.
- C. Plant Quality: All materials shall be true to the species and variety/hybrid/cultivar as specified, nursery-grown in accordance with good horticultural practices and under climatic conditions similar to the site location. Specimens obtained specifically for this project shall have been freshly dug and properly prepared for planting:
1. The contractor shall provide written lists & invoices of plant materials ordered for the project, including plant sources, species, sizes & root conditions.
 2. Trees and shrubs with a damaged, cut or crooked leader, abrasion of bark, sunscald, frost crack, disfiguring knots, insects (including eggs and larvae) or insect damage, cankers/cankorous lesions or fungal mats, mold, prematurely-opened buds, or cuts of limbs over 3/4" (1.9 cm) diameter that are not completely callused will be rejected.
 3. Balled and burlapped plants will not be accepted if the ball is dry, cracked, or broken before or during planting.
 4. Container-grown plants shall not be pot-bound, nor have kinked, circling, or bent roots.
 5. Herbaceous perennials, annuals and bulbs shall only be supplied from nurseries certified by state plant inspectors. Substitutes or collected material may be used if approved by Owner and/or the Engineer.

- D. Seed Mixes: Submit all sources, mix names, manufacturer analyses and guarantees of germination as specified for the Engineer review/approval.
- E. Bulk Landscape Materials: Submit samples of all landscape materials outlined in PART 2 including (but not limited to) soils, bed amendments, fertilizer, stone, edging, sod and/or seed as specified for the Engineer review/approval.
- F. Topsoil Testing: Prior to planting, contractor is responsible for obtaining soil tests for all topsoil (existing stockpile or newly imported.)
 - 1. Soil testing results shall include (but is not limited to) soil pH, percent organic matter, phosphorus, potassium, calcium, cation exchange capacity, sodium absorption ratio, deleterious material, mineral & plant nutrient content and texture {percentages of sand, silt and/or clay.}
 - 2. Report presence of problem salts, minerals or heavy metals including aluminum, arsenic, barium, cadmium, chromium, cobalt, lead, lithium and/or vanadium. If such problem materials are present, provide additional recommendations for corrective action.
 - 3. Soil treatment recommendations shall be provided, measured by weight per 1,000 SF (or volume per CY) for nitrogen, phosphorus and potash nutrients and soil amendments to be added to produce satisfactory planting soil suitable for healthy, viable plants.
 - 4. Contaminated soil shall be removed from the project site if discovered.
 - 5. Remove excessive clay, gravel, stones, materials detrimental to healthy plant growth and/or debris greater than 1" dia, Mix new topsoil mix into existing soil if needed.

1.03 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Tagging: All plants are to be labeled by their plant name & size. Labels shall be securely attached to all plants, bundles and containers when delivered. Labels shall be durable, legible and constructed of weather-resistant materials. All labels shall remain on plant material until the project has been inspected by the Engineer. Plants with no labels will be assumed to be deficient (incorrect size and/or species) unless otherwise proven via nursery receipt.
- B. Delivery: During transport, no plant shall be bound with rope or wire in a manner that damages trunks or breaks branches. Plants shall not be dragged, lifted or pulled by their trunks, branches or foliage in a damaging way. No plant shall be thrown off a truck or loader to the ground.
- C. Protection After Delivery:
 - 1. Landscape materials shall be installed within 72 hours of delivery to the project site. Schedule material deliveries accordingly to limit on-site storage.
 - 2. Cover soil balls of BB plants which cannot be planted immediately upon delivery with moist soil or mulch or provide other protection from drying winds and sun.
 - 3. Plant or heel-in bare root plants immediately upon delivery. Water all plants as necessary until planted.
 - 4. Keep containerized plants in a shaded area, well-covered with wood chips, soil or other approved material, and kept well-watered.
 - 5. If not planted immediately after delivery, or unless plant locations require navigation into tight confines, all tree & shrub canopies are to be un-bound while waiting for Installation.

1.04 GUARANTEE AND REPLACEMENT

- A. Guarantee: Upon completion of installation, all plantings shall be alive, thriving and with satisfactory growth at the end of the following guarantee periods:
 - Woody plants: one (1) full year
 - Perennials & grasses: one (1) year

- Bluegrass turf areas (seed & sod): one (1) year
 - Native vegetated areas, including low-mow areas: two (2) full years
1. At any time during the guarantee period, the Contractor may be requested to remove or replace, without cost to the Owner, and within a specified planting period, any plants not in a healthy and flourishing condition as determined by the Owner and/or the Engineer. Replacements will not be held off until the end of the warranty period.
- B. Replacement: Prior to end of the one-year guarantee period, the Engineer or Town Engineer may make inspection upon written notice requesting such Inspection submitted by Contractor at least ten (10) days before anticipated date:
1. Remove from the site all plants required under contract which are dead or not in satisfactory growth, as determined by the Engineer. Replace these and all missing plants, due to Contractor error as soon as conditions permit but during proper season. In case of any questions regarding condition and satisfactory establishment of a rejected plant, Contractor may elect to allow such plant to remain through another complete growing season at which time the rejected plant, if found to be dead, in an unhealthy or badly impaired condition, shall be replaced.
 2. If present, native seed mix areas which are not successfully established by the end of the first year of the two-year warranty period shall be re-sown at by Contractor at no additional cost to the Owner. These areas shall be inspected at the end of the second year of the two-year warranty period, and shall again be re-sown if necessary by Contractor at no additional cost to the Owner.
- C. Materials and Operation:
1. Replace with plants of same kind and size as specified in plant list. Furnish and plant as specified. Replacement materials will be furnished with new one-year guarantees. One replacement shall be made per individual plant.
 2. Replace native seed mix areas with same mix as originally required and per the original specifications, unless otherwise discussed and a mutually-acceptable substitute mix is chosen and approved by the Engineer.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Topsoil: Sufficient topsoil to complete planting of trees, shrubs, perennials, grasses, ground covers & annuals.
1. Topsoil shall be weed free, natural, fertile, friable soil, possessing characteristics of representative productive soils in the vicinity.
 2. Obtain from naturally, well drained areas.
 3. Soil shall not be excessively acid or alkaline or contain toxic substances which may be harmful to plant growth.
 4. Topsoil shall be without admixtures of stones, stumps, roots, debris or other objects 1" or more in diameter which might be a hindrance to planting operations. Contractor shall be responsible for any all soil preparation required in order to deliver debris-free topsoil, including screening (either on-site or off-site) or import of new material if existing soil cannot be properly prepared.
 5. Topsoil present on site, If meeting all of the requirements above, may be utilized, Existing topsoil shall be stripped & stored by the earthwork contractor.
 6. Unless otherwise indicated in Sections 31 00 00 and/or 31 05 00, all topsoil shall be furnished and placed by the earthwork contractor.
- B. Soil Amendments & Fertilizers: Additional amendments if specified in the landscape plans:
1. Peat moss: Type 1 sphagnum, weed/seed free, 3.1-5.0 pH.
 2. Compost: Standard commercial-grade compost containing sheep or cow manure.
 3. Commercial Fertilizer: Fertilizer shall be granular, non-burning, composed of not less than 50% organic, slow acting w/ guaranteed analysis, Fertilizer must meet the requirements of the Wisconsin Department of Agriculture as to registration and

- labeling and must be delivered to the site in sealed & labeled bags. All fertilizer to be spread at the rate specified by the manufacturers:
- a. Lawns: Furnish & spread in the topsoiled area a commercial lawn starter fertilizer mixture.
 - b. Plantings: Furnish & install a commercial 16-8-8 starter fertilizer mixture (Nutripak or sim.)
4. Mycorrhizal Fungi: Dry, granular inoculant containing at least 5300 spores per lb of vesicular arbuscular mycorrhizal fungi and 95 million spores per lb of ectomycorrhizal fungi, with a maximum of 5.5 percent inert material
- C. Materials for Staking and Wrapping: All stakes & wrapping to be installed as specified in the tree/shrub planting details as shown in the landscape plans:
1. Stakes shall be 6' to 8' long sections of unflanged metal or 2" x 2" hardwood. Support ties shall be 2" or wider bands of polypropylene or elasticized or webbed strapping. Ground anchors shall be arrowhead shaped earth anchors of malleable iron castings, aluminum castings or stamped steel.
 2. Trunk Wrapping Material: Perforated drainage tubing or similar material approved by the Engineer, large enough in diameter to prevent abrasion of the trunk and to allow air circulation between the tubing and the trunk.
- D. Seeded turf: Turf seed mixes shall be provided for review/approval as specified in the landscape plans. Deliver seed to the site in unopened containers; include the manufacturer's guaranteed analyses.
- E. Specialty seed mixes: Native seed mixes shall be provided for review/approval as specified in the landscape plans. Deliver seed to the site in unopened containers; include the manufacturer's guaranteed analyses:
1. Forb and grass seed shall conform to the Wisconsin Statutes and Wisconsin Administrative Code Chapter ATPC regarding noxious weed seed content and labeling,
 2. Test forb and grass seed according to the methods and procedure used for sampling and analyzing seed for purity, germination, and noxious weed seed content specified in the current edition of Rules for Testing Seed, Published by the Association of Official Seed Analysts.
 3. Use seed within one year of the test date appearing on the label.
 4. Species composed of pure live seed (PLS) shall contain no named or improved varieties. PLS shall be from Wisconsin, Northern Illinois, Northeastern Iowa or Eastern Minnesota nurseries specializing in growing native species from Wisconsin genotypes.
 5. Grasses classified as "agriculture grasses" shall be PLS as specified. Other seed shall be "clean" according to high quality industry standards. All seed shall be cold, dry stratified. Seed mixture shall be blended by the vendor and ratios of various species shall be guaranteed by the vendor in writing as specified. Minimum percent purity for native species is 90 percent. Any substitutions of species due to availability must be approved by the Owner or the engineer.
- F. Plant Materials:
1. Plant List: A list of plants is shown on planting plan.
 2. Nomenclature: Names of plants required under this contract conform to those in "Standardized Plant Names", latest edition, prepared by American Joint Committee on Horticulture Nomenclature. Names of varieties not included therein conform to generally accepted common names.
 3. Provide quantities necessary to complete planting as shown. Quantities shown in the plant schedule on the drawings are for convenience only. Take actual count from plans.
 4. Quality and Size: Plants shall have a habit of growth that is normal for species and shall be sound, healthy, vigorous and free from insect pests, plant diseases and injuries:
 - a. All plants shall be equal to or exceed the measurements specified in plant list, which are minimum acceptable sizes, measured before pruning with

- branches in normal position. Larger plant materials can be used upon approval; their installation shall not increase the contract price.
- b. Do only necessary pruning at time of planting.
- c. Requirements for measurement, branching, grading, quality, baling and burlapping of trees shall conform to standards currently recommended by "American Standard for Nursery Stock".
- d. Take caliper measurement of trees at height of 6" above the ground up to and including 4" caliper size and 12" above ground for larger sizes.
- 5. Substitutions will be permitted only upon submission of proof that a plant is not obtainable within geographic area or similar plant hardiness zone, and authorization by the Engineer of Change Order providing for use of nearest equivalent obtainable size or variety of plant having same essential characteristics within an equitable adjustment of contract price. In the event that substitutes are necessary, notify the Engineer in writing prior to ordering and include a listing of all requested substitute plant species, quantities & sources for review & approval.
- 6. Balled and Burlapped Plants: Plants designated "B&B" in the plant list shall be balled and burlapped. They shall be dug with firm, natural ball of soil of sufficient diameter and depth to encompass fibrous and feeding root system necessary for full recovery of the plant. Balls shall be firmly wrapped with burlap or similar material and bound with twine, cord or wire mesh. Where necessary to prevent breaking or cracking of the ball during planting, ball may be secured to a platform.
- G. Bark Mulch: Finely shredded hardwood bark mulch, free from branches, heartwood, insects and other organic matter. Max. bark pieces to not exceed 3" length & 1/4" thickness. See Landscape Notes for specific depths & locations.
 - 1. Wood chips are not an acceptable substitute.
 - 2. Bark mulch not conforming to this specification shall be removed from the project site, regardless of whether it has been placed in landscape areas, and replaced with proper mulch. If mulch is rejected, contractor shall supply a product sample for the Engineer approval prior to replacing the rejected mulch.
- H. Soil Separation Fabric/Weed Barrier: Non-woven fabric of 100 percent polypropylene staple fiber. Fabric shall be freely permeable to moisture transmittal. Nominal weight of 3.0 ounces per square yard. Provide only where landscape fabric is indicated in the landscape plans.
 - 1. "Tygar Professional Landscape Fabric"
 - 2. Approved equal
- I. Anti-Desiccant: If required as protection for leaf surfaces, anti-desiccant shall be permeable to permit transpiration, mixed & applied in accordance with manufacturer's specifications.
- J. Pre-emergent Herbicide (Selective and Non-Selective): Effective for controlling the germination or growth of weeds within planted areas at the soil level directly below the mulch layer.
- K. Post-Emergent Herbicide (Selective and Non-Selective): Effective for controlling weed growth that has already germinated.

PART 3 - EXECUTION

3.01 CONSTRUCTION AND PLANTING METHODS

- A. Time of Planting: Landscape Contractor will be notified when other Divisions of work have progressed sufficiently to commence work.
 - 1. Planting Seasons:
 - a. Spring, April 1st through June 15th.
 - b. Fall, August 15th through November 1st.
 - 2. Turfgrass Seeding Seasons:
 - a. Spring, April 1st through June 15th.
 - b. Fall, September 1st through October 15th.

3. Native Seeding Seasons:
 - a. Spring, May 1st through June 30th
 - b. Fall, October 30th through the first snowfall
 4. Evergreen exceptions: No conifers or evergreen trees/shrubs shall be planted after October 15th.
 5. At option and at full responsibility of Landscape Contractor, planting operations may be conducted at other times of year without additional compensation, including any additional costs for irrigation. All inspection and warranty terms shall still be valid and enforced.
- B. Pruning and Repair: New Plants:
1. Prune trees and shrubs as required to repair injuries. Limit amount of pruning to the minimum necessary to remove dead, injured and/or broken branches.
 2. Prune in such a manner as not to change the natural habit, shape or overall height of plant.
 3. Make cuts flush, leaving no stubs. Where bark is bruised or scarred, trace back injured cambium to living tissue and remove. Smooth and shape wounds to not retain water.
 4. So that proper installation heights & sizes can be verified, do not prune shrubs prior to inspection by the Engineer.
- C. Obstructions Below Ground or Overhead:
1. All utilities shall be located prior to the start of construction, both public & private.
 2. Contact Digger's Hotline and Private Lines (or equivalent) to have all public and private on-site utilities located prior to beginning work.
 3. It is not contemplated that planting will be done where underground or overhead obstructions, harmful substances or unsuitable soils will be encountered. If such conditions are encountered, notify the Engineer & project representative immediately to determine the appropriate course of action.
- D. Topsoil furnishing, spreading & fine grading: Landscape contractor is responsible for fine grading of the topsoil (and/or other soil mixes). Rough grading shall be completed by others. Coordinate with the General Contractor, Construction Manager and/or earthwork contractor to ensure that all minimum planting depths and soil types are provided as indicated on the landscape plan. Unless otherwise indicated:
1. Seed, sod and/or native seed mix areas: min. 6" soil.
 2. Ornamental landscape areas (i.e. trees, shrubs, perennials, grasses and/or annuals): min, 18" soil.
- E. New Planting:
1. Pre-emergent herbicides: If on-site soils appear weedy, or if adjacent vegetation may disperse undesirable seeds onto the project, use of pre-emergent herbicides will be acceptable if approved by Owner and the Engineer prior to use.
 2. Layout: Locate new plantings where shown on Drawings, unless otherwise approved by the Engineer:
 - a. For all trees and large shrubs, stake their locations.
 - b. For all shrub & perennial masses, lay out the materials in their respective beds.
 - c. Contact the Engineer for field approval, providing at least three days' notice. If unnecessary, the field visit may be omitted at the Engineer's sole discretion.
 3. Planting Pits: Dig pits and prepare soil prior to moving plants to their respective locations for planting to ensure that they will not be unnecessarily exposed to drying elements or to physical damage:
 - a. Dig circular pits with sloped sides for all plants. Scarify sides and bottom of pits to eliminate glazed surfaces. Dig diameters of pits 2.5-3.0x greater than spread of roots or root balls.
 - b. For shrub planting beds, till entire bed area to a depth of 4-6", then excavate individual shrubs to their correct depth.

- c. Make depth of pits for trees and shrubs sufficient to accommodate roots. Refer to the plant installation details as shown in the landscape plans.
 4. Drainage Test at Tree Pits and Shrub Beds: Fill with 6" of water. Water shall drain completely within 24 hours.
 - a. Notify the Engineer in writing of areas not passing drainage test. Provide proposal and cost estimate for corrective Work.
 - b. Landscape Contractor is responsible for plant failure occurring as a result of inadequate drainage not reported to the Engineer.
 5. Setting Plants: Unless otherwise specified, plant all trees and shrubs in pits, centered at such a depth that finished grade level after settlement will be the same as that at which plant was grown:
 - a. Plant trees and shrubs upright and face to give best appearances or relationship to street and adjacent structures.
 - b. After placement, remove burlap from top 1/2 of root balls after planting. Remove synthetic burlap completely. Remove platforms, wire and surplus binding from entire plant. Bio-degradable plant containers shall be split, non-biodegradable containers removed.
 - c. Root systems of all containerized plants shall be split or crumbled by hand.
 - d. Place topsoil or prepared soil and compact carefully to avoid injury to roots and to fill all voids. When hole is nearly filled, add water as necessary and allow it to soak away.
 - e. Fill hole to finished grade and form a shallow saucer around each plant by placing a ridge of topsoil around edge of each pit. No soil is to cover the top of the rootball.
 - f. After soil settles, fill in with additional soil to level of finished grade. Trees shall be moved by their root balls, not their trunks.
 6. Soil Preparation: Use topsoil as specified herein or suitable existing soil thoroughly mixed with the soil amendments and/or plant starter mix as indicated on the landscape plans. Do not use poor soils, gravel, hard-pan or other soils injurious to plants. Thoroughly mix soil with amendments at rates specified by the manufacturers.
 7. Dispose of excess excavated soil at no additional cost to Owner.
- F. Guying, Staking & Wrapping:
1. The Contractor shall be responsible for installing staking, guying and/or protective wrapping as specified and/or detailed. Adverse site conditions such as Windy sites, shallow or unstable soils, bare root plantings or large specimen plantings will require staking or guying,
 2. Trunk protection, where required, shall be secured at the top and bottom of the trunk in a manner so as not to restrict or damage the bark. The Landscape Contractor will be responsible for removing all guying, staking and/or trunk protection at the end of the warranty.
 3. Staking and Guying: Ties made of approved material shall be attached directly to the stakes or may be attached to stakes by wire. In no case shall the wire extend around the tree trunk. Ties shall be attached loosely enough to allow 2-3" of play in the trunk. For drooping stems, ties shall be placed at the point of the stem at which the top can stand up on its own. Stakes shall be driven outside the root ball. For trees larger than 3" in caliper and for all evergreen trees, use ties attached to 3 guy wires and ground anchors. Ground anchors are to be driven at about a 45-degree angle to the ground and placed at 120- degree intervals around the trunk. Staking and guying shall further conform to the drawings.
- G. Pruning
1. Prune in accordance with current American National Standards (ANSI) for Tree Care Operations. Perform all pruning work in a manner consistent with the landscape design intent. Plants overhanging and blocking pedestrian and/or vehicular paths shall be pruned as needed to allow the desired clearance.
 2. Double leaders, dead branches and any branches damaged or broken during the planting process shall be pruned. This will be the only pruning allowed at planting. Pruning shall conform to American National Standard for Tree Care Operations, ANSI A300.

3. Trim hedges if indicated on plans. Only shear outer edges of hedges to maintain shape; do not shear between individual shrubs.
4. Trim Oaks, Honeylocusts & Elms while dormant to reduce disease risk. If such species are trimmed during non-dormant seasons, the contractor must seal immediately and completely all pruning wounds after each cut with an approved wound dressing.
5. Plants that flower before late spring shall be pruned immediately after flowering. Those that flower in summer or fall should be pruned in winter or spring before new growth emerges.
6. Other species may be trimmed throughout the year, except during leaf-out or during leaf drop.
7. Prune using scissor-style cutting devices, not anvil-style hand pruners, pole pruners or topers.

3.02 SOD, SEED & NATIVE SEED SOIL PREPARATION

- A. Finished Grading: Sodded and/or Seeded Areas: After subgrade has been prepared and topsoil furnished & placed by Section 31 00 00 and/or Section 31 05 00, Landscape Contractor shall do all final grading and lightly compact topsoil. Do not spread topsoil in a frozen or muddy condition. Apply fertilizer as herein specified. Prepare areas to form a level and loose seed bed. Lightly roll areas before final raking to locate & repair soft spots and mounds.
 1. Allow for compaction or settling of approximately 20 percent when spreading topsoil.
 2. Scarify and smooth areas where topsoil has not been removed. Remove all sticks, stones and rubbish.
 3. All weed growth in turf areas shall be removed prior to the beginning of work. Use of pre-emergent herbicides will be acceptable if approved by the Owner & the Engineer prior to use.
 4. Where sod is to be laid, lower areas adjacent to walks, drives and patios 1/2" to allow for sod thickness.
- B. Soil Improvements: Applying Fertilizer: Apply commercial lawn starter fertilizer at the manufacturer's rate to lawn areas being prepared for seeding.
- C. Dormant Seeding: No dormant seeding shall be performed unless approved by the Engineer prior to commencing work. If dormant seeding is done, or if lawns are planted late in the season and growing season ends prior to the end of the specified maintenance period, continue maintenance into the growing season of the following spring for the balance of the required maintenance period. All other maintenance requirements still apply, and the contractor shall be solely responsible for ensuring proper germination prior to completion of the project.

3.03 SEEDED TURF

- A. Season: Seed lawn areas during the seasons indicated in Part 3.01(A)(2).
- B. Inspection and Tests of Grass Seed: All seed must be Blue Tag Certified and accompanied by duplicate statement of vendors certifying that each container of seed delivered is fully labeled in accordance with Federal Requirement. No Bent or Poa Annua will be acceptable. Each seed lot shall be tested by State Seed and Testing Laboratory.
- C. Method of Seeding: Uniformly seed area with the specified mixture(s) and rate(s) indicated on the landscape plans. Sow with appropriate seeding equipment.
 1. Sow seed with a cultipacker, Brillion seeder, slit-seeder, drop- or broadcast-spreader, sowing half of seed in one direction and the other half at right angles to first sowing.
 2. Seeds to be within the top 1/4" of soil.
 3. Do not seed during stormy weather or if wind speeds exceed 12 MPH.

- D. Mulching: Marsh hay or threshed straw of oats, wheat or rye are acceptable. No canary reed grass. Mulch material must be free of matured seed or noxious weeds, clean, small grained, air dry, well-seasoned, and free of rot/mildew.
 - 1. Spread mulch uniformly in continuous blanket over all seeded areas using two 55 bales per acre or 2" depth, whichever is greater. Mulch should be stabilized either by anchoring tools or plastic netting.
 - 2. For slopes 4 to 1 or greater, in ditches or in problem swales, coordinate with the erosion control contractor to ensure proper fabric and/or mats are in place. See the erosion control plans for additional applications.
 - 3. Maintain mulched areas until grass is mowed. Provide protection against traffic and repair mulched areas when removed 01' bunched by wind or other causes.
 - 4. Hydro-mulching consisting of wood fiber mulch and soil stabilizing tackifier will be accepted as a no-cost alternate for tuff applications If approved by the Engineer prior to construction,
 - 5. Hydro-seeding will not be accepted.
- E. Cleaning & repair: Waste & excess material shall be promptly removed. Adjacent paved areas are to be cleaned, and any damage to adjacent turf areas shall be repaired as indicated on the landscape plans.
 - 1. Hydro-mulch overspray residue shall be immediately removed. It shall be the contractor's sole responsibility to repair or replace any damage to any site elements caused by hydro- mulching overspray.
- F. Watering: Seeded areas are to be watered daily to maintain adequate surface soil moisture for proper seed germination. Watering shall continue for not less than 30 days after seeding. Thereafter, apply 1/2" of water twice-weekly until final acceptance, as required in the absence of rain.

3.04 NATIVE SEEDED AREAS

- A. Native Seeded Areas are to be prepared, sown, established, maintained and/or otherwise installed according to the establishment procedures specified by the seed source. The Contractor shall provide a detailed outline of the specific installation & establishment processes for review and shall coordinate with the Owner and the Engineer for approval prior to installation.

3.05 WARRANTIES & MAINTENANCE

- A. Start of warranty & maintenance periods: All warranty & maintenance periods shall start upon notification of the landscape installation's Date of Substantial Completion (see 3.07(A)).
- B. Generally: Contractor shall supply a warranty I maintenance schedule to the Owner & the Engineer for review/approval prior to commencing planting. Contractor shall be responsible for all necessary maintenance equipment, materials, supply and labor to provide required levels of maintenance. Contractor to note pruning and/or shearing requirements in 3.01(G)(2.)
- C. Warranty & maintenance of Bluegrass seeded areas: Contractor will be required furnish and apply sufficient water to keep grass In good growing condition for a period of one full year after planting and shall do weeding, mowing and trimming as required. Prior to 60 days after seeding, repair all erosion damage caused by rain and re seed areas larger than 12" dia. where grass population is sparse. Mow grass as required; grass shall be mown to a height of 3", but no more than 40% of grass leaf shall be removed in any one cutting. Weed trimmers shall not be used at tree bases. Assume 24 mowings per season.
- D. Warranty & maintenance of native seeded areas (low-mow seed mix, wet seed mix, slope seed mix, upland seed mix, etc): Maintain seed mixes in good growing condition for a period of two (2) years after seeding, Maintenance procedures are to follow the recommended schedules & tasks as specified by the supplier of the specialty seed mixes.

After each of the first and second years of growth, re-seed areas larger than 12" dia. where seed population is sparse.

- E. Maintenance of Plantings: Water and maintain all plantings for a period of one year after planting. Supply & distribution of clean & contaminant-free water for landscape Irrigation is the responsibility of the contractor. Unless secured ahead of time through the Owner and/or General Contractor, assume that water will not be available on-site and that a hydrant meter rental & permit may be necessary. Contractor shall be responsible to supply all watering equipment, whether through the use of a tanker truck, hoses, sprinklers or combination thereof. If specified on the landscape plan, the contractor shall supply a temporary irrigation system and operate it as required for the specified duration.

3.06 INSPECTION AND ACCEPTANCE

- A. Date of Substantial Completion (DSC): Initial inspection of the substantially completed landscape installation will be made by the Engineer upon written notice requesting such inspection, submitted by Contractor at least five (5) days prior to the anticipated date. Note that the project landscape installation's DSC will likely vary from the remainder of project's DSC,
 - 1. The Engineer will visually inspect the project and note any omissions, errors or deficiencies in the exterior construction.
 - 2. A written punch list document of pending issues will be drafted and sent to the General Contractor for distribution to the appropriate contractor(s.)
 - 3. Issues contained in the punch list document will be resolved by the respective contractors within two weeks (14 days) of delivery, unless impossible due to season.
 - 4. Upon completion of all the punch list items, the Engineer may make a second site inspection to verify that all deficiencies have been corrected. This second inspection may be omitted at the Engineer's sole discretion.
- B. Secondary Inspection of lawns and plantings to determine completion of contract work, exclusive of possible replacement of plants, may be made by the Engineer prior to 60 days after installation, upon written notice requesting such inspection, submitted by Contractor at least five (5) days prior to anticipated date. Condition of lawns will be noted and determination made by the Engineer whether maintenance shall continue.
- C. Final Acceptance: After all inspections, Contractor will be notified in writing by the Engineer of acceptance of work of this Section, exclusive of possible replacement of plants subject to guarantee or any specified work which has not been completed which shall be subject to reinspection before acceptance.

END OF SECTION

SECTION 33 05 00

COMMON WORK RESULTS FOR UTILITIES

PART 1 - GENERAL

- A. This section provides information common to two or more technical site work specification sections or items that are of a general nature, and not included in other sections. This section applies to ALL site work, as applicable. Included are the following topics:

PART 1 - GENERAL

Scope
Related Work
Reference
Referenced Organizations
Referenced Documents
Quality Assurance
Safety Permits
Construction Limits
Equipment and Materials Furnished by Others
Provisions for Future Work
Work by Others
Submittals
Off Site Storage
Codes
Certificates and Inspections
Operation and Maintenance Data
Pavement Removal and Replacement

PART 2- MATERIALS

Barricades, Signs, and Warning Devices
Temporary Plastic Barrier Fencing

PART 3- EXECUTION

Maintenance of Site and Building Access/Egress
Continuity of Existing Traffic/Parking and Traffic Control
Protection and Continuity of Existing Utilities
Protection of Existing Work and Facilities
Stormwater/Excavation Water Management
Frost and Freezing Protection

1.02 RELATED WORK

- A. Applicable provisions of Division 01 govern work under this Section.
- 33 40 00 Storm Drainage Utilities

1.03 REFERENCED ORGANIZATIONS

- A. Applicable provisions of Division 01 shall govern all work under this section.
- B. Abbreviations of organizations referenced in these specifications are as follows:

AASHTO	American Association of State Highway and Transportation Officials
ACPA	American Concrete Pipe Association
ANSI	American National Standards Institute

ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWWA	American Water Works Association
AWS	American Welding Society
FHA	Federal Highway Administration
EPA	Environmental Protection Agency
NEC	National Electric Code
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
NSF	National Sanitation Foundation
OSHA	Occupational Safety and Health Administration
STI	Steel Tank Institute
UL	Underwriters Laboratories Inc.
WDNR	State of Wisconsin Department of Natural Resources
WISDOT	State of Wisconsin Department of Transportation

1.04 REFERENCED DOCUMENTS

- A. Where reference is made to the "SSHSC", it shall mean the pertinent sections of the State of Wisconsin, Department of Transportation, Standard Specifications for Highway and Structure Construction, current edition, and all supplemental and interim supplemental specifications. Where reference is made to the "SSSWC", it shall mean pertinent sections of the Standard Specifications for Sewer and Water Construction in Wisconsin, current edition. Where reference is made to the "Technical Standards", it shall mean the Wisconsin DNR Technical Standards current edition as published by the WDNR. Method of measurement and basis of payment sections in referenced documents shall not apply.

1.05 QUALITY ASSURANCE

- A. Provide materials and products as required by Individual specification sections. Refer to Section GC • General Conditions of the Contract regarding substitutions.
- B. Provide quality assurance testing and reporting as required by individual specification sections.

1.06 SAFETY

- A. Contractor is solely responsible for worksite safety.
- B. Perform all work in accordance with applicable OSHA, state and local safety standards.
- C. Contact Diggers Hotline at 1-800-242-8511 in accordance with statutory requirements. Request that non-member utilities and private utilities be located by the appropriate parties.
- D. Coordinate with owner and have private lines on-site to locate all private (non-public) utilities.

1.07 PERMITS

- A. Unless otherwise noted in the Contract Documents, Contractor shall be responsible for obtaining and paying for all permits and testing necessary to complete the work.

1.08 CONSTRUCTION LIMITS

- A. Construction Limits are generally confined to the property boundary as indicated on the drawings. In the absence of such a designation on the drawings confine work to the minimum area reasonably necessary to undertake the work as determined by the

Construction Representative. In no case shall construction activities extend beyond state property lines or construction easements.

- B. The Contractor shall restore all disturbed areas in accordance with the drawings and specifications. If plans and specifications do not address restoration of specific areas, these areas will be restored to pre-construction conditions as approved by the Construction Representative.

1.09 SUBMITTALS

- A. Refer also to General Conditions of the Contract and Division 01.
- B. Submit manufacturer's shop drawings, product data, samples, substitutions and operation and maintenance (O&M) data for approval as required by individual specification sections.
- C. Unless otherwise noted in 31 00 50- Civil General Requirements, provide 3 copies of each submittal. Submit to the ENGINEER unless otherwise directed by the Owner at the Pre-Construction Meeting.

1.10 OFF SITE STORAGE

- A. In general, the payments for materials stored off site will only be considered in instances where there is limited space available for storage on the site. Prior to bidding approval by the Construction Representative, together with the execution of a Storage Agreement will be required.

1.11 CODES

- A. Comply with the requirements of all applicable, local, state and federal codes.

1.12 CERTIFICATIONS AND INSPECTIONS

- A. Obtain and pay for all required sampling, testing, inspections, and certifications except those expressly listed as provided by the ENGINEER or other third party in the Contract Documents. Deliver originals of certificates and documents to the Construction Representative within 3 days; provide copies to the ENGINEER. Include copies of the certifications and documents in the O&M Manual.

1.13 OPERATIONS AND MAINTENANCE DATA

- A. All operations and maintenance data shall comply with the submission and content requirements specified under section General Requirements and Section 31 00 05 - Civil General Requirements.
- B. In addition to the general content specified under "General Requirements", supply the following additional documentation:
 - 1. Engineer and commissioning provider to define detailed operation and maintenance data requirements for equipment specifications added to this section.

1.14 PAVEMENT REMOVAL AND REPLACEMENT

- A. Pavement removal and replacement for utility installations shall conform to section 32 05 00 - Common Work Results for Exterior Improvements. The roadway or pavement section shall be replaced to match the existing section (material and thickness) or the Municipality's minimum roadway section (whichever is greater). Parking lot areas disturbed shall follow the proposed pavement details.

PART 2 - MATERIALS

2.01 BARRICADES, SIGNS, AND WARNING DEVICES

- A. Traffic barricades, traffic signs, and warning devices shall meet the requirements of applicable OSHA standards and the FHWA Manual of Uniform Traffic Control Devices (MUTCD).

2.02 TEMPORARY PLASTIC BARRIER FENCING

- A. UV stabilized high-density polyethylene barrier fence free of holes tears and other defects. Provide 4' tall fence in diamond or rectangular pattern. Fencing shall be "safety orange" color, unless otherwise noted.
- B. Posts for temporary plastic barrier fencing shall be 5' tall, minimum 12-gauge, painted metal posts.

PART 3 - EXECUTION

3.01 MAINTENANCE OF SITE AND BUILDING ACCESS/EGRESS

- A. Unless otherwise shown or directed, maintain existing access and egress to the facility throughout construction. Maintain ANSI A117 compliant access for disabled persons, delivery access, emergency vehicle access, and emergency egress. Do not interrupt access and egress without prior written approval from the Construction Representative.
- B. During utility installation, it is critical that a minimum of one lane of traffic be allowed to enter and exit the site at ALL TIMES.

3.02 CONTINUITY OF EXISTING TRAFFIC/PARKING AND TRAFFIC CONTROL

- A. Refer also to Section GR- General Requirements
- B. Do not interrupt or change existing traffic, delivery, or parking without prior written approval from the Construction Representative. When interruption is required, coordinate schedule with the Owner agency to minimize disruptions. When working in public right-of-way, obtain all necessary approvals and permits from applicable municipalities and WISDOT.
- C. When Contractor's activities impede or obstruct traffic flow, Contractor shall provide traffic control devices, signs and flaggers in accordance with other Contract Documents and the current version of the MUTCD, or as shown on the Drawings.

3.03 PROTECTION AND CONTINUITY OF EXISTING UTILITIES

- A. Verify the locations of any water, drainage, gas, sewer, electric, drainage, gas, sewer, electric, telephone/communication, fuel, steam lines or other utilities and site features which may be encountered in any excavations or other site work. All lines shall be properly underpinned and supported to avoid disruption of service.
- B. Do not interrupt or change existing utilities without prior written approval from the Construction Representative, affected utilities and users. Notify all users impacted by outages a minimum of 48 hours in advance of outage. Notification shall be provided in writing and describe the nature and duration of outages and provide the name and number of Contractor's foreman or other contact.
- C. Any service connections encountered which are not to be re-used shall be cut off at the limits of the excavation and capped in accordance with the requirements of applicable codes and any specifications governing such removals. In addition, the services shall be abandoned at the main per the demolition specifications and plans.

3.04 PROTECTION OF EXISTING WORK AND FACILITIES

- A. Verify the locations of, and protect, any signs, paved surfaces, buildings, structures, landscaping, streetlights, utilities, and all other such facilities that may be encountered or interfered with during the progress of the work. Take measures necessary to safeguard all existing work and facilities that are outside the limits of the work or items that are within the construction limits but are intended to remain. Report any damage to existing facilities to the Construction Representative immediately. Correct and pay for all damages.

3.05 STORMWATER/EXCAVATION WATER MANAGEMENT

- A. Control grading around structures, pitch ground to prevent water running into excavated areas.
- B. Pits, trenches within building lines and other excavations shall be maintained free of water.
- C. Provide trenching, pumping, other facilities required.
- D. Notify the ENGINEER if springs or running water are encountered in excavation; provide discharge by trenches, drains, pumping to point outside of excavation. Provide information to the ENGINEER of points and areas that water will be discharged. At the ENGINEER's option, the Contractor shall drain the spring to the storm sewer system by the use of field tile.
- E. Be responsible for control measures to prevent damage from flooding, erosion, and sedimentation to on-site and off-site areas.

3.06 FROST AND FREEZING PROTECTION

- A. Frost protection for all buried utilities carrying a liquid (e.g. storm sewer, sanitary sewer, watermain, etc.) shall be protected with insulation per Commerce Code 82.30. It is the Installing Contractor's obligation to ensure the pipe is insulated adequately in areas of potential low cover.
- B. All utilities buried with less than 6 feet of cover shall be reviewed for insulation by the installing contractor per Wisconsin Department of Safety and Professional Services SPS 382.30 Code.
- C. Insulation type, thickness, required width, and installation method shall meet the requirements of Commerce Code 82.30.

END OF SECTION

SECTION 33 40 00

STORM DRAINAGE UTILITIES

PART 1 - GENERAL

1.01 SCOPE

- A. The work under this section shall consist of providing all work, materials, labor, equipment, and supervision necessary to provide for the storm sewer work required in these specifications and on the drawings. This specification shall apply to all storm sewer work beginning at a point 5' outside of the building wall, unless otherwise specified, Included are the following topics:

PART 1 - GENERAL

Scope
Related Work
Reference
Reference Standards
Submittals
Provisions for Future Work
Record Drawings

PART 2- MATERIALS

General
Pipe (general)
Reinforced Concrete Pipe
HDPE Pipe (Solid Wall and Slotted)
Connections for Dissimilar Pipe Materials Manholes

PART 3- EXECUTION

Notification
Laying Pipe
Bedding/Initial Cover
Connections to Existing Structures
Leakage Testing
Sewer Televising
Abandon Sewer

1.02 RELATED WORK

- A. Applicable provisions of Division 01 shall govern all work under this section.

31 05 00	Common Work Results for Earthwork (Outside Building footprint)
31 23 16.13	Trenching
31 25 00	Erosion Control
33 05 00	Common Work Results for Utilities

1.03 REFERENCE

- A. Applicable provisions of Division 01 shall govern all work under this section.

1.04 REFERENCES

- A. Where these specifications do not cover portions of the work to be undertaken, the Standard Specifications for Sewer and Water Construction in Wisconsin, current edition, shall govern the work.

- B. American Society for Testing and Materials (ASTM):
 - C76-05b Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe
 - C443-05a Standard Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets
 - C507-05a Standard Specification for Reinforced Concrete Elliptical Culvert, Storm Drain, and Sewer Pipe
 - C877-02e1 Standard Specification for External Sealing Bands for Concrete Pipe, Manholes, and Precast Box Sections

1.05 SUBMITTALS

- A. Provide manufacturer's product information (cut sheets), shop drawings, and O&M information as indicated in Section 31 00 05- Civil General Requirements for storm sewer materials including:
 - 1. Pipe
 - 2. Fittings
 - 3. Structures
 - 4. Castings
- B. Provide reports documenting any required testing.

1.06 PROVISIONS FOR FUTURE WORK

- A. Construct sewer system in a manner that will facilitate future extension or connection.
- B. Review plans prior to installation and notify the Engineer If proposed design does not appear to accommodate future extension or connection.
- C. When drawings indicate future connection at a manhole or other structure, install a full length of pipe beyond the structure, providing plugged bell at terminal end of pipe. Provide marker board at terminal end of stubbed pipe.

1.07 RECORD DRAWINGS

- A. Refer to Section GR - General Requirements.
- B. Maintain record drawings that show the actual locations, sizes and types of utilities and other features encountered.
- C. Note any modifications to proposed sewer system size, location or elevation. Record any other deviations from the drawings.

PART 2 - MATERIALS

2.01 GENERAL

- A. Conform all materials to the size and type shown on the plans or as called for in the specifications and to applicable Laws, Codes, and Ordinances.
- B. All products and materials are to be new, undamaged, clean, and In good condition. Existing products and materials are not to be reused unless specifically indicated.
- C. Be responsible for the safe storage and handling of all materials utilized in the work. Store all materials in areas designated by the Construction Representative in cooperation with the Owner.
- D. Perform all work in accordance with any applicable manufacturer's instructions.

2.02 PIPE (GENERAL)

- A. Provide the size, type and class/schedule of pipe as indicated on the drawings.
- B. Use only pipe supplied from the same manufacturer, and of the same type, unless otherwise specified or approved in advance by the Engineer.
- C. When applicable, only pipe, joints, material and installation approved by Wisconsin Department of Natural Resources and/or the Wisconsin Department of Safety and Professional Services (SPS) for the intended use in the State of Wisconsin shall be used.

2.03 REINFORCED CONCRETE PIPE

- A. Pipe and fittings shall conform to ASTM C-76 for circular pipe and ASTM C-507 for elliptical pipe. Unless otherwise specified, provide Class III for circular pipe and Class HE-III for elliptical pipe.
- B. Joints for reinforced concrete pipe shall be bell and spigot or tongue and groove. Joints shall be provided with rubber gaskets conforming to ASTM C433. Joints for elliptical pipe shall be provided with trowelable impervious bituminous joint sealer that is manufactured for sealing reinforced concrete sewer pipe joints.
- C. When required, external sealing bands shall meet the requirements of ASTM C877 (Type II), and shall be Mar Mac Mac Wrap, or approved equal.

2.04 HDPE PIPE (SOLID WALL AND SLOTTED)

- A. Conform to ASTM-D-3350 for PE material with a cell classification of 335434C or better. Pipe shall be thermal butt fusion in accordance with manufacturer's recommendation.
- B. Slotted HDPE pipe shall be ADS N12 with AASHTO Class II perforations, or approved equal.

2.05 CONNECTIONS FOR DISSIMILAR PIPE MATERIALS

- A. Where new sewer connects to and existing dissimilar pipe, the connection shall be made with a no hub type couplings meeting the requirements of CISPI 310. Couplings shall have neoprene gaskets with stainless steel shield, and multiple stainless-steel clamps with worm gear tightening device. The couplings shall be made specifically for the type and size of pipe materials being connected. Couplings shall be Fernco Husky or approved equal.

PART 3 - EXECUTION

3.01 NOTIFICATION

- A. Contractor, prior to excavation work, shall notify all utilities, governmental agencies, or entities, known to, or which can reasonably be assumed to, have above or below ground pipe, conduit cables, structures or similar items within limits of project, to locate and mark location of such items. The Contractor shall expose potential pipe conflicts prior to installation of sewers to allow for any field changes to the design to be made.

3.02 LAYING PIPE

- A. Install all pipe in accordance with ASTM specifications which pertain to the specified type of pipe material and the installation situation.
- B. Do not use any pipe or fittings cracked in cutting or handling or otherwise not free from defects.
- C. Clean all pipe of any dirt and/or debris both inside and out prior to placing in the trench.

- D. Make joints in accordance with manufacturer's directions with due care to avoid damaging pipe and/or disturbing previously laid pipe.
- E. Cut pipe only according to manufacturer's directions.
- F. Lay all sewer pipes to horizontal alignment and grade shown on the plans with bell ends up hill. Establish and maintain horizontal alignment using total station, transit or theodolite. Use pipe laser or level to establish and maintain grade of pipe. Discrepancies from the required horizontal alignment or grade at any location shall not be greater than 0.10' or 0.05', respectively.
- G. Do not exceed specified trench widths.

3.03 BEDDING/INITIAL COVER

- A. Provide bedding and initial cover in accordance with the applicable requirements of Section 31 23 16.13- Trenching.
- B. Storm sewer and sewer services shall be provided with 4" of bedding material and 12" of initial cover material (both measured at the bell of the pipe). Crushed Stone Bedding shall be used for both bedding and initial cover.

3.04 CONNECTIONS TO EXISTING STRUCTURES

- A. Make all necessary openings into existing structures or sewers including the reconstruction of existing Inverts or benches, as necessary. Patch all openings permanently watertight with concrete brick and mortar, hydraulic cement, or flexible watertight boots.

3.05 LEAKAGE TESTING

- A. Storm sewers may be videotaped by Owner. If video recording reveals a defect that requires repair, Contractor shall reimburse Owner for cost of videotaping that section of pipe. All storm sewers with defects, including but not limited to cracked or deformed pipe, misaligned joints, unsealed lift holes, and incorrect grade lines, as identified through videotaping, shall be re-laid or shall be paid for at 50% of the price bid. Relaying the pipe or reducing payment shall be at Owner's discretion.

3.06 SEWER TELEVISIONING

- A. Storm sewers may be videotaped by Owner. If video recording reveals a defect that requires repair, Contractor shall reimburse Owner for cost of videotaping that section of pipe. All storm sewers with defects, including but not limited to cracked or deformed pipe, misaligned joints, unsealed lift holes, and incorrect grade lines, as identified through videotaping, shall be re-laid or shall be paid for at 50% of the price bid. Relaying the pipe or reducing payment shall be at Owner's discretion,

3.07 ABANDONMENT OF EXISTING STORM SEWER FACILITIES

- A. Where indicated on the plans, existing sewer to be left in place shall be abandoned in accordance with Section 3.2.24 of the Standard Specifications for Sewer & Water Construction (with the exception of paragraph B). Sewer shall not be abandoned until existing services have been reconnected to the replacement sewer. Abandoning sewers is considered incidental to the construction.
- B. In paved areas or current/future building pad areas, existing storm sewer facilities are required to be abandoned as follows:
 - 1. Remove existing pipes or fill them with sand or grout and seal ends with a minimum 2-foot thick grout plug.

2. Remove existing inlets, catch basins, and manholes to at least 4 feet below finished grade. Provide a minimum 6-inch hole in the bottom of the structure and fill the remaining portion with bedding stone,

END OF SECTION

SECTION 34 41 16

TRAFFIC CONTROL EQUIPMENT

PART 1 - GENERAL

1.01 SCOPE

- A. The work under this section consists of providing all work, materials, labor, equipment, and supervision necessary to provide and construct erosion control measures necessary to protect property and the environment. Included are the following topics:

- PART 1 – GENERAL

- Scope

- Reference Standards

- Submittals

- Permits

- PART 2 – Materials

- General

- Signs

- PART 3 – Execution

- General

1.02 REFERENCE STANDARDS

- A. Applicable provisions of Division 01 shall govern all work under this section.
- B. Wisconsin Manual on Uniform Traffic Control Devices for Streets and Highways (WMUTCD).
- C. Wisconsin Department of Transportation (WisDOT) Standard Specifications for Highway and Structure Construction (Latest Edition).

1.03 SUBMITTALS

- A. Submit manufacturer's shop drawings, product data, samples, substitutions and operation and maintenance (O&M) data for approval.

1.04 PERMITS

- A. Unless otherwise noted in the Contract Documents, Contractor shall be responsible for obtaining and paying for all permits necessary to complete the work.

PART 2 - MATERIALS

2.01 GENERAL

- A. Furnish drums, barricades, lights and other devices from WisDOT Approved Products List (APL)

2.02 SIGNS

- A. Provide signs with layouts conforming the WMUTCD
- B. If the plans do not specify the size, provide signs as large or larger than the size the WMUTCD specifies for higher-speed locations. Smaller signs may be approved by the Engineer.

PART 3 - EXECUTION

3.01 GENERAL

- A. Provide and maintain traffic control devices located where the plans show or engineer directs to maintain a safe work zone throughout the contract duration. Relocate as required to accommodate changing work operations
- B. Review signs and traffic control devices for location, position, visibility, and appropriateness for job conditions immediately after each setup. Do additional reviews as necessary to provide a safe work zone and ensure signs and traffic control devices conform to the contract. Perform work zone reviews from the direction of approaching traffic.
- C. Contractors shall be responsible for providing flaggers to direct traffic safely within the construction zone, as directed by the Engineer.
- D. The Engineer may revise signage to maintain a safe work zone.

END OF SECTION