Frazier Point Pier & Plaza

City of Fond du Lac

Specifications, Proposal and Contract

File Number: 2012-043
September 11, 2012

Prepared By:

City of Fond du Lac
Department of Public Works
Parks Division
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ADVERTISEMENT FOR BIDS
Frazier Point Pier and Plaza
CITY OF FOND DU LAC, WISCONSIN
File No. 2012-043

NOTICE IS HEREBY GIVEN that sealed bids will be received in the City Administrative Office at the City/County Government Center (CCGC), 160 South Macy Street, P.O. Box 150, Fond du Lac, Wisconsin, until **2:00 PM, local time, on Tuesday, September 11, 2012** at which time bids will be publicly opened and read aloud in the City Manager's Conference Room, 4th Floor of the CCGC for the contract identified as **"SEALED BID – Frazier Point Pier and Plaza".** The project includes but is not limited to the following quantities of work:

FURNISH, INSTALL AND CONSTRUCT	BASE BID	ALT BID
• *Silt Fencing(LF)*	*25*	*163*
• *Silt Curtain (LF)*	*329*	*NA*
• *Concrete Pavement(SF)*	*2,334*	*900*
• *Thickened Edge Concrete Walk(LF)*	*0*	*38*
• *Asphalt Pavement(SY)*	*0*	*1,900*
• *Rip Rap stone(SY)*	*350*	*0*
• *Block shoreline stone(SY)*	*62*	*0*
• *1 Flagpole(LS)*	*1*	*0*
• *36" Pipe Railing(LF)*	*48*	*0*
• *34" ADA Pipe Railing(LF)*	*24*	*0*
• *Concrete/Overlooks(CY)*	*6*	*2*
• *Stone Mulch (CY)*	*5*	*4*

The quantities listed in the "ADVERTISEMENT FOR BIDS" are preliminary estimates and subject to revision.

The plans, specifications, and contract documents may be examined and obtained from the City Administrative offices, City/County Government Center, 160 South Macy Street, P.O. Box 150, Fond du Lac, WI 54936-0150.

No bid will be opened unless the "**Bidder's Proof of Responsibility**" for 2012 is filed at least (5) five days before the scheduled time for opening of bids. Reference is made to Section 66.0901(2) and (3) Wisconsin Statutes. The Director of Public Works decision as to qualifications shall be final.

All bids shall be prepared on the proposal forms provided in the specifications and shall remain attached thereto, and shall be addressed to The Department of Public Works, P.O. Box 150, Fond du Lac, Wisconsin. Each bid envelope shall be properly identified on the face thereof **"SEALED BID – Frazier Point Pier and Plaza".** No bid shall be withdrawn for a period of (30) thirty days after the opening of said bids, without the consent of the Director of Public Works. The City of Fond du Lac may reject any or all bids on any basis and without disclosure of any reason. The failure to make a disclosure shall not result in accrual of any right, claim or cause of action against the City. The City also reserves the right to waive any formalities or informalities in bidding, and to select the bid that, in its opinion, will best serve the interests of the City.

Bidder's attention is called to the fact that this contract includes a "Disclosure of Ownership" form. Section 66.0903 (12)(d) of Wisconsin Statutes requires that each bidder complete this form. No bid will be considered unless the prospective bidder has completed the form entitled "Disclosure of Ownership".

Each proposal shall be accompanied by a certified check, or bank draft, payable to the City of Fond du Lac, or satisfactory bid bond, in the amount of 5% of the gross bid as a guarantee that if the bid is accepted as the successful bid, such successful bidder will execute and file the proposed contract and performance bond within ten (10) days after notice of award of contract.
This project is subject to Prevailing Wage Rate Determination per Wisconsin Statute 66.0903

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Silt Fence	No. 1056
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INSTRUCTIONS TO BIDDERS - PROPOSAL REQUIREMENTS

NOTICE TO CONTRACTORS

"The Advertisement for Bids" constitutes an official notice to Contractors stating the time and place for the submission of sealed proposals upon designated projects or proposed work. This notice will contain a description of the proposed work, instructions to bidders regarding proposal forms, proposal guaranty, plans, specifications and the reservation of the right of the Owner to reject any or all bids.

CONTENTS OF PROPOSAL FORMS

The owner will furnish bidders with proposal forms which will state the location and description of the contemplated construction, the estimated quantities of the various items of work to be performed and materials to be furnished, for which unit bid prices are asked. The proposal form will state the time in which the work must be completed, the amount of the proposal guaranty which must accompany the proposal, and will contain special provisions or requirements which vary from or are not contained in these specifications. All papers bound with or attached to the proposal forms are necessary parts thereof and must not be detached.

INTERPRETATION OF ESTIMATES

An estimate of quantities of work to be done and materials to be furnished under these specifications is given in the proposal. It is the result of careful calculations and is believed to be correct, but it is given only as a basis for comparison of proposals and the award of the contract. The Owner does not expressly or by implication agree that the actual quantities involved will correspond exactly therewith; nor shall the bidder plead misunderstanding or deception because of such estimate of quantities, or of the character, location, or other conditions pertaining to the work. Payment to the Contractor will be made only for the actual quantities of work performed or materials furnished in accordance with the plans and specifications and it is understood that the quantities may be increased or diminished as hereinafter provided without in any way invalidating the unit bid prices.

EXAMINATION OF PLANS, SPECIFICATIONS, SPECIAL PROVISIONS, SITE OF WORK

The bidder is required to examine carefully the site of the proposed work, the proposal, plans, specifications, and contract forms. He shall satisfy himself as to the character, quality, and quantities of work to be performed, materials to be furnished, and as to the requirements of these specifications, special provisions, and contract. The submission of a proposal shall be prima facie evidence that the bidder has made such an examination.

Any information shown on the plans as to the soil or material borings or tests of existing materials is for the convenience of the Contractor.

The information is not guaranteed, and no claims for extra work or damages will be considered if it is found during construction that the actual soil or material conditions vary from those indicated by the borings.

PREPARATION OF PROPOSAL

The bidder must submit his proposal on the forms furnished by the Owner. All blank spaces in the proposal forms must be correctly filled in where indicated for each and every item for which a quantity is given, and the bidder must state the prices (written in ink) for which he proposes to do each item of the work contemplated or furnish each item of the material required. In case of conflict between the unit price stated and the extension for that item, the unit price will govern.

A proposal submitted by an individual shall be signed by the bidder or by a duly authorized agent. A proposal submitted by a partnership shall be signed by a member or by a duly authorized agent thereof. A proposal submitted by a corporation shall be signed by an authorized officer or duly authorized agent of such corporation. The required signatures shall in all cases appear in the space provided therefore on the proposal.

REJECTION OF PROPOSAL

Proposals containing any omission, alterations of form, additions or conditions not called for, conditional or alternate bids unless called for, incomplete bids, or proposals otherwise regular which are not accompanied by a certified check or acceptable collateral will be considered irregular and may be rejected. The Owner reserves the right to waive technicalities as to changes, alterations, or reservations, and make the award to the best interest of the Owner.

PROPOSAL GUARANTY

Each separate proposal shall be accompanied by a certified check or acceptable collateral in the amount of five (5%) percent of the total amount bid, made payable to the Owner. A bid bond in lieu of a certified check will be acceptable.

DELIVERY OF PROPOSAL

Each proposal submitted shall be placed in a sealed envelope plainly marked with the project name, and name and address of the bidder on the outside. When sent by mail, preferably registered, the sealed proposal, marked as indicated above, should be enclosed in an additional envelope. No proposal will be considered unless filed on before the time and at the place designated in the advertisement or instructions to bidders.

WITHDRAWAL OF PROPOSALS

Any bidder, upon his or his authorized representative's written request, will be given permission to withdraw his proposal not later than the time set for opening thereof. At the time of opening of the proposals, when such proposal is reached, it will be returned to him unread.

PUBLIC OPENING OF PROPOSALS

Proposals will be publicly opened and read on the date and at the hour and place set in the advertisement or notice to the Contractor. Proposals received after the time set for the opening will be returned to the bidder unopened.

COMPETENCY OF BIDDERS

Each bidder shall furnish the Owner with satisfactory evidence of his competency to perform the work contemplated. The Owner reserves the right to reject a bid if the bidder has not submitted a statement of his qualifications prior to the date of the opening of the bids.

PUBLIC WORKS CONTRACT WAGE RATE PROVISION

The bidder's attention is called to the requirements, stated in the General Specifications section of Legal Relations, that the Contractor submit a certified copy of his payroll upon demand of the City at any time during the life of the contract.

The bidder shall note that under Wisconsin Statutes Subsection 66.0903(3)(f) a copy of the wage rates

determination issued for this project must be posted in at least one conspicuous and easily accessible place at the site of the project. It shall be the responsibility of the successful bidder under this contract to make such posting as required above. Each contractor shall be fully responsible for providing a copy of the prevailing wage rates to each of his subcontractors on this project.

A copy of the prevailing wage rates is attached to these specifications.

Any dispute and/or controversy regarding the proper classification of any laborer, worker or mechanic employed on this project shall be referred to the Department of Commerce (DOC) for final resolution and disposition.

Any trade or occupation not specifically listed in the prevailing wage rates attached to these specifications shall be brought to the attention of the City who will then request from the Department of Commerce (DOC) the applicable prevailing wage rate.

Any employee having a complaint involving a violation of any provision of S.66.0903(3) Statutes, Chapter Ind. 90 of the Wisconsin Administrative Code or any applicable local ordinance shall be provided with a copy of DOC's "Prevailing Wage Rate Complaint Form", a copy of which is included in these specifications.

Also Subsection 66.0903(3)(h) requires that upon completion of the project and prior to final payment, each Contractor must file with the municipality an affidavit stating that he has complied fully with the provisions and requirements of the wage rate determination and that he has received evidence of compliance from each of his agents and subcontractors. The Owner or City will not make final payment of this contract until the successful bidder has furnished the City with such evidence of compliance.

DISCLOSURE OF OWNERSHIP

The bidder's attention called to the document in this proposal identified as "Disclosure of Ownership". A Contractor submitting a bid to, or completes negotiations with, a state agency or municipality 103.49, Stats. such Contractor shall disclose all information required on the subject document. This document shall be signed and dated by the Contractor. **THIS CERTIFICATE MUST BE SIGNED BY EACH BIDDER WHETHER OR NOT IT APPLIES TO THEM. Our compliance with this form has been poor in the past year, so please pay special attention to this matter.**

NOTICE TO PROCEED

Contractor shall commence work within ten (10) days after issuance of the written NOTICE TO PROCEED and shall diligently prosecute the work to final completion, ready for use, without delays and as expeditiously as possible.

TAX

Each bid shall include all taxes in effect at the time the bid is submitted. Bidders who are uncertain as to what items are subject to tax, or who require further explanation or clarification, are requested to contact the Wisconsin Department of Revenue, Madison, Wisconsin.

PROPOSAL

Frazier Point Pier and Plaza

FOND DU LAC, WISCONSIN

Director of Public Works
City/County Government Center
P.O. Box 150
Fond du Lac, WI 54936-0150

The undersigned, having examined the Plans, Specifications, Contract documents, Special Provisions and the site of the work does hereby submit the following Proposal to do and perform all of the work for the completion of the designated projects, all in accordance with the applicable specifications and approved plans for the work, together with all standard and special designs that may be designated on such Plans and Special Provisions.

The undersigned bidder, if awarded the Contract, agrees to begin work not later than ten (10) days after the date of written notification from the Director of Public Works to do so, and to complete same in _____ days in accordance with said specifications.

The undersigned bidder does hereby declare and agree to be bound, and to perform the work all in accordance with the terms, conditions and requirements of the foregoing Proposal, Contract, Applicable Specifications, Special Provisions and the Plans and Working Drawings. The Applicable Specifications and all Plans and Working Drawings are made a part hereof as fully and completely as if attached hereto in detail.

Proposal Submitted By:

_____
(Bidder)

of_____

_____

Sole Trader, or Co-Partner or Corporation

By_____
(Bidder must sign on this line)

_____Title

If a Corporation, answer the following:

_____
Incorporated under the laws of what state?

SCHEDULE OF PRICES

CONTRACT 2012-043
FRAZIER POINT PIER AND PLAZA
Fond du Lac, Wisconsin *Bids will be received until 2:00 PM September 11, 2012*

TO: City Administrative Office: City/County Government Center (CCGC),
160 S. Macy St. P.O. Box 150, Fond du Lac, Wisconsin

1. The undersigned, having familiarized himself with the Contract Documents including Advertisement for Bids, Instructions to Bidders, Schedule of Prices and Proposal, General Specifications, Contract, Performance Bond, Bid Bond, Special Provisions, Addenda and Exhibits issued and attached to the specifications on file at City Administrative Offices, 4th Floor, City County Government Center, 160 South Macy Street, Fond du lac, Wisconsin hereby proposes to furnish all of the labor, materials, necessary tools, expendable equipment and all utility and transportation services necessary to perform and complete, in a workmanlike manner, Frazier Point Pier and Plaza, all in accordance with the plans and specifications as prepared by Schreiber/Anderson Associates, including addendas issued thereto, Nos. _____.

Contract 2012-043 is a unit price contract. The Contractor agrees to furnish all labor, equipment, and materials in accordance with the plans and specifications for the construction and installation of bid items. The Bidder agrees to perform all the work described in the Contract Documents for the following unit prices:

BASE BID

BID ITEM	BID ITEM DESCRIPTION	CONTRACT QTY.	UNIT	UNIT PRICE	TOTAL PRICE
1	Mobilization	1	LS		
2	Silt Fence	25	LF		
3	Silt Curtain	1	LS		
4	Track Mat	1	EA		
5	Site Clearing	1	LS		
6	Demolition and Misc. Removal	1	LS		
7	Earthwork	1	LS		
8	Concrete Pavement	2334	SF		
9	Accessible Curb Ramp	1	EA		
10	Overlook Concrete Slab	5.5	CY		
11	Rip Rap Stone	350	SY		
12	Block Stones	62	SY		
13	Pipe Railing-36"	48	LF		
14	Pipe Railing-34"	24	LF		
15	Flagpole Base and Installation	1	LS		
16	Not Used	-	-		
17	Boulder Placement	1	LS		
18	Stone Mulch	4.5	CY		
19	Planting Soil Mix	20	CY		
20	Engineered Soil	40	CY		
21	Sidewalk Flume	1	LS		

Computed Total Base Bid Contract (Items 1 - 21) $_____

SCHEDULE OF PRICES

Total Base Bid Written _____

ALTERNATE BID ITEMS

ITEM NO.	BID ITEM DESCRIPTION	CONTRACT QTY.	UNIT	UNIT PRICE	TOTAL PRICE
Alt 01	Silt Fence	163	LF		
Alt 02	Site Clearing	1	LS		
Alt 03	Demolition and Misc. Removal	1	LS		
Alt 04	Earthwork	1	LS		
Alt 05	Concrete Pavement	900	SF		
Alt 06	Accessible Curb Ramp	1	EA		
Alt 07	Thickened Edge Walk	105	LF		
Alt 08	Concrete Light Bases	2	CY		
Alt 09	Asphalt Pavement	390	SY		
Alt 10	Wheel Stops	6	EA		
Alt 11	Seeded Lawn	250	SY		
Alt 12	Pavement Markings	500	LF		
Alt 13	Signs	3	EA		
Alt 14	Bench Seating	5	EA		
Alt 15	Not Used	-	-		
Alt 16	Boulder Placement	1	LS		
Alt 17	Stone Mulch	4	CY		
Alt 18	Planting Soil Mix	20	CY		
Alt 19	Tree Stabilization (9 posts)	3	EA		
Alt 20	Salix purpurea 'Nana'	22	EA		
Alt 21	Carpinus caroliniana	4	EA		
Alt 22	Salix albo 'Tristis'	3	EA		
Alt 23	Rugosa rosa 'Alba'	27	EA		
Alt 24	Perovskia atriplicifolia	19	EA		
Alt 25	Panicum virgatum 'Prairie Fire'	37	EA		
Alt 26	Rudbeckia fulgida 'Goldsturm	26	EA		
Alt 27	Sporobolus heterolepsis	15	EA		

Total Base Bid (Items 1-21) $_____

Total Alternate Bid (Items 1-27) $_____

Total Bid with All Alternates Written _____

SCHEDULE OF PRICES

Addendums Received _____

2. Accompanying this Proposal is a _____, in the
(Certified Check, Bond, Bank Draft)
amount of _____ Dollars ($_____),
as required by the Advertisement for Bids.

3. I hereby certify that all statements herein are made on behalf of

_____

Name & Address of Corporation, Partnership or Person submitting same

a corporation organized and existing under the laws of the State of _____; a partnership consisting of _____

; an individual trading as _____

State of _____; that I have examined and carefully pr PC-5a
Proposal from the plans and specifications and have checked the same in d... ...
submitting this Proposal; that I have full authority to make such statements and submit this Proposal in (its)(their)behalf; and that the said statements are true and correct.

Signature: _____

Sworn & subscribed to before me this ____ day of _____ 20 _____
Title (if any): _____

Notary Public or other officer authorized to administer oaths.

My commission expires _____

NOTE: Bidders should not add any conditions or qualifying statements to the Proposal, as otherwise the Proposal may be declared irregular as being

LIST OF SUBCONTRACTORS

Pursuant to Section 66.29(7), Wisconsin Statutes, the bidder as part of his proposal, submits this full and complete list of all subcontractors and the class of work to be performed by each. (If there will be no subcontractors on the work, the bidder should note "None" below).

NAME OF SUBCONTRACTORS	CLASS OR ITEM OF WORK

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

_____

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 engineer 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 character and competence. The contractor shall not sublet, assign, transfer or convey, 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 Director of Public Works.

CONTRACT UNIT PRICES TO BE USED IN COMPUTING PAYMENT FOR AUTHORIZED EXTRA OR FORCE ACCOUNT WORK

CITY OF FOND DU LAC, WISCONSIN

NOTE: The following unit prices are agreed upon as the prices to be used in computing any extra or force account work authorized by the Engineer on this contract.

ITEM NO.	ITEM DESCRIPTION	UNIT PRICE
1.	Grader and Operator	$_____
2.	End Loader (Rubber) and Operator	$_____
3.	End Loader (Track) and Operator	$_____
4.	Backhoe and Operator	$_____
5.	Truck and Operator (5 yard)	$_____
6.	Truck and Operator (10 yard)	$_____
7.	Compressor and Air Tools	$_____
8.	Mechanical Tamper	$_____
9.	Concrete Saw	$_____
10.	Rubber Tire Roller and Operator	$_____
11.	Vibrating Screed	$_____
12.	Crushed Aggregate Sub-base (tons)	$_____

Any trades or classes of labor other than the operators of the equipment shown will follow the pertinent rates set forth in the wage rates attached to these specifications.

AFFIDAVIT OF BIDDER

STATE OF WISCONSIN)
) SS
CITY OF FOND DU LAC)

Pursuant to Section 66.09(7), Wisconsin Statutes,_____

_____
(Name of person signing this affidavit)

being duly sworn, deposes and says that he is the duly authorized representative of_____

_____ bidder for doing work or labor or the
(Name of person, firm, or corporation submitting bid)

material furnishing of under the proposal of which this affidavit is a part, and that the 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 City of Fond du Lac represented by the Common Council.

_____
(Signed by bidder or his authorized representative)

Subscribed and sworn to before me

this_____day of_____20_____

_____
NOTARY PUBLIC

My Commission Expires:_____

100% PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, That we, _____ as Principal, and _____, a corporate surety authorized to transact business in the State of Wisconsin, as Surety, are held and firmly bound unto City of Fond du Lac hereinafter called the "Owner", in the penal sum of _____ (_____), lawful money of the United States, for the payment of which sum well and truly be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

The condition of this obligation is such that whereas the Principal has executed the attached agreement dated _____ for the _____

_____

Now, Therefore, if the attached Agreement is executed on behalf of the Owner, and if the Principal shall well and truly keep, do and perform each and every matter and thing in the foregoing written contract set forth and specified to be by said Principal kept, done and performed at the time and in the manner in said contract specified, and shall pay over, make good and reimburse to the above named obligee all losses and damages which said obligee may sustain by reason of the failure of default of the said Principal, and shall pay to each and every person or party entitled thereto, all claims for work or labor performed and materials furnished, used or consumed for, in or about the work covered by said contract, including, without limitation because of specific enumeration therein, all of the items included in Section 779.14 Wisconsin Statutes, all as provided in said contract, then this obligation shall be void; otherwise to be and remain in full force and effect.

And the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the agreement or to the work to be performed thereunder or the specifications accompanying the same shall in any way affect its obligations on this bond, and it does hereby waive notice of any such obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration, or addition to the terms of agreement to the work or to the specifications.

IN WITNESS WHEREOF, the above bounded parties have executed this instrument in __2__original counterparts, under their several seals this _____day of _____, 2012, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

_____(SEAL)

In Presence Of: (Individual Principal)

_____ _____

(Business Address)

_____ _____

(Address)

_____(SEAL)

_____ (Individual Principal)

_____ _____

(Address) (Business Address)

_____

_____

(Corporate Seal)

ATTEST: _____

(Business Address)

_____ By_____

(Affix Corporate Seal)

Title:_____

_____

(Corporate Surety)

ATTEST: _____

(Business Address)

_____ By_____

(Affix Corporate Seal)

Title:_____

Approved:_____ 20_____

_____

City Manager

State of Wisconsin
Department of Workforce Development
Equal Rights Division
Labor Standards Bureau

Disclosure of Ownership

Notice required under Section 15.04(1)(m), Wisconsin Statutes. The statutory authority for the use of this form is prescribed in Sections 66.0903(12)(d) and 103.49(7)(d), Wisconsin Statutes. The use of this form is mandatory. The penalty for failing to complete this form is prescribed in Section 103.005(12), Wisconsin Statutes. Personal information you provide may be used for secondary purposes

(1) On the date a contractor submits a bid to or completes negotiations with a state agency or local governmental unit, on a project subject to Section 66.0903 or 103.49, Wisconsin Statutes, the contractor shall disclose to such state agency or local governmental unit the name of any "other construction business", which the contractor, or a shareholder, officer or partner of the contractor, owns or has owned within the preceding three (3) years.

(2) The term "other construction business" means any business engaged in the erection, construction, remodeling, repairing, demolition, altering or painting and decorating of buildings, structures or facilities. It also means any business engaged in supplying mineral aggregate, or hauling excavated material or spoil as provided by Sections 66.0903(3), 103.49(2) and 103.50(2), Wisconsin Statutes.

(3) This form must ONLY be filed, with the state agency or local governmental unit that will be awarding the contract, if **both (A) and (B) are met**.

(A) The contractor, or a shareholder, officer or partner of the contractor:

(1) Owns at least a 25% interest in the "other construction business", indicated below, on the date the contractor submits a bid or completes negotiations.

(2) Or has owned at least a 25% interest in the "other construction business" at any time within the preceding three (3) years.

(B) The Wisconsin Department of Workforce Development (DWD) has determined that the "other construction business" has failed to pay the prevailing wage rate or time and one-half the required hourly basic rate of pay, for hours worked in excess of the prevailing hours of labor, to any employee at any time within the preceding three (3) years.

Other Construction Business

Name of Business			
Street Address or P O Box	City	State	Zip Code
Name of Business			
Street Address or P O Box	City	State	Zip Code
Name of Business			
Street Address or P O Box	City	State	Zip Code
Name of Business			
Street Address or P O Box	City	State	Zip Code

I hereby state under penalty of perjury that the information, contained in this document, is true and accurate according to my knowledge and belief.

Print the Name of Authorized Officer			
Signature of Authorized Officer	Date Signed		
Name of Corporation, Partnership or Sole Proprietorship			
Street Address	City	State	Zip Code

If you have any questions call (608) 266-0028

State of Wisconsin
Department of Workforce Development
Equal Rights Division

Prime Contractor Affidavit of Compliance With Prevailing Wage Rate Determination

Authorization for this form is provided under Sections 66.0903(9)(c), 66.0904(7)(c) and 103.49(4r)(c) Wisconsin Statutes.
The use of this form is mandatory. The penalty for failing to complete this form is prescribed in Section 103.005(12), Wisconsin Statutes.
Personal information you provide may be used for secondary purposes [Privacy Law, s. 15.04(1)(m), Wisconsin Statutes].

This form must **ONLY** be filed with the **Awarding Agency** indicated below.

State Of))SS County Of)	Project Name	
	DWD Determination Number	Project Number (if applicable)
	Date Determination Issued	Date of Contract
	Awarding Agency	
	Date Work Completed	

After being duly sworn, the person whose name and signature appears below hereby states under penalty of perjury that

- **I am** the duly authorized officer of the corporation, partnership, sole proprietorship or business indicated below and have recently completed all of the work required under the terms and conditions of a contract with the above-named awarding agency and make this affidavit in accordance with the requirements set forth in Section 66.0903(9)(c), 66.0904(7)(c) or 103.49(4r)(c), Wisconsin Statutes and Chapter DWD 290 of the Wisconsin Administrative Code in order to obtain FINAL PAYMENT from such awarding agency.
- **I have** fully complied with all the wage and hour requirements applicable to this project, including all of the requirements set forth in the prevailing wage rate determination indicated above which was issued for such project by the Department of Workforce Development on the date indicated above.
- **I have** received the required affidavit of compliance from each of my agents and subcontractors that performed work on this project and have listed each of their names and addresses on page 2 of this affidavit.
- **I have** full and accurate records that clearly indicate the name and trade or occupation of every worker(s) that I employed on this project, including an accurate record of the hours worked and actual wages paid to such worker(s).
- **I will** retain the records and affidavit(s) described above and make them available for inspection for a period of at least three (3) years from the completion date indicated above at the address indicated below and shall not remove such records or affidavit(s) without prior notification to the awarding agency indicated above.

Name of Corporation, Partnership, Sole Proprietorship, Business, State Agency or Local Governmental Unit				
Street Address	City	State	Zip Code	Telephone Number
Print Name of Authorized Officer			Date Signed	
Signature of Authorized Officer				

ERD-5724 (R. 11/2010)

List of Agents and Subcontractors

Name			Name		
Street Address			Street Address		
City State		Zip Code	City State		Zip Code
Telephone Number			Telephone Number		
Name			Name		
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Street Address			Street Address		
City State		Zip Code	City State		Zip Code
Telephone Number			Telephone Number		

State of Wisconsin
Department of Workforce Development
Equal Rights Division

Agent or Subcontractor Affidavit of Compliance With Prevailing Wage Rate Determination

Authorization for this form is provided under Sections 66.0903(9)(b), 66.0904(7)(b) and 103.49(4r)(9b), Wisconsin Statutes. The use of this form is mandatory. The penalty for failing to complete this form is prescribed in Section 103.005(12), Wisconsin Statutes.
Personal information you provide may be used for secondary purposes [Privacy Law, Section 15.04(1)(m), Wisconsin Statutes].

This form must **ONLY** be filed with the **Awarding Contractor** indicated below.

State Of _____))SS County Of _____)	Project Name	
	DWD Determination Number	Project Number (if applicable)
	Date Determination Issued	Date of Subcontract
	Awarding Contractor	
	Date Work Completed	

After being duly sworn, the person whose name and signature appears below hereby states under penalty of perjury that

- **I am** the duly authorized officer of the corporation, partnership, sole proprietorship or business indicated below. We have recently completed all of the work required under the terms and conditions of a subcontract with the above-named awarding contractor. We make this affidavit in accordance with the requirements set forth in Section 66.0903(9)(b), 66.0904(7)(b) or 103.49(4r)(b), Wisconsin Statutes and Chapter DWD 290 of the Wisconsin Administrative Code in order to obtain FINAL PAYMENT from such awarding contractor.
- **I have** fully complied with the entire wage and hour requirements applicable to this project, including all of the requirements set forth in the prevailing wage rate determination indicated above which was issued for such project by the Department of Workforce Development on the date indicated above.
- **I have** received the required affidavit of compliance from each of my agents and subcontractors that performed work on this project and have listed each of their names and addresses on page 2 of this affidavit.
- **I have** full and accurate records that clearly indicate the name and trade or occupation of every worker(s) that I employed on this project, including an accurate record of the hours worked and actual wages paid to such worker(s).
- **I will** retain the records and affidavit(s) described above and make them available for inspection for a period of at least three (3) years from the completion date indicated above at the address indicated below and shall not remove such records or affidavit(s) without prior notification to the awarding contractor.

Name of Corporation, Partnership, Sole Proprietorship, Business, State Agency or Local Governmental Unit				
Street Address or PO Box	City	State	Zip Code	Telephone Number ( )
Print Name of Authorized Officer			Date Signed	
Authorized Officer Signature				

List of Agents and Subcontractors

Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
Telephone Number ( )			Telephone Number ( )		
Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
Telephone Number ( )			Telephone Number ( )		
Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
Telephone Number ( )			Telephone Number ( )		
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Street Address			Street Address		
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Telephone Number ( )			Telephone Number ( )		
Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
Telephone Number ( )			Telephone Number ( )		

If you have any questions call (608) 266-6861

State of Wisconsin
Department of Workforce Development
Equal Rights Division
Labor Standards Bureau

Request to Employ Subjourneyperson

The use of this form is mandatory. The penalty for failing to complete this form is prescribed in Section 103.005(12), Wisconsin Statutes.
Personal information you provide may be used for secondary purposes (Privacy Law, s. 15.04(1)(m), Wisconsin Statutes].
The employer indicated below requests that the Department of Workforce Development (DWD) determine the prevailing wage rate(s) and related qualifications to enable such employer to use a subjourneyperson(s) on the following prevailing wage project, in accordance with the provisions of Section DWD 290.025, Wisconsin Administrative Code.

1. Name of Project Appearing on the Project Determination			
County	City, Village or Town		
DWD Project Determination Number	Project Number (if applicable)		
2. Job Classification(s) for which you request a subjourney rate (i.e., carpenter, electrician, plumber, etc.)			
a.	b.		
c.	d.		
3. Employer Name (Print)	Requester Name (Print)		
Address	City	State	Zip Code
Telephone Number ( )	Requester Title		
Email address (if you prefer to receive your response via email)	Fax Number (if you prefer to receive your response via fax) ( )		

READ CAREFULLY: I understand that this request is ONLY applicable to the project and job classification(s) listed above and that subjourney employees primarily work under the direction of and assist a skilled trade employee by frequently using the tools of a skilled trade and will NOT regularly perform the duties of a general laborer, heavy equipment operator or truck driver. If the subjourney employee regularly performs the work of a different trade or occupation, he/she will be compensated for such work at the applicable journeyperson prevailing wage rate. I agree to compensate subjourney employees in strict accordance with the directions received from the DWD.

Requester Signature	Date Signed

MAIL the completed request to:
EQUAL RIGHTS DIVISION, LABOR STANDARDS BUREAU
PO BOX 8928, MADISON WI 53708
OR
FAX the completed request to: (608) 267-0310 / **DO NOT e-mail your request.**
Call (608) 266-6861 for assistance in completing this form.

PC-16

CONTRACT

THIS AGREEMENT made and entered into this_____ day of _____, 2012 by and

between _____ of the first part, hereinafter called the "CONTRACTOR" and the CITY OF FOND DU LAC, WISCONSIN, a municipal corporation, party of the second part, hereinafter called the "OWNER".

WITNESSETH

That the Contractor and the Owner, for the consideration herein stated, do agree as follows:

ARTICLE I. SCOPE OF WORK. The Contractor shall perform everything required to be performed, and shall provide and furnish labor, materials, tool, expendable equipment, and all utility and transportation services required to perform and compete in a workmanlike manner, all of the work required and contemplated by this Contract for the City of Fond du Lac's "Frazier Point Pier and Plaza" all in strict accordance with the Contract and Specifications, and Special Provisions, the same, together with the Contractor's Proposal and Bidding Schedule to be considered and made a part of this Contract.

ARTICLE II. INDEMNITY CLAUSE. The Contractor does hereby covenant and agree to indemnify and save harmless the Owner from all fines, suits, claims, demands, and actions of any kind and nature by reason of any and all of its operations hereunder, and does hereby agree to assume all the risk in the operation of its business hereunder and shall be solely responsible and answerable in damage for any and all accidents or injuries to persons or property.

ARTICLE III. THE CONTRACT PRICE. The Owner shall pay to the Contractor for the performance of his

Contract, subject to any additions or deductions,

_____

The actual sum to be paid, however, will be the aggregate total determined by the work actually performed by the Contractor, calculated upon the unit prices set out in the contract. The foregoing total sum shall be the basis for establishing the amount of Surety Performance Bond, and is not to be construed as the lump sum contract price.

ARTICLE IV. COMPONENT PARTS OF THIS CONTRACT. This contract shall consist of the following component parts, all of which shall be considered as fully a part of this contract as if the same were set out verbatim, if not attached, as if attached hereto.

1. Special Provisions
2. Contract Specifications
3. Instructions to Bidders
4. Advertisement for Bids
5. Contractor's Proposal
6. This Instrument

The Contractor agrees to commence work under this Contract on a date to be specified in a written order from the Owner and does further agree to fully complete all work included in this Contract to a point of final acceptance by the Owner by November 15, 2012.

This Contract is intended to conform in all respects to the applicable statutes of the State of Wisconsin, and if any part or provision of this Contract conflicts therewith, then in that event said statutes shall govern.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed in two (2) original counterparts the day and year first above written.

_____
FIRM NAME

In Presence Of:

_____ _____
PRESIDENT OR CO-PARTNER

_____ _____
SECRETARY OR PARTNER

_____
SOLE TRADER

In Presence Of: CITY OF FOND DU LAC, WISCONSIN

_____ _____
CITY MANAGER

_____ _____
CITY CLERK

Date:_____

Provisions have been made to pay the liability that will accrue under this contract.

_____ Date:_____
DIRECTOR OF ADMINISTRATION

Approved as to form:

_____ Date:_____
CITY ATTORNEY

GENERAL REQUIREMENTS AND COVENANTS

Section 102

Instructions to Bidders - Proposal Requirements

BIDDER'S RESPONSIBILITY

The work shall be let in accordance with, but not limited to, the following sections of the Wisconsin State Statutes.

1. Section 62.15 regarding public works construction
2. Section 779.14 regarding liens on contractors
3. Section 66.0903 regarding municipal wage scale
4. Section 66.0901(2) regarding proof of responsibility

NOTICE TO CONTRACTORS

"The Advertisement for Bids" constitutes an official notice to contractors stating the time and place for the submission of seal proposals upon designated projects for proposed work, instructions to bidder regarding proposal forms, proposal guaranty, plan specifications, and the reservation of the right of the Owner to reject any or all bids.

PREQUALIFICATION OF BIDDERS

In accordance with Wisconsin Statutes 66.09(2) and (3), all bidders must submit prequalification to the Director of Public Works not less than five (5) days prior to the date of opening bids. Said proof of responsibility shall not be valid if filed prior to one year of the date of opening of bids or if not reflective of bidders current status.

The decision of the Director of Public Works with regard to the sufficiency of the data contained in the form is final and may cause the rejecting or disregarding of said bid.

DISQUALIFICATION OF BIDDERS

Any one or more of the following causes may be considered as sufficient for rejection of the bid or bids and disqualification of the bidder from further bidding for such periods of time as shall be determined by the Director of Public Works.

1. Developments subsequent to the establishment of bidder's competence and qualifications which, in the opinion of the Director of Public Works would reasonably be construed as affecting the responsibility of bidder.

2. Conviction of a violation of a State or Federal law or regulation, or rule or regulation of a Federal Department, board or commission, relating to or reflecting on the competency of the bidder for performing construction work.

3. More than one proposal for the same work from an individual, partnership or corporation under the same or different names.

4. Evidence of collusion among bidders.

5. Non-compliance with the terms of previous or existing contracts.

6. Uncompleted work which, in the judgment of the Director of Public Works, might in any way hinder or prevent the prompt completion of additional work if awarded.

7. Uncompleted work on which the actual time used has exceeded the contract time set therefore, or on which work performance or progress is not satisfactory in the judgment of the Director of Public Works.

CONTENTS OF PROPOSAL FORMS

The Owner will furnish bidders with proposal forms which will state the location and description of the contemplated construction, the estimated quantities of the various items of work to be performed and materials to be furnished, for which unit bid prices are asked. The proposal form will state the time in which the work must be completed, the amount of proposal guaranty which must accompany the proposal, will contain special provisions or requirements which may vary from or are not contained in these specifications and as well as the amount of liquidated damages, if any, to be imposed upon the Contractor for failure to complete the contract in the prescribed time to reimburse the City for any expenses involved due to engineering, inspection, and inconvenience.

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

PREPARATION OF PROPOSAL

The bidder must submit his proposal on the forms furnished by the Owner. All blank spaces in the proposal forms must be correctly filled in where indicated for each and every item for which a quantity is given, and the bidder must state the prices (written in ink) for which he proposes to do each item of the work contemplated or furnish each item of the material required. In case of conflict between the unit price stated and the extension for that item, the unit price will govern.

All proposals submitted by an individual shall be signed by the bidder or by a duly authorized agent. A proposal submitted by a partnership shall be signed by a partner or by a duly authorized agent thereof. A proposal submitted by a corporation shall be signed by an authorized officer or duly authorized agent of such corporation. The required signatures shall in all cases appear in the space provided therefore on the proposal.

PROPOSAL GUARANTY

Each separate proposal shall be accompanied by a certified check or acceptable collateral in the amount of five percent (5%) of the total amount bid, made payable to the Owner. A bid bond in lieu of a certified check will be acceptable.

DELIVERY OF PROPOSAL

Each proposal submitted shall be placed in a sealed envelope plainly marked with the project name, and name and address of the bidder on the outside. When sent by mail, preferably registered, the sealed proposal, marked as indicated above, should be enclosed in an additional envelope. No proposal will be considered unless filed on or before the time and at the place designated in the advertisement or instructions to bidders.

WITHDRAWAL OF PROPOSALS

Any bidder, upon his or her authorized representative's written request, will be given permission to withdraw his proposal not later than the time set for opening thereof. At the time of opening of the proposals, when such

proposal is reached, it will be returned to him unread. However, no bid shall be withdrawn after opening of the bids without the consent of the Director of Public Works for a period of thirty (30) days after the scheduled time for closing bids.

REJECTION OF PROPOSAL

Proposals containing any omission, alterations of form, additions or conditions not called for, conditional or alternate bids unless called for, incomplete bids, or proposals otherwise regular which are not accompanied by a certified check or acceptable collateral will be considered irregular and may be rejected. The Owner reserves the right to waive technicalities as to changes, alterations, or reservations, and make the award to the best interest of the Owner.

Section 103

AWARD AND EXECUTION OF CONTRACT

CONSIDERATION OF PROPOSAL

After the proposals are opened and read, the quantities will be extended and totaled in accordance with the bid prices of the accepted proposals, and the results of prices will be made public. Until the final award of the contract, the Owner reserves the right to reject any and all proposals, or proceed to do the work otherwise when the best interests of the Owner will be promoted thereby.

AWARD OF CONTRACT

The award of contract, if any, will be to the lowest responsible bidder whose proposal complies with all the requirements necessary to render said proposal as being acceptable. The award will be made within thirty (30) days after the opening of the proposal. The work outlined in the proposal may be awarded as a whole or in part or parts, according to the best interests of the Owner.

EXECUTION OF CONTRACT

The individual, firm partnership, or corporation to whom or to which the contract has been awarded, shall properly execute, on the forms provided, the contract and the 100% Performance Bond, and shall within ten (10) days after the contract is mailed, return them to the Office of the Owner.

APPROVAL OF CONTRACT

No contract is binding upon the Owner until it has been executed by the Owner and delivered to the Contractor.

FAILURE TO EXECUTE CONTRACT

Failure of the successful bidder to comply with any of the requirements of these specifications or to execute the contract within ten (10) days after mailing as specified or to furnish security as required shall be just cause for the annulment of the award. In the event of such annulment of the award, the amount of proposal guaranty shall become the property of the Owner, not as a penalty but as liquidated damages. Award may then be made to the next best qualified bidder, or the work readvertised, or handled as the Owner may elect.

RETURN OF THE PROPOSAL GUARANTEES

As soon as the proposal prices have been compared, the Engineer may, at his discretion, return the certified checks or other collateral accompanying those proposals, which in his judgment, would not be considered in making the award. When the award is made the successful bidder's collateral only will be retained until the contract and bond have been executed, after which it will be returned to the bidder. Should the award be

delayed more than thirty (30) days all bidders' collateral will be returned unless such delay is from causes beyond the control of the Owner.

REQUIREMENTS OF PERFORMANCE BOND

The contract shall not become operative unless the Contractor on or before the time of signing the contract shall have furnished a surety bond or cash in an amount at least equal to one hundred percent (100%) of the contract price as surety for all the faithful performance of this contract and for the payment of all persons performing labor and furnishing materials in connection with the contract.

Section 104

SCOPE OF WORK

INTENT OF PLANS AND SPECIFICATIONS

The intent of the plans and specifications is to prescribe a complete work or improvement which the Contractor undertakes to do in full compliance with the plans, the specifications, the special provisions, proposal, and contract. The Contractor shall do all work including such additional, extra, and incidental work as may be considered necessary to complete the project in a satisfactory and acceptable manner, as provided in the plans, proposal, and contract. He shall furnish, unless otherwise provided in the specifications, special provision or contract, all materials, equipment, tools, labor, and incidentals necessary to complete the work.

If the contractor does not fully understand the plans and specifications or the intent concerning any part of the work, he shall satisfy himself by making the necessary inquiries of the Engineer before bidding.

ACCURACY OF PLANS

The plans for the project represent the best data available on all existing surface features and underground utilities. Preparation of the plans is based on actual field measurements whenever possible, such measurement pertaining both to alignment and to grade. Utility locations, which could not be field-measured, are plotted from the best map or plan sources available. Therefore, the information shown on the plans represents to the best of the Engineer's knowledge an accurate picture of the conditions to be encountered in prosecution of the work.

Should the Contractor encounter unknown underground utilities or structures in the path of his construction, the Engineer will attempt to determine what they are and whether it is necessary to abandon or maintain them. The Engineer will make a decision as to the disposition of the specific case, and if such disposition requires unreasonable effort and expense on the part of the Contractor, the Engineer will prepare a written authorization for extra work based upon the agreement as to cost with the Contract and conformance with the General Specifications pertaining to Extra Work.

OMITTED ITEMS

The Engineer may, in writing, order omitted from the project, any item other than major items found unnecessary to the project and such omission shall not be a waiver of any condition of the contract nor invalidate any of the provisions thereof. Major items may be omitted by supplemental agreements. The contractor will be paid for all work done toward the completion of the item prior to such omission as provided in payment for omitted items.

CHANGES AND INCREASED OR DECREASED QUANTITIES OF WORK

The Engineer reserves and shall have the right to make such changes, from time to time, in the plans, the character, or quantity of the work as may be considered necessary or desirable to complete fully and acceptably

the proposed construction in a satisfactory manner, provided such alterations do not change the total cost of the project, based on the originally estimated quantities and the unit prices bid, by more than fifteen percent (15%), and provided further that such alterations do not change the total cost of any major item, based on the originally estimated quantities and the unit prices bid, by more than twenty-five (25%). A major item shall be construed to be any item, the total cost of which is equal to or greater than ten percent (10%) of the total contract price, computed on the basis of the proposal quantity and the contract unity price. Should it become necessary, for the best interest of the Owner, to make changes in excess of that herein specified, the same shall be covered by supplemental agreement.

The Contractor shall not start work on any alterations requiring a supplemental agreement until the agreement setting forth the adjusted prices shall be executed by the Owner and the Contractor.

Should any of the changes not requiring supplemental agreements be made as provided herein, the Contractor shall perform the work as altered, increased or decreased at the contract unit price or prices.

In case a satisfactory adjustment in price cannot be reached for any item requiring a supplemental agreement, the Owner reserves the right to terminate the contract as it applies to the items in question and make such arrangements as may be deemed necessary to complete the work.

EXTRA WORK - FORCE ACCOUNT

When work is necessary to the proper completion of the project for which no quantities or prices were given in the proposal or contract, the same shall be called extra work and shall be performed by the Contractor when so directed in writing by the Engineer. Extra work shall be performed by the Contractor in accordance with these specifications in a proper and workmanlike manner and as may be directed by the Engineer. Prices for extra work shall be itemized and covered by a supplemental agreement submitted by the Contractor and approved by the Owner prior to the actual starting of such work. Should the parties be unable to agree on unit prices for the extra work or if this method is impractical, the Engineer may instruct the Contractor to proceed with the work by day labor or force account as hereinafter provided for in payment for force account work. Claims for extra work not authorized in writing by the Engineer prior to the work being done will be rejected.

PAYMENT FOR EXTRA AND FORCE ACCOUNT WORK

All extra work done on a force account basis will be paid for in the manner hereinafter described, and the compensation thus provided shall be accepted by the Contractor as payment in full for the use of small tools, superintendent's services, the timekeeper's services, premium on bond, and all other overhead expenses incurred in the prosecution of all extra work done on a force account basis. Payment will be made as follows:

1. For all materials purchased by the Contractor and used in this specific work he will receive the actual cost of such materials including freight charges, as shown by original receipted bills for materials and freight, to which will be added an amount equal to fifteen (15) percent of the sum thereof.

2. For all labor and foremen engaged in the specific operation, the Contractor will receive the wage prevailing and paid on the project for each and every hour that said labor and foremen are actually engaged in such work, to which will be added an amount equal to fifteen (15) percent of the sum thereof. In addition, the Contractor shall be paid a sum equal to the Workmen's Compensation insurance premium and the actual cost of Social Security taxes, computed on the base rate for the class of work involved, for the actual amount of the payroll.

3. For any machine, power, and equipment which it may deem necessary or desirable to use, the Contractor will be allowed a reasonable rental price, which will be agreed upon in writing before such work is begun, for each and every hour that said machinery or equipment is in use on such work, to which sum no percentage will be added.

The Contractor's timekeeper and the inspector shall compare records of extra work on a force account basis at the end of each day. Copies of these records shall be made in duplicate by the inspector and shall be signed by both the inspector and the Contractor's timekeeper, one copy being forwarded respectively to the Engineer and the Contractor.

No extra work will be paid for unless unit prices or wages have been agreed upon in writing before such work is started. Bills for force account work must be certified and submitted in triplicate to the Engineer with the current monthly estimate.

MAINTENANCE OF TRAFFIC

The Contractor shall plan and prosecute his work, when the construction involve closing or relocation of any local street or highway, so that traffic will be hindered to a minimum.

The Contractor shall bear all of the expense of maintaining traffic across the section of street undergoing improvement, and the construction and maintaining of such approaches, crossings, intersections and other features as may be necessary without compensation.

During concrete paving operations the Contractor, at his own cost and expense and at locations designated in the contract, shall provide means satisfactory to the Engineer for crossings for the traffic on intersecting streets in a manner which will not interrupt the flow of such traffic or be harmful to the newly placed pavement.

The Contractor at his own expense shall also provide and maintain adequate temporary pedestrian crossings, barriers and lights, special warning signs or watchmen at the ends of the portions of the road closed by construction on the project and at intersecting roads or streets and at other points of public access and travel along the project.

REMOVAL AND DISPOSAL OF STRUCTURES AND OBSTRUCTIONS

All structures or obstructions found within the street or shown on the plans which are not to remain in place or which are not to be used in the new construction shall be removed as directed the Engineer. The removal of such structures, obstructions or parts thereof, when not specified in the Contract but subsequently required, shall be paid for as Extra Work. All material found on the street or removed therefrom shall remain the property of the Owner unless otherwise indicated.

The Contractor shall not excavate any material from within the street right-of-way which is not within the excavation as indicated by the slope and grade lines, without being authorized in writing by the Engineer.

FINAL CLEANING UP

Upon completion of the work and before acceptance and final payment will be made, the Contractor shall remove from the site all machinery, equipment, surplus and discarded materials, rubbish, temporary structures, and stumps or portions of trees. He shall cut all brush and wood within the limits indicated and shall leave the street in a neat and presentable condition. Material removed from the project shall not be deposited on adjacent properties unless so directed by the Engineer or his representative. Brush, stumps, trees, waste excavation, or other materials shall be disposed of at the site (or sites) stated in the Special Provisions, and in the manner described in such Special Provisions. The Contractor shall restore, at his own cost and expense, all work completed under other previous contracts which has been damaged by his operations in general conformity with the specifications for the item or items involved. Final clean up shall be considered subsidiary and incidental to the other items of the contract, and no separate or additional compensation will be made therefore. Work days shall be charged against the Contractor until all clean up is completed to the satisfaction of the Engineer.

Section 105

CONTROL OF WORK

AUTHORITY OF ENGINEER

All work shall be done under the supervision of the Engineer and to his satisfaction. He shall decide all questions which arise as to the quality and acceptability of materials furnished, work performed, manner of performance, rate of progress of the work, interpretation of the plans and specifications, acceptable fulfillment of the contract, compensation, and dispute and mutual rights between Contractors under the specifications. He shall determine the amount and quantity of work performed and materials furnished and his decision and estimate shall be final. His estimate in such event shall be a condition precedent to the right of the Contractor to receive money due him under the contract. The Engineer shall have executive authority to enforce and make effective such decisions and orders as the Contractor fails to carry out promptly, and in case of failure on the part of the Contractor to execute work ordered by the Engineer, the Contractor hereby agrees that the Engineer may, at the expiration of a period of forty-eight (48) hours after giving notice in writing to the Contractor, to proceed to execute such work as may be deemed necessary and the cost thereof shall be deducted from compensation due or which may become due the contractor under the contract.

All decisions of the Engineer shall, when so requested, be rendered in writing. These decisions shall be final and conclusive.

CONFORMITY WITH PLANS AND SPECIFICATIONS

All work performed and all materials furnished shall be in conformity with the lines, grades, cross-sections, dimensions and material requirements shown on the plans or indicated in the specifications. It shall be finished to produce quality work and appearance within the limits of precision expected of a competent Contractor.

The lines, grade, typical sections, and dimensions shown on the plans are subject to adjustment by the Engineer during construction, but any deviation of a character not contemplated or provided for in the plans or specifications that may be required to successfully complete the project will be determined by the Engineer and authorized by him in writing.

In the event the Engineer finds the materials or the finished product in which the materials used are not within reasonably close conformity with the plans and specifications through no willful neglect or omission by the Contractor but that reasonably acceptable work has been produced, he shall then make a determination if the work shall be accepted and remain in place. In this event, the Engineer will document the basis of acceptance by contract modification which may provide for appropriate adjustment in the contract price for such work or materials as he deems necessary to conform to his determination based on engineering judgment.

In the event the Engineer finds the materials or the finished product in which the materials are used or the work performed are not in reasonably close conformity with the plans and specifications and have resulted in an inferior or unsatisfactory product, the work or materials shall be removed and replaced or otherwise corrected by and at the expense of the Contractor.

COORDINATION OF SPECIFICATIONS, PLANS AND SPECIAL PROVISIONS

These specifications, the plans, special provisions, and all supplementary plans and documents are essential parts of the contract, and a requirement occurring in one is just as binding as though occurring in all. They are intended to be cooperative, to describe and provide for a complete work. In case of discrepancy, stated dimension, unless obviously incorrect shall govern over scaled dimensions. Plans shall govern over specifications and special provisions shall govern over both plans and specifications.

The Contractor shall not take advantage of any apparent error or omission in the plans or specifications. In the event the Contractor discovers any apparent error or discrepancy, he shall immediately call upon the Engineer for his interpretation and decision, and such decision shall be final.

COOPERATION OF CONTRACTOR

The Contractor will be supplied with two copies of the plans, specifications, and special provisions. He shall have available on the work site at all times one copy each of said plans, specifications and special provisions. He shall have available on the work site at all times one copy each of said plans, specifications, and special provisions. Additional copies of plans, specifications, and special provisions can be obtained by the Contractor for the cost of reproduction.

The Contractor shall give the work the constant attention necessary to facilitate the progress thereof and he shall cooperate with the Engineer and his inspectors and with other Contractors in every way possible. The City reserves the right at any time to contract for and perform other or additional work on or near the work covered by the contract.

The Contractor shall be held responsible for any damage done by him or his agents to the work performed by another contractor. Each Contractor shall conduct his operations and maintain the work in such condition that adequate drainage shall be in effect at all times.

In case of a dispute arising between two or more contractors engaged on the same improvement or in different improvements as to the respective rights of each under the specifications, the Engineer shall be the arbitrator and his decision shall be final and binding on all parties concerned and shall not be cause for any extra compensation to any of the parties involved.

The Contractor shall have a competent, English-speaking superintendent on the work at all times who is fully authorized as his agent on the work, such superintendent shall be capable of reading and thoroughly understanding the plans and specifications and shall receive and fulfill instruction from the Engineer, or his authorized representative.

MAINTENANCE OF FIELD OFFICE

If a field office is specified, the Contractor shall furnish for use of the field engineers and inspectors, an approved weatherproof building. The building shall be located conveniently near construction and shall be separated from any building used by the Contractor. The floor space shall not be less than ten (10) x twelve (12) feet, the ceiling not less than eight (8) feet in height, and there shall be at least three single-sash lighting windows. It shall be furnished with a wooden locker large enough for the string of implements and testing equipment and with one bracketed wall table at least three (3) x six (6) feet in dimension. The Contractor shall furnish heat, air conditioning, and light, and shall also furnish a telephone for the building at his own expense.

Payment for this building will be paid for at the lump sum contract price for Field Office. All costs connected with this item shall be included in this lump sum unit price. The Contractor and his superintendent shall provide all reasonable facilities to enable the Engineer and inspector to inspect the workmanship and materials entering into the work.

CONSTRUCTION STAKES

All construction staking to be provided by contractor based on Plans provided here in.

APPROVAL OF SOURCES OF SUPPLY OF MATERIALS

The source of supply of each of the materials required shall be approved by the Engineer before delivery is started. Representative preliminary samples may be submitted by the Contractor, producer, or owner of the

supply for inspection or tests. The results obtained from testing such samples may be used for preliminary approval but will not be used as a final acceptance of the materials. All materials proposed to be used may be tested at any time during their preparation and use. If, after trial, it is found that sources of supply which have been approved do not furnish a product of uniform quality, or if the product from any source proves unacceptable at any time, the Contractor shall furnish approved material from another source.

APPROVAL AND ACCEPTANCE OF MATERIALS

Samples of all materials for test upon which is to be based the acceptance or rejection, shall be taken by the Engineer or his authorized representative at the discretion of the Engineer. Materials may be sampled either prior to shipment or after being received at the place of construction. All sampling, inspection, and testing shall be done in accordance with the methods hereinafter prescribed.

The Contractor shall provide such facilities as the Engineer or his representative may require for conducting field tests and for collecting and forwarding samples. The Contractor shall not use or incorporate into the work any materials represented by the samples until tests have been made and the material found to be acceptable. Only materials conforming to the requirements of these specifications and which have been approved by the Engineer or his authorized agents will be used in the work. Any material which, after approval, has for any reason become unfit for use shall not be incorporated into the work.

METHODS OF SAMPLING AND TESTING

Except as otherwise provided, sampling and testing of all materials, and the laboratory methods and testing equipment under these specifications shall be in accordance with the latest edition of the "Standard Specifications for Highway Materials and Methods of Sampling and Testing" of A.A.S.H.T.O. Sampling and testing materials not covered by A.A.S.H.T.O. Specification, and not otherwise provided for, shall be in accordance with the Standards and Tentative Methods of the A.S.T.M. being the latest applicable specifications published by the A.S.T.M.

The testing of samples and materials shall be made at the expense of the Owner. Laboratory sieves shall have square openings of the sizes specified. The Contractor shall furnish the required samples without charge. The Contractor shall give sufficient notifications of the placing of orders for materials to permit testing.

STORAGE

Materials shall be stored so as to insure the preservation of their equality and fitness for the work. When considered necessary they shall be placed on wooden platforms, or other hard, clean surfaces and not on the ground, and shall be placed under cover when directed. Stored materials shall be located so as to facilitate prompt inspection.

AUTHORITY AND DUTIES OF INSPECTIONS

Agents of the Owner shall be authorized to inspect all work completed 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 materials to be used. The inspector is not authorized to revoke, alter, or waive any requirements of the specifications. He is authorized to call the attention of the contractor to any failure of the work or materials to conform to the specifications and contract. He shall have the authority to reject materials or suspend the work until any questions at issue can be referred to and decided by the Engineer.

The inspector shall in no case act as foreman or perform other duties for the Contractor nor interfere with the management of the work by the later. Any advice which the inspector may give the Contractor shall in no way be construed as binding to the Engineer in any way, or releasing the Contractor from fulfilling all of the terms of the contract.

If the Contractor refuses to suspend operation on verbal order, the inspector shall issue a written order giving the reason for shutting down the work. After placing the order in the hands of the person in charge, the inspector shall immediately leave the job. Work done during the absence of the inspector will not be accepted or paid for.

INSPECTION

The Contractor shall furnish the Engineer with every reasonable facility for ascertaining whether or not the work, as performed, is in accordance with the requirements and intent of the specifications and contract. If the Engineer requests it, the Contractor at any time before acceptance of the work shall remove or uncover such portions of the finished work as may be directed. After examination, the Contractor shall restore said portions of the work to the standard required by the specifications. Should the work thus exposed or examined prove unacceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed, shall be at the Contractor's expense. Any work done or materials used without suitable supervision or inspection by the Engineer or his authorized representative may be ordered removed and replaced at the Contractor's expense.

REMOVAL OF DEFECTIVE AND UNAUTHORIZED WORK

All materials furnished and work done will be inspected by the Engineer and/or his authorized agent, and if not in accordance with these specifications, they will be rejected and shall immediately be removed from the premises and other materials furnished and work done in accordance herewith.

Work done without lines and grades having been given, work done beyond the lines and grades shown on the plans, or as given, except herein provided, work done without proper inspections, or any extra or unclassified work done without written authority and prior agreement in writing as to prices, will be done at the Contractor's risk and will be considered unauthorized and, at the option of the Engineer, may or may not be measured and paid for and may be ordered removed and replaced at the Contractor's expense.

Upon failure of the Contractor to repair satisfactorily or to remove and replace, if so directed, rejected, unauthorized, or condemned work or material immediately after receiving formal notice from the Engineer, the Engineer shall have the right and authority to stop the Contractor in his work at once and the Engineer shall cause the faulty work and materials to be removed and corrected at the expense of the contractor. The

Contractor hereby agrees that any expense incurred by the Owner may be recovered on the Contractor's bond, by action in a court having proper jurisdiction over such matters, or such costs may be deducted from the moneys then due or to become due to the Contractor.

If, for any reason, the Engineer shall fail or neglect to correct any faulty or defective material or work as outlined above, the Contractor shall not be relieved of correcting said material or work and the right of final acceptance or condemnation of the work shall not be waived in any manner by reason of said failure or neglect on the part of the Engineer.

DISPUTED CLAIMS FOR EXTRA WORK

In case the Contractor deems extra compensation is due him for work or materials not clearly covered in the contract, or not ordered by the Engineer in writing of his intention to make claim for such extra compensation before he begins the work on which he bases the claim and shall account to the Engineer the actual cost of the work and shall afford the Engineer every facility for keeping actual costs thereof.

Failure on the part of the Contractor to give such notification or to afford the Engineer proper facilities for keeping strict account of actual cost shall constitute a waiver of the claim for such extra compensation. The filing of such notice by the Contractor and the keeping of costs by the Engineer shall not in any way be construed to prove the validity of the claim. When the work has been completed, the Contractor shall within

ten (10) days file his claim for extra compensation with the Engineer, who will present it to the Owner for consideration.

GUARANTEE

Unless otherwise stated in the special provisions, the Contractor shall guarantee the work performed under this contract for a period of one year from the date of final acceptance by the Engineer against defects in workmanship and materials. If any defect should appear during the guarantee period, the Contractor shall make required replacement or acceptable repairs of the defective work at this own expense. This expense includes total and complete restoration of any disturbed surface to original or better than original condition which existed before the repairs or replacement, regardless of improvements on lands where the repairs or replacement will be required.

Section 106

LEGAL REQUIREMENTS AND PUBLIC RESPONSIBILITY

LAWS TO BE OBSERVED

The Contractor shall at all times observe and comply with all Federal and State laws, local laws, ordinances and regulations which in any manner affect the conduct of the work, and all such orders or decree as exist at the present or which may be enacted later, of bodies or tribunals having jurisdiction or authority over the work, and no pleas of misunderstanding or ignorance thereof will be considered. He shall indemnify and save harmless the City and all of its officers, agents, employees, and servants against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order, or decree, whether by himself, his employees, or his agents.

The movement of vehicles or equipment over any public highway to the project, necessary for the prosecution of the work, shall be regulated in accordance with the provisions of the Wisconsin Statutes.

PERMITS AND LICENSES

The Contractor shall procure all permits and licenses, pay all charges and fees, and give all notices necessary and incident to the due and lawful prosecution of the work.

PATENTED DEVICES, MATERIALS AND PROCESSES

It is mutually understood and agreed that without exception contract prices are to include all royalties and costs arising from patents, trademarks, and copyrights in any way involved in the work. It is the intent that whenever the Contractor is required or desires to use any design, device, material process covered by letters patent or copyrights, the right for such use shall be provided for by suitable legal agreement with the patentee or owners and a copy of this agreement shall be filed with the Engineer; however, whether or not such agreement is made or filed as noted, the Contractor and the surety in all cases shall indemnify and save harmless the City from any and all claims for infringement by reason of the use of any such patented design, device, material or process to be involved under the contract, and shall indemnify the said City for any costs, expenses, and damages which it may be obliged to pay, by reason of any such infringement, at any time the prosecution or after the completion of the work.

SANITARY PROVISIONS

The Contractor shall provide and maintain in a neat, sanitary condition such accommodations for the use of his employees as may be necessary to comply with the requirements and regulations of the Wisconsin State Board of Health or of other authorities having jurisdiction, and shall commit no public nuisance.

PUBLIC CONVENIENCE AND SAFETY

The Contractor shall avoid as far as possible the maintenance of any condition which might be deemed at law to be an "attractive nuisance". The Contractor and his Surety shall be responsible for all damage, bodily injury, or death arising through his maintaining an attractive nuisance or otherwise.

If the Contractor desires to use water from public hydrants, he shall make application to the proper authorities, and shall conform to the City ordinances, rules and regulations concerning their use.

Fire hydrants shall be accessible at all times to the Fire Department. No material or other obstructions shall be placed closer to a fire hydrant than permitted by ordinances, rules, or regulations, or within five (5) feet of a fire hydrant in the absence of such ordinances, rules or regulations.

The Contractor shall give notice in writing to the proper authorities in charge of the streets, gas and water pipes, electric and other conduits, railroads, poles, manholes, catch basins and all other property that may be affected by the Contractor's operations, at least seventy-two (72) hours before breaking ground. The Contractor shall not hinder or interfere with any persons in the protection of such work, or with the operation of utilities, at any item. The Contractor must obtain all necessary information in regard to existing utilities. He shall protect such utilities from injury and shall avoid unnecessary exposure so that they will not cause injury to the public. In case of any damage whatsoever, the cost of making repairs will be borne by the Contractor.

The Contractor must also obtain all necessary information in regard to the planned installation of new utilities and new cables, conduits and transformers, make proper provisions and given proper notification so that new utilities and electrical equipment can be installed at the proper time without delay to the Contractor or unnecessary inconvenience to the Owner. The locations of new utilities and electrical equipment, planned to be installed concurrently with the highway improvement, shall not be covered with pavement prior to installation of such facilities.

When the work involves excavation adjacent to any building along the work, the Contractor must give the property owner and the Owner due and sufficient notice thereof. The Contractor and Surety shall hold the municipality in which the work is done harmless from any damage resulting from loss of lateral support of any such building.

BARRICADES, WARNING SIGNS, AND FLAGMEN

All work sites in this contract shall be signed and barricaded in accordance with the latest State of Wisconsin Department of Transportation Manual of Uniform Traffic Control Devices. No more than one lane of any street shall be closed to traffic at any time without prior approval of the Engineer. No equipment or materials shall be stopped, loaded or stored in a location which will hinder, distract, or impede a safe and suitable traffic operation on lanes of the roadway required to be kept open to traffic unless otherwise approved by the Engineer.

He shall at all times at his own expense, keep the roadbed in such condition that the public can travel the same in convenience and safety. Traffic service will be given precedence over other work, and the Contractor's failure to comply with these requirements shall be cause for suspension of other operations until compliance has been secured.

The Contractor will be held responsible for all damages to the work due to failure of barricades, signs, lights, flagmen and watchmen to protect it, and the Engineer may order the damaged portion immediately removed and replaced by the Contractor without cost to the City, if, in his opinion such action is justified. The Contractor's responsibility for the maintenance of barricades, signs, and lights shall not cease until the project has been accepted.

The suspension of operations by order of the Engineer or otherwise, shall in no way relieve the Contractor of the obligation of providing and maintaining barricades, signs and lights as set forth above.

The Contractor shall provide a local man, responsible for providing and maintaining warning lights, and barricades on the project whenever the Contractor shuts down his operations for a period of time (nights or weekends). His name, address and phone number shall be given to both the Engineer and the Police Department.

If, in the Engineer's opinion, it becomes necessary to apply a dust palliative along the construction projects to relieve abutting homeowners from unreasonable dirt and dust conditions, the Contractor shall furnish and apply such dust preventives at his own expense. The Contractor shall take all reasonable measures to protect the Owner from extensive complaints regarding dust, as well as complaints pertaining to dirt or debris dropped on streets leading to the waste disposal areas during pavement removal and excavating operations.

PROTECTION AND RESTORATION OF PROPERTY AND PROPERTY MARKS

The Contractor shall notify, in writing, the Owners of all corporate or private property which interferes with the work advising them of the nature of the interference, and shall arrange with them for the disposition of such property. The Contractor shall furnish the Engineer upon request with copies of all such notifications and final agreements.

The Contractor shall use every precaution to prevent the damage or destruction of corporate or private property such as poles, trees, shrubbery, crops and fences adjacent to or interfering with the work; all overhead structures such as wires, cables, etc., and all underground structures such as water or gas shut-off boxes, water meters, pipes, conduits, etc., within or outside of the right-of-way. He shall protect and carefully preserve all property marks until the Owner or an authorized surveyor or agent has witnessed or otherwise referenced their location or relocation.

The Contractor shall be responsible for the damage or destruction of property of any character resulting from neglect, misconduct, or omission in his manner or method of execution or non-execution of the work, or caused by defective work or the use of unsatisfactory materials, and such responsibility shall not be released until the work shall have been completed and accepted and the requirements of the contract complied with.

When public or private property is damaged or destroyed, the Contractor shall, at his own expense, restore such property to a condition similar or equal to that existing before such damage or injury was done, by repairing, rebuilding, or replacing it as may be directed, or he shall otherwise make good such damage or destruction in any acceptable manner. If he fails to do so, the Engineer may, after the expiration of a period of forty-eight (48) hours after giving notice to him in writing, proceed to repair, rebuild or otherwise restore such property as may be deemed necessary, and the cost thereof shall be deducted from any compensation due or which may become due the contractor under his contract.

The Contractor will be liable for all damage caused by fires and shall under no consideration start fires without securing the necessary permits and approval of the State Fire Warden, City Fire Chief, Department of Natural Resources or other authority having jurisdiction even though he may be ordered or required to do such burning.

RESPONSIBILITY FOR DAMAGE CLAIMS

The Contractor and his Surety shall indemnify and save harmless the Engineer, City, its officers and employees, from all suits, actions or claims of any character brought because of any injuries or damages on account of the operations of the said Contractor; or on account of, or in consequences of any neglect in safeguarding the work; or through use of unacceptable materials in constructing the work; or because of any act or omission, neglect or misconduct of said Contractor; or because of any claims or amounts recovered for any infringement of patent, trademark or copyright; or from any claims or amounts arising or recovered under the Workmen's Compensation Law; or any other law, ordinance, order or decree; and so much of the money due the said

Contractor under and by the City for such purposes, may be retained for the use of the City; or, in case no money is retained, his Surety shall be held.

The City shall not be liable to the Contractor for damages or delays resulting from work by third parties or by injunctions or other restraining orders obtained by third parties.

The Contractor shall provide and maintain during the effective life of his contract public liability and property damage liability insurance to protect him and all of his construction subcontractors, together with the Owner, from claims for damages for personal injury, accidental death, and damage to property, which may arise from operations under his contract, whether such operations be by himself or by any such subcontractor or by anyone directly or indirectly employed by either of them.

OPENING OF SECTION OF HIGHWAY TO TRAFFIC

The work under construction shall not be opened to traffic until so directed or authorized by the Engineer. Whenever, in the opinion of the Engineer, all of the work or any portion thereof is in an acceptable condition for travel, such portions may be opened to traffic as may be directed by the Engineer in writing, but such opening shall not be construed as assumption of the maintenance by the Owner as prescribed under "Partial Acceptance" unless so specifically provided, nor as an acceptance of the roadway or any part of it, nor as a waiver of any part of it, nor as a waiver of any of the provisions of the specifications and contract.

Whenever the Contractor is required to open to traffic all of the work or any portion thereof in accordance with the provisions given herein, or whenever he shall of his own volition and when so authorized by the Engineer, open to traffic all of the work or any portion thereof prior to final acceptance, he shall conduct the remainder of his construction operation so as to cause the least obstruction to traffic.

CONTRACTOR'S RESPONSIBILITY FOR WORK

The work shall be under the charge and care of the Contractor until final acceptance by the Engineer, except when otherwise provided in a manner as prescribed under "Partial Acceptance" and the Contractor shall take every precaution against injury or damage to the work or to any part thereof, and shall preserve and maintain the same at his own cost and expense.

PERSONAL LIABILITY OF PUBLIC OFFICIALS AND EMPLOYEES

In carrying out any of the above provisions or in exercising any power or authority granted to him by this contract, there shall be no liability upon said Engineer or his authorized assistants, either personally or as an official of the City, it being understood that in such matters he acts as an agent and representative of the City.

NO WAIVER OF LEGAL RIGHTS

The City shall not be precluded or estopped by any measurement, estimate, or certificate made either before or after, the completion and acceptance of the work and payment therefore, from showing the true amount and character of the work performed and materials, furnished by the Contractor, or from showing that any such measurement, estimate or certificate is untrue or incorrectly made, or that the work or materials do not conform in fact to the contract. The City shall not be precluded or estopped, notwithstanding any such measurements, estimate, or certificate and payment in accordance therewith, from recovering from the Contractor and his Sureties such damages as it may sustain by reason of his failure to comply with the terms of the contract. Neither the acceptance by the City nor any representative of the City, nor any payment for or acceptance of the hole or any part of the work, nor any extension of time, nor any possession taken by the City, shall operate as a waiver of any portion of the contract, or of any power herein reserved, or any right to damages herein provided. A waiver of any breach of the contract shall not be held to be waiver of any other or subsequent breach.

INSURANCE REQUIREMENTS

The Contractor shall purchase and maintain such insurance as will protect him and the City of Fond du Lac, its officials and employees, from claims which may arise out of or result from the Contractor's execution of the work, whether such execution by himself or by any subcontractor or by anyone directly or indirectly employed by any of them or by anyone for whose acts any of them may be liable.

No Contractor shall commence work on any contract until he has obtained all insurance required under this section and such insurance has been approved by the City. Nor shall any Contractor allow any subcontractor to commence work on his subcontract until the same insurance has been obtained by the subcontractor and approved by the City. Each and every Contractor and subcontractor shall maintain all required insurance under this section during the life of the contract.

1. Certificates of Insurance: Certificates of Insurance on all policies specified shall be filed with the Engineer which shall include a fifteen (15) day prior written notice of material change or cancellation to the City and which will clearly state that contractual liability insurance is provided and, if applicable to work under this contract, explosion, collapse and underground coverage.

2. Types of Insurance:

   a) Workmen's Compensation Insurance to meet Wisconsin Statutory requirements.
   b) Automobile Liability Insurance: limits of liability applicable to automobile insurance shall be not less than: Bodily Injury and Property Damage Liability $1,000,000 each occurrence, $1,000,000 aggregate or $1,000,000 Single Limit Comprehensive Automobile Liability to include all owned non-owned, and hired automobiles. $1,000,000 for Property Damage.

   c) Public Liability and Property Damage Insurance: Limits of Liability applicable to Public Liability and Property Damage Insurance shall not be less than:

      $2,000,000 for injuries, including accidental death, to any one person, and subject to the same limit for each person.

      $2,000,000 aggregate or $2,000,000 Single Limit.

      $2,000,000 for Property Damage.

   d) The Contractor shall secure, if applicable, "All Risk" type Builders Risk Insurance for work to be performed. Unless specifically authorized by the owner, the amount of such insurance shall not be less than the contract price totaled in the bid. The policy shall cover not less than the losses due to fire, explosion, hail, lighting, vandalism, theft, malicious mischief, wind, collapse, riot, aircraft, and smoke during contract time, and until the work is accepted by the Owner.

      The above policies shall name as the insured the Contractor and the Owner, as an additional insured.

3. Indemnification of the City and its Officials: The Contractor shall indemnify and hold harmless the City, its officers, agents and employees from and against all claims, damages, losses and expenses including attorney's fees arising out of or resulting from the performance of the work, provided that any such claim, damage loss or expense (a) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the work itself) including the loss of use resulting therefrom and (b) is caused in whole or in part by any negligent act or omission of the Contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder.

In any and all claims against the City, its officers, agents and employees by any employees of the Contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation under this section shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any subcontractor under Workmen's Compensation Act, disability benefit acts or other employee benefit acts.

PERSONAL LIABILITY OF THE OWNER, AND ITS EMPLOYEES AND AGENTS

In carrying out any of the provisions of this contract or in exercising any power or authority granted to them thereby, there shall be no personal liability upon the City, its agents and employees, it being understood that in such matters they act as agents and representatives of the City. Any right of action by the Contractor against the City, or its agents and employees, is hereby expressly waived.

PUBLIC WORKS CONTRACT WAGE RATES

The Contractor, on any public works contract with the City of Fond du Lac, shall submit upon demand of the City a certified copy of his payroll which shall indicate the hourly wage rates being paid; and the number of hours being worked by each employee, and the City's right to so demand shall continue during the life of the contract.

The hours and current minimum wage rates to be paid pursuant to Section 66.0903 Wisconsin Statutes (See City Clerk's File) are incorporated into and made a part of this contract. Said schedule may be attached at the end of these specifications for the Contractor's information, but it shall be the Contractor's responsibility to check the data listed in such schedule to insure that all such information is current and correct.
The bidder shall note that under Wisconsin Statutes Subsection 66.0903(8) a copy of the wage rates determination issued for this project must be posted in a least one conspicuous and easily accessible place at the site of the project. It shall be the responsibility of the successful bidder under this contract to make such posting as required above.

Also, Subsection 66.0903(9) requires that upon completion the project and prior to final payment, each Contractor must file with the municipality an affidavit stating that he has complied fully with the provisions and requirements of the wage rate determination and that he has received evidence of compliance from each of his agents and subcontractors. The Owner or City will not make final payment on this contract until the successful bidder has furnished the City with such evidence of compliance.

EQUAL OPPORTUNITY

In connection with the performance of work under this Contract, the Contractor agrees not to discriminate against any employee or applicant for employment because of age, race, religion, color, handicap, sex, physical condition, developmental disabilities as defined in Section 51.01 (5), Wisconsin Statutes, sexual orientation or national origin. This provision shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places available for employees and applicants, employment notices to be provided by the contracting officer setting forth the provision of the non-discrimination clause.

SECTION 107

PROSECUTION AND PROGRESS

SUBLETTING OR ASSIGNMENT OF CONTRACT

The Contractor shall not sublet, sell, transfer, assign, or otherwise dispose of the contract or any portion thereof, or his right, title, or interest therein, without written consent of the Owner.

Consent to sublet any portion of the contract shall not be construed to relieve the Contractor of any responsibility for the fulfillment of the contract or to release the Contractor of his liability under the contract and bond.

All transactions of the Engineer 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 character and competence.

Request for permission to sublet any portion of the contract shall be writing and accompanied by a showing that the organization which will perform the work is particularly experienced and equipped for such work. The Engineer may also require that each request be accompanied by a copy of the proposed subcontract. Any subsequent change in the terms of the subcontract shall be subject to separate approval.

Work by a subcontractor shall not proceed until the request for permission to sublet such work is approved. If the Contractor proposes to have work performed by a person or firm other than a subcontractor, he shall inform the Engineer in writing, if required, of the specific arrangement under which the work will be performed, so that it may be established whether or not such arrangement constitutes subcontracting.

PROSECUTION OF THE WORK

Unless otherwise provided in the Special Provisions, the Contractor shall not begin the work to be performed under the contract before receiving written notification from the Engineer to do so, and shall thereupon begin the work within ten (10) days after the date of such written notice.

Definite notice of intention to start work shall be given to the Engineer at least seventy-two (72) hours in advance of beginning work.

The Contractor shall employ an ample force of workers and provide construction plant properly adapted to the work and of sufficient capacity and efficiency to accomplish the work in a safe and workmanlike manner at the rate of progress specified. All plants shall be maintained in good working order and provision shall be made for immediate emergency repairs.

Should the Contractor fail to maintain the rate of progress required to complete the work within the contract time specified, the Engineer may require that (either or both) additional workers and equipment be placed on the work, or a reorganization of plant layout be effected in order that the work will be brought up to schedule and maintained there. Should the Contractor fail to comply therewith, the Engineer may proceed under the provisions of Default of Contract.

In the event work is prosecuted during adverse weather conditions, the Contractor will be required to exercise such precautions necessary to produce satisfactory work, and shall protect the finished work from the elements. It is agreed and understood that the cost thereof has been included in the unit prices bid for the various items of work in the contract and that no extra compensation will be allowed therefore.

LIMITATION OF OPERATIONS

The Contractor shall conduct his work so as to create a minimum amount of inconvenience to vehicular and foot traffic. At any time when, in the judgment of the Engineer, the Contractor has obstructed or closed, or is carrying on operations on a greater portion of the street than is necessary for the proper prosecution of the work, the Engineer may require the Contractor to finish the sections on which work is in progress before work is started on any additional sections.

CHARACTER OF WORKMEN

The Contractor shall employ such superintendents, foremen and workers as are able and competent. The Engineer may demand in writing the dismissal of any person or persons employed by the Contractor, about or upon the work who shall misconduct himself or themselves or be incompetent or negligent in the due and proper performance of his or their duties, or neglects or refuses to comply with the direction given, and such person or persons shall not be employed again thereon without the written consent of the Engineer. Should the Contractor continue to employ or again employ such person or persons, the Engineer may withhold all estimates which are due or may become due, or the Engineer may suspend the work until such orders are complied with.

METHODS AND EQUIPMENT

The Contractor shall provide and furnish the machinery equipment and tools necessary to perform the work. These shall be in such condition and of such capacity to produce a satisfactory quality of work and to complete the same within the contract time.

Equipment shall be such that no injury to the roadway, structures, adjacent property, or other highways will result from its use, and it shall conform to the requirements set forth in detail under specific items or classes of work.

The gross weight of vehicle and load for vehicle used in the transportation of materials for pavements, base courses and shoulders over the subgrade, base course, or pavement shall not exceed that permitted by the Wisconsin Statutes for Class "A" highways.

Failure on the part of the Contractor to provide adequate equipment, maintained in proper working order, may be sufficient cause for suspension of specific operations until compliance is attained or may constitute cause for Default of Contract.

When the methods and equipment to be used by the Contractor in accomplishing the construction are not prescribed in the contract, the Contractor is free to use any methods or equipment that he demonstrates to the satisfaction of the Engineer will accomplish the contract work in conformity with the requirements of the contract.

When the contract specifies the use of certain methods and equipment for the work, such methods and equipment shall be used unless others are authorized by the Engineer. If the Contractor desires to use a method or type of equipment other than those specified in the contract, he may request authority from the Engineer to do so. The request shall be made in writing and shall include a full description of the methods and equipment proposed and the reason for desiring to make the change. If approval is given, it will be on the condition that the Contractor will be fully responsible for producing construction work in conformity with contract requirements. If, after trial use of the substituted methods or equipment, the Engineer determines that the work produced does not meet contract requirements, the Contractor shall discontinue the use of the substitute method or equipment and shall complete the remaining construction with the specified methods and equipment. The Contractor shall remove the deficient work and replace it with work of specified quality, or take such other corrective action as the Engineer may direct. No change will be made in basis of payment for the construction items involved nor in contract time as a result of authorizing a change of methods or equipment under these provisions.

TEMPORARY SUSPENSION OF WORK

The Engineer shall have the authority to suspend the work wholly or in part for such period or periods as he may deem necessary, due to unsuitable weather and such other conditions as are considered unfavorable for prosecution of satisfactory work, or for such time as is necessary due to the failure on the part of the Contractor to carry out orders given to perform any or all provisions of the contract. Authorizations or orders to suspend work shall be in writing. Unless otherwise specifically provided, no additional or extra compensation or additional contract time will be allowed due to suspension of operations.

In the event it should become necessary to stop work for an indefinite period, the Contractor shall store all materials in such a manner that they will not obstruct or impede the traveling public unnecessarily, nor become damaged in any way, and he shall take every precaution to prevent damage to or deterioration of the work performed, he shall provide suitable drainage of the roadway by opening ditches, drains, etc. and shall erect temporary structures where necessary.

DETERMINATION AND EXTENSION OF CONTRACT TIME FOR COMPLETION

The time for completion of the work contemplated under the contract will be specified in the proposal either as a specific number of calendar days including Sundays and Holidays, or as a given date. It is understood that the completion of the work with the time as specified is an essential part of the contract.

Work shall be prosecuted diligently to completion. Failure to begin operations, or in the diligent prosecution thereof within the intent of this subsection, may be considered as a breach of contract and render the Contractor liable to action under Default of Contract, or the revocation of his privilege to bid additional work, or both.

The contract starting date, for purposes of determining contract time charges and extensions, is defined as follows:

When the contract provides for started work by a fixed or given calendar date, such date will be construed to be the contract starting date irrespective of the date construction operations are started.

When the contract provides for starting work not later than ten (10) days after the date of written notification from the Engineer to do so, or not later than ten (10) days after the date of official notification to the Contract of the final execution of the contract, the contract starting date will be construed to be the date construction operations are started or the tenth day following the date of such notification, whichever is earlier.

Contract time on the calendar day basis will not be charged during periods of complete suspension of operations, when approved by the Owner in conjunction with an order by the Engineer suspending operations as elsewhere herein set forth, or when so provided in the Special Provisions.

Contract time will be extended in an amount as is mutually agreed on by the Owner and the Contractor, on the basis of Contract Change order involving alterations in the contract affecting the prosecution of work, or involving extra or additional work, when such alterations are necessary for the purposes or convenience of the Owner, or when such extra or additional work is of such character or is ordered to be done at such a time that the amount of time reasonably necessary to perform such work is disproportionate to the contract time originally set up in the proposal. The agreement for extended time on this account shall be arrived at concurrently with and as a part of the consideration for the specific alteration or extra or additional work covered by that order. In the event no specific mention thereof is made in such order the value of the extra or additional work will be included in the computation for extension of contract time for increased value of work hereinafter set forth.

In the event that the money value of work completed, exclusive of such extra or additional work for which additional time has been agreed upon as herein before set forth, is in excess of the amount of the original

contract, the contract time will be extended proportionately in an amount, computed to the nearest whole day, in the ratio that the final cost of the work, exclusive of the cost of such extra or additional work for which additional time had been agreed upon as previously set forth, bears to the total amount of the original contract. When a contract completion date is stipulated, the equivalent contract time for this purpose will be construed as the total elapsed calendar days between the contract starting date and the contract completion date.

Should the Contractor find it impossible to complete with work on or before the time for completion as specified in the contract, or extended as above set forth, he may, at any time prior to stipulated for completion, or extended as above set forth, make a written request to the Engineer for an extension of time, setting forth therein the reasons which he believes will justify the granting of this request. If the Owner finds that the work was delayed because of conditions beyond the control of the Contractor, he may grant an extension of time for completion in such an amount as he finds to be warranted and justified.

FAILURE TO COMPLETE WORK ON TIME

Should the Contractor fail to complete the work within the time agreed upon in the contract or within such extra time as may have been allowed by the extensions, there shall be deducted from any moneys due or that may become due the Contractor the sum set forth in the following schedule for each and every calendar day, including Sundays and Holidays, that the work shall remain uncompleted. This sum shall be considered and treated not as a penalty by as fixed, agreed and liquidated damages due the Owner from the Contractor by reason of inconvenience to the public, added cost of engineering and supervision, maintenance of detours and other items which have caused an expenditure of public funds resulting from his failure to complete the work within the time specified in the contract.

Permitting the Contractor to continue and finish the work or any part of it after the time fixed for its completion, or after the date to which the time for completion may have been extended, shall in no way operate as a waiver on the part of the Owner of any of its rights under the contract.

SCHEDULE OF LIQUIDATED DAMAGES

The fixed, agreed and liquidated damages shall be assessed in accordance with the following schedule.

Original Contract Amount		**Daily Charge**	
From	To	Calendar Day	Working Day
$0	$50,000	$100	$250
50,000	100,000	150	275
100,000	300,000	200	425
300,000	500,000	325	675
500,000	1,000,000	475	1,200
1,000,000	--	550	1,300

The sum shall be considered and treated not as a penalty but as a fixed, agreed, and liquidated damages due to the City of Fond du Lac from the Contractor by reason of inconvenience to the public, added cost of engineering and supervision and other items which have caused an expenditure of public funds resulting from failure to complete the work within the time specified in the proposal.

Permitting the Contractor to continue working after the expiration of the time fixed for its completion or after the date of time extension shall in not way act as a waiver on the part of the City of Fond du Lac for any of its rights under the contract.

DEFAULT OF CONTRACT

If the Contractor fails to begin the work under contract within the time specified, or fails to perform the work with sufficient workmen and equipment or with sufficient material to insure the completion of said work within the specified time, or shall perform the work unsuitably, or shall neglect or refuse to remove materials or perform anew such work as shall be rejected as defective and unsuitable, or shall discontinue the prosecution of the work, or if the Contractor shall become insolvent or be declared bankrupt, or shall commit any act of bankruptcy or insolvency, or allow any final judgment to stand against him unsatisfied for a period of forty-eight (48) hours, or shall make an assignment for the benefit of creditors or if the Contractor is determined to be violation of the provisions of the contract relative to hours of labor, wages, character, and classification of workmen employed, or from any other cause whatsoever shall not carry on the work in an acceptable manner, the Engineer shall given notice in writing to the Contractor and his Surety of such delay, neglect, or default, specifying the same; and if the Contractor, within a period of ten (10) days after the date of such notice, shall not proceed in accordance therewith, then the Owner shall, upon written certification by the Engineer of the fact of such delay, neglect or default and the Contractor's failure to comply with such notice, have full power and authority to forfeit the rights of the Contractor and at its option to call upon the Surety to complete the work in accordance with there terms of the contract; or it may take over the work upon giving notice to the surety, including any or all materials and equipment on the ground as may be suitable and acceptable, and may complete the work by or on its own force account, or may enter into a new agreement for the completion of said contract according to the terms and provisions thereof, or use such other methods as, in its opinion, shall be required for the completion of said contract in an acceptable manner. All costs and charges incurred by the Owner together with the cost of completing the work under contract, shall be deducted from any moneys due or which may become due on such contract. In case the expense so incurred by the Owner shall be less than the sum which would have been payable under the contract if it had been completed by said Contractor, then said Contract shall be entitled to receive the difference subject to any claims for liens thereon which may be filed with the Owner, or any valid assignment filed with it, and in case such expense shall exceed the sum which would have been payable under the contract, the Contractor and the Surety shall be liable and shall pay to the Owner the amount of such excess.

EMERGENCY DEFERMENT OR CANCELLATION OF CONTRACT

1. General: The Owner and the Contractor, in the event of a national emergency that creates a shortage of materials, labor, or equipment, (a) by reason of war conditions involving the United States, or (b) by reason of orders of the United States Government or its duly authorized agencies, or (c) executive order with respect to prosecution of war or national defense, may upon a finding by the Owner that such emergencies do exist, and by reason of which such Contractor is unable to proceed with his construction contract, or any part thereof, as hereinafter provided.

2. Deferment: In all cases where construction is deferred, it shall be done by written agreement between the Owner and the Contractor stating the terms and condition of such deferment. In such cases, the Contract will be paid for eighty-five (85) percent of the amount of work already completed, at contract unit prices, or agreed prices where no unit prices were included in the contract. Provided, however, that when such action is advisable, the Owner and Contractor, with the written approval of Surety for the Contractor, may upon approval by the Engineer make partial payment as herein provided for not to exceed ninety-two and one half (92 ½) percent of such amount of work already completed. If agreement upon the terms and conditions of such deferment cannot be agreed upon, the original contract is to remain in full force and effect.

3. Cancellation: Where the contract, or any portion thereof is definitely terminated or canceled; the Contractor released before all items of work included in his contract have been completed, payment will be made for actual items of work completed at contract unit prices, or agreed prices where no unit prices are contained in the contract, and no claim for less of anticipated profits shall be considered. Acceptable materials, obtained by the Contractor for the work, that have been inspected, tested and accepted by the Owner, and that are not incorporated in the work, may, at the option of the Owner, be purchased from the

Contractor at actual cost as shown by receipted bills at such points of delivery as may be designated by the Owner.

If agreement upon the terms and conditions of cancellation of all or any part of any construction contract cannot be agreed upon, the original contract, or uncompleted part thereof, shall remain in full force and effect.

TERMINATION OF THE CONTRACTOR'S RESPONSIBILITY

Whenever the improvement contemplated and covered by the contract shall have been completely performed on the part of the Contractor and all parts of the work have been approved and accepted by the Engineer, according to the contract, and the final estimate paid, the Contractor's obligations shall then be considered fulfilled, except as set forth in his Contractor's bond.

SECTION 108

MEASUREMENT AND PAYMENT

MEASUREMENT OF QUANTITIES

The determination of quantities of work acceptably completed under the terms of the contract, or as directed by the Engineer in writing, will be made by the Engineer and based on measurements taken by him or his assistants. These measurements will be taken according to the United States standard measure. All surface and linear measurements will be taken horizontally unless otherwise shown on plans or specified. Structures shall be measured to the neat lines as shown on the plans, or as ordered in writing by the Engineer.
When base course, topsoil, surface course, or any materials are measured by the cubic yard in the vehicle, such measurement shall be taken at the point of delivery. The capacity of all vehicles shall be plainly marked on said vehicle and the capacity or marking shall not be changed without permission of the Engineer. The Engineer may require all vehicles to have uniform capacity.

SCOPE OF PAYMENT

The Contractor shall accept the compensation, as herein provided, in full payment for furnishing all materials, equipment, labor, tools, and incidentals necessary to complete the work and for performing all work contemplated and embraced under the contract; also for less of damage arising from the nature of the work, or from the action of the elements, or from any unforeseen difficulties which may be encountered during the prosecution of the work until the final acceptance by the Engineer, and for all risks of every description connected with the prosecution of the work, for all expenses incurred in consequence of the suspension of discontinuance of the work as herein specified, and for any infringement of patent, trade-mark, or copyright; and payment of any estimate or of any retained percentage shall not relieve the Contractor of any obligation to make good any defective work or material.

No moneys, payable under the contract, or any part thereof, except the estimate for the first month or period, shall become due and payable if the Owner so elects, until the Contractor shall satisfy the said Owner by supplying release claims and/or lien waivers that he fully settled or paid for all materials and equipment used in or upon the work and labor done in connection therewith, and the Owner, if he so elects may pay any or all such bills, wholly or in part, and deduct the amount or amounts so paid from any monthly or final estimate, excepting the first estimate.

In the event the Surety given by the Contractor becomes insolvent, or is placed in the hands of a receiver, or has its right to do business in a State revoked as provided by law, the Owner may, at its election, withhold payment of any estimate filed or approved by the Engineer until the Contractor shall give a good and sufficient bond in lieu of the bond so executed by such Surety.

PAYMENT FOR INCREASED OR DECREASED QUANTITIES

When alterations in the plans or quantities of work not requiring supplemental agreements, as herein before provided for, are ordered and performed, the Contractor shall accept payment in full at the contract price for the actual quantities of work done. No allowance will be made for anticipated profits. Increased or decreased work involving supplemental agreements will be paid for as stipulated in such agreements.

PAYMENT FOR OMITTED ITEMS

The Engineer shall have the right to cancel or alter the portions of the contract relating to the construction of any item or items by the payment to the Contractor of a fair and equitable amount covering all items of costs incurred prior to the date of cancellation, alteration, or suspension of the work by order of the Engineer. The Contractor shall accept payment in full at the contract unit prices for any work actually performed prior to the date of cancellation, alteration, or suspension of the work by the order of the Engineer. No allowance will be made for anticipated profits in reimbursements to the Contractor for omitted items of work. Acceptable materials ordered by the Contractor or delivered on the work prior to the date of cancellation, alteration, or suspension of the work by order of the Engineer will be paid for at the actual cost to the Contractor and shall thereupon become the property of the Owner. The Contractor shall submit immediately certified statements covering all money expended in preparation for work on any omitted item when such preparation has not value to the remaining items of the contract, or for a proportionate amount based on the total contract price over which such preparation would ordinarily be distributed when other items are included in such preparation.

PARTIAL PAYMENTS

The Engineer will make written estimates of the materials complete in place and the amount of work performed in accordance with the contract during the current period of time between estimates and the value thereof figured at the contract unit prices. Retained percentages will be in accordance to Wisconsin Statutes 66.0901(9) for public works projects. The retainage shall be an amount equal to not more than 5% of the estimate until 50% of the work has been completed. At 50% completion, further partial payments shall be made in full to the contractor and no additional amounts will be retained unless the engineer certifies that the job is not proceeding satisfactorily, but amounts previously retained shall not be paid to the contractor. At 50% completion or any time after 50% completion when the progress of the work is not satisfactory, additional amounts may be retained but the total retainage will not be more than 10% of the value of the work completed. When the work has been substantially completed except for work which cannot be completed because of weather conditions, lack of materials or other reasons which in the judgment of the municipality are valid reasons for noncompletion, the municipality may make additional payments, retaining at all times an amount sufficient to cover the estimated cost of the work still to be completed. Estimates will be made monthly or for such longer periods as mutually agreed upon. No estimates except final estimates will be made for a sum less than five hundred dollars ($500.00). The estimates will be approximate only and all partial or monthly estimates or payments shall be subject to correction in the estimates rendered following discovery of an error in any previous estimates.

Should any defective work or material be discovered, or should a reasonable doubt arise as to the integrity of any part of the work completed previous to the final acceptance and payment, there will be deducted from the first estimate rendered after the discovery of such work an amount equal in value to the defective or questioned work, and this work will not be included in a subsequent estimate until the defects have been remedied or the causes for doubt removed.

ACCEPTANCE AND FINAL PAYMENT

Within ten (10) days after the completion of any contract and before final acceptance, a final inspection must be made by the Engineer to determine whether the work has been completed in accordance with the contract, plans and specifications. All prior partial estimates and payments shall be subject to correction in the final estimate

and payment. When the work has been so completed and certified to the Owner, the work will be considered accepted and the final estimate shall be executed and submitted.

Neither the final payment nor any provision in the contract documents shall relieve the Contractor of the responsibility for negligence or faulty materials or workmanship, and upon written notice, shall remove any defects due thereto, and pay for any damage due to other work resulting therefrom which shall appear within one (1) year after the date of completion and acceptance. A guarantee fund, equal to one (1%) percent of the contract will be held from the final amount due the Contractor, for this period will be one (1) year.

FRAZIER POINT PIER AND PLAZA - SPECIAL PROVISIONS

General

The work under this contract for the construction of the Frazier Point pier and plaza construction project, Fond du Lac, Wisconsin shall be in accordance with the plans. This section contains an explanation of bid items contained in this bid proposal and supersedes the technical specifications if conflicts arise. The term "standard specification" in these special provisions refers to the "State of Wisconsin, Department of Transportation, Standard Specifications for Highway and Structure Construction", Edition of 2008. and shall be executed under the requirements of the General Specifications, Technical Specifications, Standard Specifications, and these special provisions.

Item 1 – Mobilization
This work shall include the cost of moving in equipment and supplies to the site, the establishment of necessary stockpiles and trailer and moving the same off site. The quantity of Mobilization shall be measured and paid for at the contract lump sum price.

Item 2 - Silt Fence*
This work consists of furnishing, installing, and maintaining silt fence at the locations designated on the Plans and where directed by the Engineer, removing and disposing sediment deposits, and removing fence at the completion of the work.

Installation: Silt fence installation, maintenance and removal shall comply with the WDNR Conservation Practice Standards No. 1056 (attached after technical specifications).

Method of Measurement: Measurement will be the number of linear feet of silt fence acceptably installed and maintained. Measurement will be along base of fence, center to center of end posts, for each section of fence.

Basis of Payment: This work will be paid for at the contract unit price per linear foot. This price shall be full compensation for furnishing all materials, including delivering, installing, maintenance, removal and for all labor, equipment, tools and incidentals necessary to complete this item of work.

Item 3 – Silt Curtain
This work consists of furnishing, and installing, silt curtain at the locations designated on the Plans and where directed by the Engineer.

Installation: Turbidity barrier installation and maintenance shall comply with the WDNR Conservation Practice Standards No. 1070 (attached after technical specifications). Silt curtain must be maintained for the duration of the project and removed prior to final payment.

Method of Measurement: This item will be measured on a lump sum basis and will be inspected for effective control of sediment.

*Also a BID ALT Item

Basis of Payment: This work will be paid for at the contract unit price per each. This price shall be full compensation for furnishing all materials, including delivering, installing, maintenance, removal, and for all labor, equipment, tools and incidentals necessary to complete this item of work.

Item 4 – Track Mat
This work consists of furnishing, installing, and maintaining construction entrance at the locations designated on the Plans and where directed by the Engineer, scraping and removing sediment deposits or top dressing, and removing pad at the completion of the work.

Installation: Track mat installation, maintenance and removal shall comply with the WDNR Conservation Practice Standard No. 1057 (attached after technical specifications).

Method of Measurement: Measurement will be the number of construction entrances acceptably installed. Payment will be made at the contract unit price each.

Basis of Payment: This work will be paid for at the contract unit price per each. This price shall be full compensation for furnishing all materials, including delivering, installing, maintenance, removal, and for all labor, equipment, tools and incidentals necessary to complete this item of work.

Item 5 - Site Clearing*
This work consists of removing and disposing of vegetation including removing stumps and roots and protection fencing for trees and site features as shown on the plans. This item includes furnishing all necessary materials and such as necessary or incidental thereto, to complete the item in the location and manner specified in the plans and section 311000 of the technical specifications

Method of Measurement: The quantity of site clearing shall be measured and paid for at the contract lump sum price.

Basis of Payment: Payment is full compensation for clearing and grubbing of all vegetation including cutting and disposing of trees, stumps, roots, logs, hauling, and for all labor, tools, equipment and incidentals necessary to complete this item of work. Tree protection and other protective fences are considered incidental to this bid item.

Item 6 – Demolition and Misc. Removal*
This work consists of removing or abandoning miscellaneous structures including asphaltic surfaces, concrete pavement, curb and gutter, remnant slabs, miscellaneous structures and enclosures, and abandoning utilities as shown on the plans, in accordance with Section 311000 of the Technical Specifications and hereinafter provided.

Construction: Excavated soil must reused or disposed of in a legal manner. Any observed unnatural substances must be reported immediately to the Engineer.

Removing Asphaltic Surfaces: Retain existing aggregate base when removing asphalt under proposed parking lot.

Removing Concrete Pavement: This work item includes removing the existing concrete pavement and base material

Removing Curb and Gutter: This work item includes removing the existing concrete pavement. Retain aggregate base when removing curb and gutter under proposed parking lot. Aggregate base to be reused if possible in proposed plaza and parking areas.

Removing Remnant Slabs: This work item includes removing the existing concrete slab riprap and miscellaneous surfaces designated within the project limits.

Removing Miscellaneous Structures: This work includes all items to be removed to complete the project not listed individual in the other bid items such as signs and fencing etc..

Abandoning Utilities: This work item includes coordination with local utilities for removal and/or abandonment of existing utilities as noted on plan.

Method of Measurement: The City will measure the bid items as listed above by the unit acceptably completed.

Basis of Payment: The City will pay for the items listed above or shown on the plans as a contract lump sum item.

Payment is full compensation for removal of items including excavation, storage, disposal, hauling, backfilling, and for furnishing all labor, tools, equipment, and incidentals necessary to complete the contract work.

Item 7 – Earthwork*

This work consists of stripping and stockpiling of topsoil, excavating, filling, grading, compacting, preparation of sub-grade, disposal of excess materials, temporary drainage, berming, and related earthwork for the project. Work shall be performed in accordance with Section 31200 of the technical specifications. The aggregate base is not included in this bid item but is included in the individual pavement bid items.

Construction: Excavated soil must be removed and disposed of in a legal manner if not reused on the site per plans.

Method of Measurement: The quantity of site grading shall be measured and paid for at the contract lump sum price.

Basis of Payment: This work will be paid for at the contract unit lump sum price for site grading. Payment is full compensation for furnishing and placing all materials, excavation, furnishing borrow, disposal, hauling, placing, grading; and for furnishing all

labor, tools, equipment, and incidentals necessary to complete the contract work. The cost for the aggregate base is covered under the pavement bid items.

Item 8- Concrete Pavement*, Item 9-Accessible Curb Ramp*, Item 10-Overlook Concrete Slab

This work consists of furnishing and installing concrete pavement and curbing including concrete walks, accessible curb ramps, thickened edge walk, and curb and gutters, including forming, reinforcing, aggregate base, and concrete and finishing at locations designated on the Plans in accordance with Sections 312000 and 321313 of the technical specifications. Note that aggregate base is included as part of these bid items.

Construction: Install detachable warning field for accessible curb ramps according to manufacturer's recommendations.

Standard Finish Concrete Pavement: Typical City of Fond du Lac broom finish, running in an NE to SW plan direction.

Rough Finish Concrete Pavement: Rough broom finish longitudinally applied along concrete header band. Finish should be of a depth and degree as to inform people the edge of the concrete is adjacent. Provide 2'x2' sample of rough broom finish.

Method of Measurement: Measurement for each bid item is listed below by the unit acceptably completed.

Basis of Payment: This work will be paid for at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
8	Concrete Pavement	SF
9	Accessible Curb Ramp	EA
10	Overlook Concrete Slab	SF

Payment is full compensation for furnishing all materials, including delivering, forming, installing, reinforcing, aggregate base, concrete, placing, curb ramp detectable warning field, finishing, jointing and for all labor, equipment, tools and incidentals necessary to complete this item of work.

Item 11 – Rip Rap Stone

This section describes furnishing and placing riprap as identified on the Plans and in accordance with the following specifications.

Materials: Geotextile fabric Type HR (Conform to WisDOT specification 645.3.7) or approved equal

Furnish durable field or quarry stone that is sound, hard, dense, resistant to the action of air and water and free of seams, cracks, or other structural defects. Use stone pieces with a length and width no more than twice the thickness. Do not place material without the engineer's approval of the stone quality, size, and shape.

Average dimensions of the stone pieces shall be derived by averaging measurements of the thickness, width, and length. Furnish stones to the size requirements for the riprap grade listed below (per WisDOT 2010 Standard Specifications). Size requirements are expressed as the percent of the gross in-place riprap volume occupied by stones within average dimension size ranges for each riprap grade as follows:

Heavy Riprap (inches):	In-Place Riprap Volume Occupied by Stones
>25	0%
18-20	10-14%
14-18	15-21%
6.5-14	20-28%
<6.5	5-7%
<1	2% or less

The contractor may NOT substitute waste concrete slabs for stone.

Construction: Prepare bed for the riprap by excavating, shaping the slopes, and constructing the toe for the riprap installation. Install geotextile. After placing the riprap, restore the surface of adjacent work and legally dispose of surplus material.

The contractor may place heavy riprap by any mechanical means that produce a completed job within reasonable tolerances of the typical section the plans show. Limit handwork to the amount necessary to fill large voids or to correct segregated areas. Place riprap over type HR geotextile fabric.

Method of Measurement: Measurement for this bid item will be by square yards acceptably completed.

Basis of Payment: This work will be paid for at the contract square yard price. Payment for all bid items under this item are full compensation for preparing the bed, providing and placing riprap, restoring adjacent work, and disposing of surplus material. Excavation in excess of the approximate volume of earth occupied by the riprap will be paid under the Earthwork bid item.

Item 12 – Block Stones

This section describes furnishing and placing block stones and aggregate base as identified on the Plans and in accordance with the following specifications.

Materials: Furnish durable field or quarry block stone that is sound, hard, dense, resistant to the action of air and water and free of seams, cracks, or other structural defects. Use block stone pieces averaging a 4'-0" length, 24-30" width and minimum 8" thickness as identified in the plans. Average dimensions of the stone pieces shall be derived by averaging measurements of the thickness, width, and length.

The contractor may NOT substitute waste concrete slabs for block stone.

Construction: Prepare bed for the block stones by excavating, shaping the slopes, and constructing the base stone for installation. Install aggregate base material and gradations that have performed satisfactorily in previous installations. After placing the block stone, restore the surface of adjacent work and legally dispose of surplus material.

The contractor may place the block stones by any mechanical means that produce a completed job within reasonable tolerances of the typical section the plans show.

Method of Measurement: Measurement for this bid item will be per square yard of material acceptably completed.

Basis of Payment: This work will be paid for at the contract price per square yard. Payment for all bid items under this item are full compensation for preparing the base, providing and place block stone, restoring adjacent work, and disposing of surplus material. Excavation in excess of the approximate volume of earth occupied by the riprap will be paid under the Earthwork bid item.

Item 13 – Pipe Railing 36", Item 14 – Pipe Railing 34"
This work consists of furnishing and installing the pipe railing and all hardware necessary for installation in the location and manner specified in the plans.

Material: Non-welded, factory assembled, aluminum railing, consisting of a 1-1/2" O.D. 6063 T6 or T4 aluminum alloy. Railings and all components shall be supplied with a Satin Anodized finish. Railings provided by The Wagner Companies, 1-888-243-6914 or approved equal.

Railings shall meet the following specifications of the International Building Code:

1. 2003.2.12 Guards
2. 1003.2.12.1 Height
3. 1003.2.12.2 Opening
   As modified by ADAAG-Americans with disability guidelines by US Access Board 1005 Fishing Piers and Platforms, the US Department of Justice 2010 ADA standards for and modified by the Wisconsin DNR, Bureau of Facilities and Land "Barrier Free" Fishing Pier Specifications.
   SOBA (States Organization for Boating Access guidelines)
4. Pipe Railing 34" includes the following:
   a. A top railing including fishing rod holders, welded to posts) and a flat area for food or equipment. Under the top railing is a shelf for a tackle box or bait within easy reach for a person with disabilities. Shelves and arm rest are wood.

B. Wood arm rests and shelves: Southern Yellow Pine, treated per AWPA standards. Shall meet the #1 Southern Pine Council requirements after installation.

C. Structural Performance: Provide railings capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:

1. Handrails:

   a. Uniform load of 50 lbf/ ft. (0.73 kN/m) applied in any direction.
   b. Concentrated load of 200 lbf (0.89 kN) applied in any direction.
   c. Uniform and concentrated loads need not be assumed to act concurrently.

2. Top Rails of Guards:

   a. Uniform load of [50 lbf/ ft. (0.73 kN/m) applied in any direction
   b. Concentrated load of 200 lbf (0.89 kN) applied in any direction.
   c. Uniform and concentrated loads need not be assumed to act concurrently.

3. Infill of Guards:

   a. Concentrated load of 50 lbf (0.22 kN) applied horizontally on an area of 1 sq. ft. (0.093 sq. m).
   b. Uniform load of 25 lbf/sq. ft. (1.2 kN/sq. m) applied horizontally.
   c. Infill load and other loads need not be assumed to act concurrently.

Provide shop drawings and color samples for approval

Construction: Install factory assembled components as detailed in the plans and in accordance with the manufacturer's recommendations.

Method of Measurement: This item shall be measured and paid for at the contract price for each linear foot of railing acceptably complete.

Basis of Payment: This work will be paid for at the contract unit price per each linear foot. Payment is full compensation for furnishing and installing all necessary materials, including the pipe railing and necessary hardware and all labor, tools, and equipment and incidentals necessary to complete this item of work.

Item 15 – Flagpole Mounting & Base

This work consists of installing the flagpole and base and all hardware necessary for installation in the location and manner specified in the plans.

Material: Flagpole to be provided by owner.

Performance: Flagpole base per manufacturer recommendations. Base flagpole design on maximum standard size nylon flag suitable for use with pole or flag size indicated, whichever is greater. Provide flagpole base shop drawings for approval showing length, width, and diameter of base detail and how pole integrates.

Construction: Flagpole provided by owner. Flagpole base to be installed per manufacturer recommendations, taking into consideration in situ soil conditions and wind loading.

Method of Measurement: This item shall be measured and paid for at the contract lump sum price acceptably complete.

Basis of Payment: This work will be paid for at the contract lump sum price. Payment is full compensation for installing all necessary materials, including pole and necessary hardware and all labor, tools, and equipment and incidentals necessary to complete this item of work.

Item 16 – Light Type B
This work consists of the design and installation of the electrical system with lights including system design, electrical system controls, conduit, wiring, handholds, meter base, pedestal, utility boxes, and light fixtures, lamps and poles as located on the Plans and listed below in accordance with local and state electrical codes and Section 265600 of the technical specifications.

Item 17– Boulder Placement*
This work consists of reusing on-site boulders and installing them as indicated in the Plans.

Construction: During demolition, relocate existing boulders and store on site. Place reused boulders at depths indicated in Plans. Install stone mulch per Item #23.

Method of Measurement: This item shall be measured and paid for at the contract price of lump sum for designated area acceptably complete.

Basis of Payment: This work will be paid for at the contract unit price per lump sum. This price shall be full compensation for relocating and placing all boulders, including excavation, hauling, placing, and for furnishing all labor, tools, equipment, and incidentals necessary to complete the contract work.

Item 18 – Stone Mulch*
This work consists of supply and installation of stone mulch and filter fabric base as indicated on the Plans.

Material: Stone mulch shall be dark grey in color, 3-4" dimensional trap rock. Geotextile shall have the following characteristics:

Min. grab tensile strength	ASTM D 4632	110 lb.
Min. puncture strength	ASTM D 4833	40 lb.
Min. apparent breaking elongation	ASTM D 4632	30%
Min. apparent opening size	ASTM D 4751	300 um
Min. permittivity	ASTM D 4491	.70s (-1)

Construction: After setting boulders to required depths apply filter fabric membrane at base of bed. Install stone mulch per Plans.

Method of Measurement: This item shall be measured and paid for at the contract price of cubic yard for designated area acceptably complete.

Basis of Payment: This work will be paid for at the contract unit price per cubic yard. This price shall be full compensation for furnishing stone mulch and filter fabric and placing all materials, including excavation, disposal, hauling, placing, grading; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the contract work.

Item 19 - Planting Soil Mix*
This work consists of furnishing and placing the soil for the landscape beds in the location and manner specified in the plans and section 329300 of the technical specifications.

Construction: Install per Section 329300 of the technical specifications even though plant material may not be installed at same time as soil placement.

Method of Measurement: Measurement will be the number of cubic yards of planting soil mix acceptably complete.

Basis of Payment: This work will be paid for at the contract unit price per cubic yard. This price shall be full compensation for furnishing and placing all materials, including excavation, disposal, hauling, placing, grading; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the contract work.

Items 20 - Engineered Soil
This work consists of furnishing and installing an engineered soil that meets NR 151.12 requirements per the WisDNR. Placement shall be in accordance with the Plans.

Construction: The soil mixture shall be uniform, free of stones, stumps, roots, or other similar objects larger than two inches. On-site soil mixing or placement is not allowed if soil is saturated with water within 48 hours of placement. The soil shall be covered and stored to prevent wetting or saturation. Placement shall be in 6 inch lifts. Area shall not be driven on our compacted unnecessarily from time of placement to finishing of project.

Method of Measurement: This item shall be measured and paid for at the contract price for cubic yards acceptably complete.

Basis of Payment: This work will be paid for at the contract unit price per cubic yard. Payment is full compensation for providing, transporting, handling, storing, placing, excavating areas, and backfilling; for disposing of all excess and waste materials; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the contract work.

Item 21 – Sidewalk Flume
This work consists of the installation of the metal sidewalk flume, adjacent concrete, and necessary attachment hardware as located on the Plans.

Material: ¼" diagonal cast metal or aluminum grate material with stainless steel anchors, or approved equal.

Construction: Install plate material in accordance with the Plans and secure as necessary with stainless steel fasteners.

Method of Measurement: This item shall be measured and paid for at the contract lump sum price acceptably complete.

Basis of Payment: This work will be paid for at the contract lump sum price. Payment is full compensation for furnishing and installing all necessary materials, including grating/plating and necessary hardware and all labor, tools, and equipment and incidentals necessary to complete this item of work.

ALTERNATES ----------

Alt Item 01 – See Above
Alt Item 02 – See Above
Alt Item 03 – See Above
Alt Item 04 – See Above
Alt Item 05 – See Above
Alt Item 06 – See Above

Alt Item 07- Thickened Edge Walk
This work consists of furnishing and installing concrete pavement and thickened edge walk and finishing at locations designated on the Plans in accordance with Sections 312000 and 321313 of the technical specifications. Note that aggregate base is included as part of these bid items.

Standard Finish Concrete Pavement: Typical City of Fond du Lac broom finish, running in an NE to SW plan direction.

Method of Measurement: Measurement for each bid item is listed below by the unit acceptably completed.

Basis of Payment: This work will be paid for at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
Alt 07	Thickened Edge Walk	SF

Payment is full compensation for furnishing all materials, including delivering, forming, installing, reinforcing, aggregate base, concrete, placing, curb ramp detectable warning field, finishing, jointing and for all labor, equipment, tools and incidentals necessary to complete this item of work

Alt Item 08 - Concrete Light Bases
This work consists of installation of the concrete light bases including conduit, reinforcing, grounding, forming and concrete as designated on the Plans and in accordance with local and state electrical codes and Section 033053 of the technical specifications.

Method of Measurement: This item shall be measured and paid for at the contract price of cubic yard of concrete base acceptably complete

Basis of Payment: This work will be paid for at the contract unit price under the following bid item:

Alt Item 09 - Asphalt Pavement
This work consists of furnishing and installing asphalt pavement for parking lot and drive. This bid item includes, aggregate base, asphalt and finishing at locations designated on the Plans in accordance with Sections 312000 and 321216 of the technical specifications. Note that aggregate base is included as part of these bid items.

Method of Measurement: Measurement will be the number of square yards of asphalt pavement acceptably complete.

Basis of Payment: This work will be paid for at the contract unit price per square yard. This price shall be full compensation for furnishing all materials, including delivering, forming, installing, aggregate base, asphalt, placing, finishing, and for all labor, equipment, tools and incidentals necessary to complete this item of work.

Alt Item 10 – Wheel Stops
This work consists of the installation of the wheel stops as located on the Plans and in accordance Section 321216 of the technical specifications.

Material: 8"x8"x72"L pressure treated wooden timber. NOTE: railroad ties shall not be accepted due to chemical preservatives and proximity to lake.

Construction: Install wooden timbers as detailed in the plans utilizing a minimum of 3, equally spaced, 18" rebar spikes to mount timber to asphalt. Recess head of spike beneath top of wheel stop a minimum of 1".

Method of Measurement: This item shall be measured and paid for at the contract price for each wheel stop acceptably complete.

Basis of Payment: This work will be paid for at the contract unit price per each. Payment is full compensation for furnishing and installing all necessary materials, including wooden timbers and necessary hardware and all labor, tools, and equipment and incidentals necessary to complete this item of work.

Alt Item 11 – Seeded Lawn
This work consists of furnishing and installing lawn including seeding, topsoil, mulch, and maintenance in the manner specified in the plans and in accordance with section 329200 of the technical specifications.

Construction: Per technical specifications

Method of Measurement: This item shall be measured and paid for at the contract price for square yards of lawn acceptably complete.

Basis of Payment: This work will be paid for at the contract unit price per square yard Payment is full compensation for providing, transporting, handling, storing, placing, and renovating disturbed areas; for providing and applying all required topsoil, fertilizer, mulch, water, herbicides, for disposing of all excess and waste materials; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the contract work.

Alt Item 12 - Pavement Markings
This work consists of installing pavement markings as designated on the Plans in accordance with Section 321216 of the technical specifications.

Method of Measurement: Measurement will be the number of linear feet of pavement marking acceptably complete.

Basis of Payment: This work will be paid for at the contract unit price per linear foot. This price shall be full compensation for furnishing all materials, including delivering, installing, epoxy, and for all labor, equipment, tools and incidentals necessary to complete this item of work.

Alt Item 13 - Signs
This work consists of furnishing and installing regulatory signage including pole, post anchor system, and all hardware necessary for installation in the location and manner specified in the plans and in accordance section 033053 of the technical specifications and with local and state codes.

Material:

Sign Blanks: Use aluminum alloy 5052-H38 complying with ASTM B 209. Use blanks conforming to the Aluminum Association, Inc., requirements for commercial flatness and uniformity of thickness. Perform all shearing, cutting, and punching before coating and applying surface material. Sign shall have be 0.080 inch thick sheet.

Pole: 10' Galvanized Steel Square Pole with 2" outside diameter and 0.065 wall thickness.

Pole Cap: Aluminum domed top post cap

Mount Hardware: Aluminum, vandal-proof hardware designed for mounting signs

Post Anchor System: V-Loc model# 23-VR2 or approved equal.

Construction:

Install in accordance with the manufacturer's recommendations

Method of Measurement: This item shall be measured and paid for at the contract price for each acceptably complete.

Basis of Payment: This work will be paid for at the contract unit price per each. Payment is full compensation for furnishing all necessary materials, including sign, pole, concrete base, and necessary hardware and all labor, tools, and equipment and incidentals necessary to complete this item of work.

Alt Item 14 – Bench Seating
This work consists of furnishing and installing the benches and all hardware necessary for installation in the location and manner specified in the plans.

Material: 70" all steel 'flip back' bench as indicated on the Plan. As manufactured by Maglin Site Furniture 1-800-716-5506, Inc. Model # MLB400W, metal color to be Autumn. Bench seat and back to be recycled plastic, Sand color.

Construction: Install pre-assembled bench per detailed plans and in accordance with the manufacturer's recommendations.

Method of Measurement: This item shall be measured and paid for at the contract price for each bench acceptably complete.

Basis of Payment: This work will be paid for at the contract unit price per each. Payment is full compensation for furnishing and installing all necessary materials, including bench and necessary hardware and all labor, tools, and equipment and incidentals necessary to complete this item of work.

Alt Item 15 – Light Type A
This work consists of the design and installation of the electrical system with lights including system design, electrical system controls, conduit, wiring, handholds, meter base, pedestal, utility boxes, and light fixtures, lamps and poles as located on the Plans and listed below in accordance with local and state electrical codes and Section 265600 of the technical specifications.

Materials:

Light Type A (pedestrian) Park Ridge series manufactured by Sternberg Lighting with the following specifications:

Luminaire: Park Ridge Series 1910A/5RLM18
Bracket: Post Arm CSA4B
Pole: 3214T4 Finish-Swedish Iron
Color: Swedish Iron for Pole and Luminaire
Lamp: 100HPS 120V
Locking Duplex receptacle?

Light Type B (bollard) BDAR5 series manufactured by US Architectural Lighting with the following specifications:

Model #: BDAR5-AR(reflector optics)-50(wattage)-MH(metal halide)-MT(multi-tap voltage)-Ground Mount- -30" Height
Color: RAL-7004-T (Grey-Textured)
Mounting: Per Plans

Provide shop drawings for approval

Construction: Excavated soil must be removed and disposed of off site

Method of Measurement: This item shall be measured and paid for at the contract price for each Light – Type A and B acceptably complete.

Basis of Payment: This work will be paid for at the contract unit price per each type of light. This price shall be full compensation for system design and furnishing all materials, including delivery, installing, placing, finishing, and for all labor, equipment, tools and incidentals necessary to complete this item of work.

Alt Item 16 – See Above
Alt Item 17 – See Above
Alt Item 18 – See Above

At Item 19 – Tree Stabilization
This work consists of installing tree staking as designated on the Plans and in accordance with Section 329300 of the technical specifications.

Material: 2" x 2" hardwood stakes, length per Plans. Proprietary staking and guying devices listed per the technical specifications.

Construction: Install wooden timbers as detailed in the plans, 3 per tree or per manufacturer's recommendations.

Method of Measurement: This item shall be measured and paid for at the contract price for each tree staked acceptably complete.

PREVAILING WAGE RATE DETERMINATION
Issued by the State of Wisconsin Department of Workforce Development Pursuant to s. 66.0903, Wis. Stats.
Issued On: 5/24/2012

DETERMINATION NUMBER: 201201537

EXPIRATION DATE: Prime Contracts MUST Be Awarded or Negotiated On Or Before 12/31/2012. If NOT, You MUST Reapply.

PROJECT NAME: FRASIER POINT PIER AND PLAZA

PROJECT NO: 2012-043

PROJECT LOCATION: FOND DU LAC CITY, FOND DU LAC COUNTY, WI

CONTRACTING AGENCY: CITY OF FOND DU LAC

CLASSIFICATION: Contractors are responsible for correctly classifying their workers. Either call the Department of Workforce Development (DWD) with trade or classification questions or consult DWD's Dictionary of Occupational Classifications & Work Descriptions on the DWD website at: dwd.wisconsin.gov/er/prevailing_wage_rate/Dictionary/dictionary_main.htm.

OVERTIME: Time and one-half must be paid for all hours worked:
- over 10 hours per day on prevailing wage projects
- over 40 hours per calendar week
- Saturday and Sunday
- on all of the following holidays: January 1; the last Monday in May; July 4; the 1st Monday in September; the 4th Thursday in November; December 25;
- The day before if January 1, July 4 or December 25 falls on a Saturday;
- The day following if January 1, July 4 or December 25 falls on a Sunday.

Apply the time and one-half overtime calculation to whichever is higher between the Hourly Basic Rate listed on this project determination or the employee's regular hourly rate of pay. Add any applicable Premium or DOT Premium to the Hourly Basic Rate before calculating overtime.

A DOT Premium (discussed below) may supersede this time and one-half requirement.

FUTURE INCREASE: When a specific trade or occupation requires a future increase, you MUST add the full hourly increase to the "TOTAL" on the effective date(s) indicated for the specific trade or occupation.

PREMIUM PAY: If indicated for a specific trade or occupation, the full amount of such pay MUST be added to the "HOURLY BASIC RATE OF PAY" indicated for such trade or occupation, whevenever such pay is applicable.

DOT PREMIUM: This premium only applies to highway and bridge projects owned by the Wisconsin Department of Transportation and to the project type heading "Airport Pavement or State Highway Construction." DO NOT apply the premium calculation under any other project type on this determination.

APPRENTICES: Pay apprentices a percentage of the applicable journeyperson's hourly basic rate of pay and hourly fringe benefit contributions specified in this determination. Obtain the appropriate percentage from each apprentice's contract or indenture.

SUBJOURNEY: Subjourney wage rates may be available for some of the trades or occupations indicated below with the exception of laborers, truck drivers and heavy equipment operators. Any employer interested in using a subjourney classification on this project MUST complete Form ERD-10880 and request the applicable wage rate from the Department of Workforce Development PRIOR to using the subjourney worker on this project.

This document **MUST BE POSTED** by the **CONTRACTING AGENCY** in at least one conspicuous and easily accessible place **on the site of the project** . A local governmental unit may post this document at the place normally used to post public notices if there is no common site on the project. This document **MUST** remain posted during the entire time any worker is employed on the project and **MUST** be physically incorporated into the specifications and all contracts and subcontracts. If you have any questions, please write to the Equal Rights Division, Labor Standards Bureau, P.O. Box 8928, Madison, Wisconsin 53708 or call (608) 266-6861.

The following statutory provisions apply to local governmental unit projects of public works and are set forth below pursuant to the requirements of s. 66.0903(8), Stats.

s. 66.0903 (1) (f) & s. 103.49 (1) (c) "PREVAILING HOURS OF LABOR" for any trade or occupation in any area means 10 hours per day and 40 hours per week and may not include any hours worked on a Saturday or Sunday or on any of the following holidays:

1. January 1.
2. The last Monday in May.
3. July 4.
4. The first Monday in September.
5. The 4th Thursday in November.
6. December 25.
7. The day before if January 1, July 4 or December 25 falls on a Saturday.
8. The day following if January 1, July 4 or December 25 falls on a Sunday.

s. 66.0903 (10) RECORDS; INSPECTION; ENFORCEMENT.

(a) Each contractor, subcontractor, or contractor's or subcontractor's agent performing work on a project of public works that is subject to this section shall keep full and accurate records clearly indicating the name and trade or occupation of every person performing the work described in sub. (4) and an accurate record of the number of hours worked by each of those persons and the actual wages paid for the hours worked.

s. 66.0903 (11) LIABILITY AND PENALTIES.

(a) 1. Any contractor, subcontractor, or contractor's or subcontractor's agent who fails to pay the prevailing wage rate determined by the department under sub. (3) or who pays less than 1.5 times the hourly basic rate of pay for all hours worked in excess of the prevailing hours of labor is liable to any affected employee in the amount of his or her unpaid wages or his or her unpaid overtime compensation and in an additional amount as liquidated damages as provided under subd. 2., 3., whichever is applicable.

2. If the department determines upon inspection under sub. (10) (b) or (c) that a contractor, subcontractor, or contractor's or subcontractor's agent has failed to pay the prevailing wage rate determined by the department under sub. (3) or has paid less than 1.5 times the hourly basic rate of pay for all hours worked in excess of the prevailing hours of labor, the department shall order the contractor to pay to any affected employee the amount of his or her unpaid wages or his or her unpaid overtime compensation and an additional amount equal to 100 percent of the amount of those unpaid wages or that unpaid overtime compensation as liquidated damages within a period specified by the department in the order.

3. In addition to or in lieu of recovering the liability specified in subd. 1. as provided in subd. 2., any employee for and in behalf of that employee and other employees similarly situated may commence an action to recover that liability in any court of competent jurisdiction. If the court finds that a contractor, subcontractor, or contractor's or subcontractor's agent has failed to pay the prevailing wage rate determined by the department under sub. (3) or has paid less than 1.5 times the hourly basic rate of pay for all hours worked in excess of the prevailing hours of labor, the court shall order the contractor, subcontractor, or agent to pay to any affected employee the amount of his or her unpaid wages or his or her unpaid overtime compensation and an additional amount equal to 100 percent of the amount of those unpaid wages or that unpaid overtime compensation as liquidated damages.

5. No employee may be a party plaintiff to an action under subd. 3. unless the employee consents in writing to become a party and the consent is filed in the court in which the action is brought. Notwithstanding s. 814.04 (1), the court shall, in addition to any judgment awarded to the plaintiff, allow reasonable attorney fees and costs to be paid by the defendant.

BUILDING OR HEAVY CONSTRUCTION

Includes sheltered enclosures with walk-in access for the purpose of housing persons, employees, machinery, equipment or supplies and non-sheltered work such as canals, dams, dikes, reservoirs, storage tanks, etc. A sheltered enclosure need not be "habitable" in order to be considered a building. The installation of machinery and/or equipment, both above and below grade level, does not change a project's character as a building. On-site grading, utility work and landscaping are included within this definition. Residential buildings of four (4) stories or less, agricultural buildings, parking lots and driveways are NOT included within this definition.

SKILLED TRADES

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
101	Acoustic Ceiling Tile Installer	29.06	15.16	44.22
102	Boilermaker	31.09	23.75	54.84
103	Bricklayer, Blocklayer or Stonemason Future Increase(s): Add $.50/hr on 6/1/2012; Add $ .80 on 6/1/2013 Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	30.76	16.42	47.18
104	Cabinet Installer	29.06	15.16	44.22
105	Carpenter	29.06	15.16	44.22
106	Carpet Layer or Soft Floor Coverer	29.06	15.16	44.22
107	Cement Finisher Future Increase(s): Add $.50/hr on 6/1/2012; Add $ .80 on 6/1/2013	30.76	16.42	47.18
108	Drywall Taper or Finisher	20.00	15.98	35.98
109	Electrician Future Increase(s): Add $.75/hr on 6/1/2012. Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	28.88	18.93	47.81
110	Elevator Constructor	43.79	25.48	69.27
111	Fence Erector	25.50	0.00	25.50
112	Fire Sprinkler Fitter	36.39	16.81	53.20
113	Glazier	28.19	9.84	38.03
114	Heat or Frost Insulator	28.14	17.83	45.97
115	Insulator (Batt or Blown)	23.62	11.55	35.17
116	Ironworker	30.90	19.11	50.01

Fringe Benefits Must Be Paid On All Hours Worked

CODE	TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
117	Lather	29.06	15.16	44.22
118	Line Constructor (Electrical)	35.97	18.08	54.05
119	Marble Finisher	31.16	16.27	47.43
120	Marble Mason	31.16	16.02	47.18
121	Metal Building Erector	13.00	2.30	15.30
122	Millwright	30.66	15.21	45.87
123	Overhead Door Installer	18.00	1.88	19.88
124	Painter	14.70	7.33	22.03
125	Pavement Marking Operator	26.00	0.00	26.00
126	Piledriver	28.11	23.94	52.05
127	Pipeline Fuser or Welder (Gas or Utility)	30.52	18.84	49.36
129	Plasterer Future Increase(s): Add $.50/hr on 6/1/2012; Add $ .80 on 6/1/2013	30.76	16.42	47.18
130	Plumber	31.65	9.94	41.59
132	Refrigeration Mechanic Future Increase(s): Add $.75/hr on 6/4/2012; Add $.85/hr on 6/4/2013	32.01	15.93	47.94
133	Roofer or Waterproofer	21.00	9.67	30.67
134	Sheet Metal Worker	29.63	19.17	48.80
135	Steamfitter Future Increase(s): Add $.75/hr on 6/4/2012; Add $.85 on 6/3/2013	32.01	15.93	47.94
137	Teledata Technician or Installer Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	21.26	11.75	33.01
138	Temperature Control Installer	31.65	16.10	47.75
139	Terrazzo Finisher	18.00	5.35	23.35
140	Terrazzo Mechanic	31.16	16.27	47.43
141	Tile Finisher	12.00	13.41	25.41
142	Tile Setter	30.76	16.42	47.18
143	Tuckpointer, Caulker or Cleaner	31.16	16.02	47.18
144	Underwater Diver (Except on Great Lakes)	36.20	18.81	55.01

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
146	Well Driller or Pump Installer	25.32	15.30	40.62
147	Siding Installer	36.60	16.37	52.97
150	Heavy Equipment Operator - ELECTRICAL LINE CONSTRUCTION ONLY	27.42	15.10	42.52
151	Light Equipment Operator -ELECTRICAL LINE CONSTRUCTION ONLY	28.78	15.16	43.94
152	Heavy Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	17.80	9.00	26.80
153	Light Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	23.38	12.48	35.86
154	Groundman - ELECTRICAL LINE CONSTRUCTION ONLY	21.30	10.97	32.27

TRUCK DRIVERS

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
201	Single Axle or Two Axle	18.00	18.18	36.18
203	Three or More Axle	17.02	2.23	19.25
204	Articulated, Euclid, Dumptor, Off Road Material Hauler	15.00	3.94	18.94
205	Pavement Marking Vehicle	19.25	10.84	30.09
207	Truck Mechanic	17.02	2.23	19.25

LABORERS

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
301	General Laborer Future Increase(s): Add $.50/hr. on 06/04/2012; Add $.75/hr. on 06/03/2013 Premium Increase(s): Add $1.00/hr for certified welder and pipelayer; Add $.25/hr for mason tender	23.41	13.43	36.84
302	Asbestos Abatement Worker	15.00	0.00	15.00
303	Landscaper	21.00	0.92	21.92
310	Gas or Utility Pipeline Laborer (Other Than Sewer and Water)	19.29	12.20	31.49
311	Fiber Optic Laborer (Outside, Other Than Concrete Encased) Premium Increase(s): DOT PREMIUMS: Pay two times the hourly basic rate on New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	17.81	12.22	30.03

314	Railroad Track Laborer	12.50	3.63	16.13

HEAVY EQUIPMENT OPERATORS
SITE PREPARATION, UTILITY OR LANDSCAPING WORK ONLY

Fringe Benefits Must Be Paid On All Hours Worked

CODE	TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
501	Air Track, Rotary or Percussion Drilling Machine &/or Hammers, Blaster; Asphalt Milling Machine; Boring Machine (Directional, Horizontal or Vertical); Backhoe (Track Type) Having a Mfgr's Rated Capacity of 130,000 Lbs. or Over; Backhoe (Track Type) Having a Mfgr's Rated Capacity of Under 130,000 Lbs., Backhoe (Mini, 15,000 Lbs. & Under); Bulldozer or Endloader (Over 40 hp); Compactor (Self-Propelled 85 Ft Total Drum Width & Over, or Tractor Mounted, Towed & Light Equipment); Concrete Batch Plant, Batch Hopper; Concrete Breaker (Large, Auto, Vibratory/Sonic, Manual or Remote); Crane, Shovel, Dragline, Clamshells; Forklift (Machinery Moving or Steel Erection, 25 Ft & Over); Gradall (Cruz-Aire Type); Grader or Motor Patrol; Master Mechanic; Mechanic or Welder; Robotic Tool Carrier (With or Without Attachments); Scraper (Self Propelled or Tractor Drawn) 5 cu yds or More Capacity; Tractor or Truck Mounted Hydraulic Backhoe; Tractor or Truck Mounted Hydraulic Crane (10 Tons or Under); Tractor (Scraper, Dozer, Pusher, Loader); Trencher (Wheel Type or Chain Type Having Over 8 Inch Bucket). Future Increase(s): Add $1/hr on 6/3/2012; Add $1/hr on 6/2/2013.	31.89	17.98	49.87
502	Backfiller; Broom or Sweeper; Bulldozer or Endloader (Under 40 hp); Environmental Burner; Forestry Equipment, Timbco, Tree Shear, Tub Grinder, Processor; Jeep Digger; Screed (Milling Machine); Skid Rig; Straddle Carrier or Travel Lift; Stump Chipper; Trencher (Wheel Type or Chain Type Having 8 Inch Bucket & Under). Future Increase(s): Add $1/hr on 6/3/2012; Add $1/hr on 6/2/2013.	31.89	17.98	49.87
503	Air Compressor (&/or 400 CFM or Over); Augers (Vertical & Horizontal); Compactor (Self-Propelled 84 Ft Total Drum Width & Under, or Tractor Mounted, Towed & Light Equipment); Crusher, Screening or Wash Plant; Farm or Industrial Type Tractor; Forklift; Generator (&/or 150 KW or Over); Greaser; High Pressure Utility Locating Machine (Daylighting Machine); Mulcher; Oiler; Post Hole Digger or Driver; Pump (3 Inch or Over) or Well Points; Refrigeration Plant or Freeze Machine; Rock, Stone Breaker; Skid Steer Loader (With or Without Attachments); Vibratory Hammer or Extractor, Power Pack.	31.89	17.81	49.70
504	Work Performed on the Great Lakes Including Diver; Wet Tender or Hydraulic Dredge Engineer.	36.20	18.81	55.01
505	Work Performed on the Great Lakes Including Crane or Backhoe Operator; Assistant Hydraulic Dredge Engineer; Hydraulic Dredge Leverman or Diver's Tender; Mechanic or Welder; 70 Ton & Over Tug Operator. Premium Increase(s): Add $.50/hr for friction crane, lattice boom or crane certification (CCO).	37.45	19.45	56.90

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
506	Work Performed on the Great Lakes Including Deck Equipment Operator or Machineryman (Maintains Cranes Over 50 Tons or Backhoes 115,000 Lbs. or More); Tug, Launch or Loader, Dozer or Like Equipment When Operated on a Barge, Breakwater Wall, Slip, Dock or Scow, Deck Machinery.	26.80	18.52	45.32
507	Work Performed on the Great Lakes Including Deck Equipment Operator, Machineryman or Fireman (Operates 4 Units or More or Maintains Cranes 50 Tons or Under or Backhoes 115,000 Lbs. or Under); Deck Hand, Deck Engineer or Assistant Tug Operator; Off Road Trucks - Great Lakes ONLY.	27.75	19.15	46.90

HEAVY EQUIPMENT OPERATORS
EXCLUDING SITE PREPARATION, UTILITY, PAVING LANDSCAPING WORK

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
508	Boring Machine (Directional); Crane, Tower Crane, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of Over 100 Tons, Self-Erecting Tower Crane With a Lifting Capacity of Over 4,000 Lbs., Crane With Boom Dollies; Crane, Tower Crane, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 176 Ft or Over; Master Mechanic. Future Increase(s): Add $1/hr on 6/3/2012; Add $1/hr on 6/2/2013. Premium Increase(s): Add $.50/hr at 200 ton: Add $1.00/hr. at 300 ton; Add $1.50/hr at 400 ton; Add $2.00/hr at 500 ton.	34.62	17.98	52.60
509	Backhoe (Track Type) Having a Mfgr's Rated Capacity of 130,000 Lbs. or Over; Boring Machine (Horizontal or Vertical); Caisson Rig; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of 100 Tons or Under, Self-Erecting Tower Crane With A Lifting Capacity Of 4,000 Lbs. & Under; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 175 Ft or Under; Pile Driver; Versi Lifts, Tri-Lifts & Gantrys (20,000 Lbs. & Over). Future Increase(s): Add $1/hr on 6/3/2012; Add $1/hr on 6/2/2013. Premium Increase(s): Add $.25/hr for cranes with lifting capacity of 45 ton or over.	33.62	17.98	51.60
510	Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of Under 130,000 Lbs., Backhoe (Mini, 15,000 Lbs. & Under); Concrete Bump Cutter, Grinder, Planing or Grooving Machine; Concrete Laser/Screed; Concrete Paver (Slipform); Concrete Pump (Over 46 Meter), Concrete Conveyor (Rotec or Bidwell Type); Concrete Slipform Placer Curb & Gutter Machine; Concrete Spreader & Distributor; Dredge (NOT Performing Work on the Great Lakes); Forklift (Machinery Moving or Steel Erection, 25 Ft & Over); Gradall (Cruz-Aire Type); Hydro-Blaster (10,000 PSI or Over); Milling Machine; Skid Rig; Traveling Crane (Bridge Type). Future Increase(s): Add $1/hr on 6/3/2012; Add $1/hr on 6/2/2013.	32.42	17.98	50.40

Fringe Benefits Must Be Paid On All Hours Worked

CODE	TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
511	Air, Track, Rotary or Percussion Drilling Machine &/or Hammers, Blaster; Bulldozer or Endloader (Over 40 hp); Compactor (Self-Propelled 85 Ft Total Drum Width & Over, or Tractor Mounted, Towed & Light Equipment); Concrete Pump (46 Meter & Under), Concrete Conveyor (Rotec or Bidwell Type); Crane (Carry Deck, Mini) or Truck Mounted Hydraulic Crane (10 Tons or Under); Environmental Burner; Gantrys (Under 20,000 Lbs.); Grader or Motor Patrol; High Pressure Utility Locating Machine (Daylighting Machine); Manhoist; Material or Stack Hoist; Mechanic or Welder; Railroad Track Rail Leveling Machine, Tie Placer, Extractor, Tamper, Stone Leveler or Rehabilitation Equipment; Roller (Over 5 Ton); Scraper (Self Propelled or Tractor Drawn) 5 cu yd or More Capacity; Screed (Milling Machine); Sideboom; Straddle Carrier or Travel Lift; Tining or Curing Machine; Tractor (Scraper, Dozer, Pusher, Loader); Tractor or Truck Mounted Hydraulic Backhoe; Tractor or Truck Mounted Hydraulic Crane (10 Tons or Under); Trencher (Wheel Type or Chain Type Having Over 8-Inch Bucket). Future Increase(s): Add $1/hr on 6/3/2012; Add $1/hr on 6/2/2013.	31.89	17.98	49.87
512	Backfiller; Broom or Sweeper; Bulldozer or Endloader (Under 40 hp); Compactor (Self-Propelled 84 Ft Total Drum Width & Under, or Tractor Mounted, Towed & Light Equipment); Concrete Batch Plant, Batch Hopper; Concrete Breaker (Large, Auto, Vibratory/Sonic, Manual or Remote); Concrete Conveyor System; Concrete Finishing Machine (Road Type); Fireman (Pile Driver & Derrick NOT Performing Work on the Great Lakes); Grout Pump; Hoist (Tugger, Automatic); Industrial Locomotives; Jeep Digger; Lift Slab Machine; Mulcher; Roller (Rubber Tire, 5 Ton or Under); Screw or Gypsum Pumps; Stabilizing or Concrete Mixer (Self-Propelled or 14S or Over); Stump Chipper; Trencher (Wheel Type or Chain Type Having 8-Inch Bucket & Under); Winches & A-Frames.	37.47	19.10	56.57
513	Air Compressor (&/or 400 CFM or Over); Air, Electric or Hydraulic Jacking System; Augers (Vertical & Horizontal); Boatmen (NOT Performing Work on the Great Lakes); Boiler (Temporary Heat); Crusher, Screening or Wash Plant; Elevator; Farm or Industrial Type Tractor; Fireman (Asphalt Plant NOT Performing Work on the Great Lakes); Forklift; Generator (&/or 150 KW or Over); Greaser; Heaters (Mechanical); Loading Machine (Conveyor); Oiler; Post Hole Digger or Driver; Prestress Machine; Pump (3 Inch or Over) or Well Points; Refrigeration Plant or Freeze Machine; Robotic Tool Carrier (With or Without Attachments); Rock, Stone Breaker; Skid Steer Loader (With or Without Attachments); Vibratory Hammer or Extractor, Power Pack. Future Increase(s): Add $1/hr on 6/3/2012; Add $1/hr on 6/2/2013.	29.19	17.98	47.17
514	Gas or Utility Pipeline, Except Sewer & Water (Primary Equipment). Future Increase(s): Add $2/hr. on 1/1/2013.	34.89	19.68	54.57
515	Gas or Utility Pipeline, Except Sewer & Water (Secondary Equipment).	30.32	17.40	47.72
516	Fiber Optic Cable Equipment	25.74	15.85	41.59

SEWER, WATER OR TUNNEL CONSTRUCTION

Includes those projects that primarily involve public sewer or water distribution, transmission or collection systems and related tunnel work (excluding buildings).

SKILLED TRADES

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
103	Bricklayer, Blocklayer or Stonemason	31.16	16.02	47.18
105	Carpenter Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	33.43	19.31	52.74
107	Cement Finisher	29.35	15.05	44.40
109	Electrician Future Increase(s): Add $.75/hr on 6/1/2012. Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	28.88	18.93	47.81
111	Fence Erector	25.50	0.00	25.50
116	Ironworker	31.31	21.59	52.90
118	Line Constructor (Electrical)	35.97	18.08	54.05
125	Pavement Marking Operator	26.00	0.00	26.00
126	Piledriver	28.11	23.94	52.05
130	Plumber	31.65	9.94	41.59
135	Steamfitter	31.65	15.04	46.69
137	Teledata Technician or Installer	21.26	11.75	33.01
143	Tuckpointer, Caulker or Cleaner	31.16	16.02	47.18
144	Underwater Diver (Except on Great Lakes)	36.20	18.81	55.01
146	Well Driller or Pump Installer	24.22	14.80	39.02
150	Heavy Equipment Operator - ELECTRICAL LINE CONSTRUCTION ONLY	27.42	15.10	42.52
151	Light Equipment Operator -ELECTRICAL LINE CONSTRUCTION ONLY	28.78	15.16	43.94
152	Heavy Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	17.80	9.00	26.80
153	Light Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	23.38	12.48	35.86

154	Groundman - ELECTRICAL LINE CONSTRUCTION ONLY	21.30	10.97	32.27

TRUCK DRIVERS

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
201	Single Axle or Two Axle	23.00	8.64	31.64
203	Three or More Axle	17.54	13.41	30.95
204	Articulated, Euclid, Dumptor, Off Road Material Hauler Future Increase(s): Add $1.75/hr on 6/1/2012; Add $1.85/hr on 6/1/2013. Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	22.50	16.19	38.69
205	Pavement Marking Vehicle	19.25	10.84	30.09
207	Truck Mechanic	17.54	13.41	30.95

LABORERS

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
301	General Laborer Future Increase(s): Add $1.73/hr on 6/4/2012. Premium Increase(s): Add $1.92 for bottomman; Add $2.03 for concrete manhole builder, bracer, jointman, or pipelayer; Add $4.83 for blaster. Add $2.00 for all tunnel work under 15 lbs. compressed air; Add $2.00 for 0-30 lbs. compressed air; Add $3.00 for over 30 lbs. compressed air.	27.72	15.61	43.33
303	Landscaper	21.00	0.92	21.92
304	Flagperson or Traffic Control Person	20.97	12.23	33.20
311	Fiber Optic Laborer (Outside, Other Than Concrete Encased)	17.61	11.67	29.28
314	Railroad Track Laborer	12.50	3.63	16.13

HEAVY EQUIPMENT OPERATORS
SEWER, WATER OR TUNNEL WORK

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
521	Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of 130,000 Lbs. or Over; Caisson Rig; Crane, Tower Crane, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 176 Ft or Over; Crane, Tower Crane, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of Over 100 Tons, Self-Erecting Tower Crane With a Lifting Capacity Of Over 4,000 Lbs., Crane With Boom Dollies; Master Mechanic; Pile Driver. Future Increase(s): Add $2.05/hr on 6/4/2012. Premium Increase(s): Add $.25/hr for operating tower crane.	34.69	18.55	53.24
522	Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of Under 130,000 Lbs., Backhoe (Mini, 15,000 Lbs. & Under); Boring Machine (Directional); Concrete Bump Cutter, Grinder, Planing or Grooving Machine; Concrete Laser/Screed; Concrete Paver (Slipform); Concrete Pump (Over 46 Meter), Concrete Conveyor (Rotec or Bidwell Type); Concrete Spreader & Distributor; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 175 Ft or Under; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of 100 Tons or Under, Self-Erecting Tower Crane With a Lifting Capacity of 4,000 Lbs. & Under; Dredge (NOT Performing Work on the Great Lakes); Milling Machine; Skid Rig; Telehandler; Traveling Crane (Bridge Type). Future Increase(s): Add $1/hr on 6/3/2012; Add $1/hr on 6/2/2013.	32.42	17.98	50.40
523	Air Track, Rotary or Percussion Drilling Machine &/or Hammers, Blaster; Boring Machine (Horizontal or Vertical); Bulldozer or Endloader (Over 40 hp); Crane (Carry Deck, Mini) or Truck Mounted Hydraulic Crane (10 Tons or Under); Concrete Pump (46 Meter & Under), Concrete Conveyor (Rotec or Bidwell Type); Concrete Slipform Placer Curb & Gutter Machine; Gradall (Cruz-Aire Type); Grader or Motor Patrol; Hydro-Blaster (10,000 PSI or Over); Manhoist; Material or Stack Hoist; Mechanic or Welder; Roller (Over 5 Ton); Scraper (Self Propelled or Tractor Drawn) 5 cu yd or More Capacity; Screed (Milling Machine); Sideboom; Straddle Carrier or Travel Lift; Tractor (Scraper, Dozer, Pusher, Loader); Tractor or Truck Mounted Hydraulic Backhoe; Tractor or Truck Mounted Hydraulic Crane (10 Tons or Under); Trencher (Wheel Type or Chain Type Having Over 8-Inch Bucket). Future Increase(s): Add $1/hr on 6/3/2012; Add $1/hr on 6/2/2013.	31.89	17.98	49.87

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
524	Backfiller; Broom or Sweeper; Bulldozer or Endloader (Under 40 hp); Compactor (Self-Propelled 85 Ft Total Drum Width & Over, or Tractor Mounted, Towed & Light Equipment); Concrete Batch Plant, Batch Hopper; Concrete Breaker (Large, Auto, Vibratory/Sonic, Manual or Remote); Concrete Conveyor System; Concrete Finishing Machine (Road Type); Environmental Burner; Fireman (Pile Driver & Derrick NOT Performing Work on the Great Lakes); Forestry Equipment, Timbco, Tree Shear, Tub Grinder, Processor; Hoist (Tugger, Automatic); Grout Pump; Jeep Digger; Lift Slab Machine; Mulcher; Power Subgrader; Pump (3 Inch or Over) or Well Points; Robotic Tool Carrier (With or Without Attachments); Roller (Rubber Tire, 5 Ton or Under); Screw or Gypsum Pumps; Stabilizing or Concrete Mixer (Self-Propelled or 14S or Over); Stump Chipper; Tining or Curing Machine; Trencher (Wheel Type or Chain Type Having 8-Inch Bucket & Under); Winches & A-Frames.	30.89	17.16	48.05
525	Air Compressor (&/or 400 CFM or Over); Air, Electric or Hydraulic Jacking System; Augers (Vertical & Horizontal); Compactor (Self-Propelled 84 Ft Total Drum Width & Under, or Tractor Mounted, Towed & Light Equipment); Crusher, Screening or Wash Plant; Farm or Industrial Type Tractor; Fireman (Asphalt Plant NOT Performing Work on the Great Lakes); Generator (&/or 150 KW or Over); Heaters (Mechanical); High Pressure Utility Locating Machine (Daylighting Machine); Loading Machine (Conveyor); Post Hole Digger or Driver; Refrigeration Plant or Freeze Machine; Rock, Stone Breaker; Skid Steer Loader (With or Without Attachments); Vibratory Hammer or Extractor, Power Pack. Future Increase(s): Add $1/hr on 6/3/2012; Add $1/hr on 6/2/2013.	29.19	17.98	47.17
526	Boiler (Temporary Heat); Forklift; Greaser; Oiler.	29.19	17.96	47.15
527	Work Performed on the Great Lakes Including Diver; Wet Tender or Hydraulic Dredge Engineer.	36.20	18.81	55.01
528	Work Performed on the Great Lakes Including 70 Ton & Over Tug Operator; Assistant Hydraulic Dredge Engineer; Crane or Backhoe Operator; Hydraulic Dredge Leverman or Diver's Tender; Mechanic or Welder.	36.20	18.81	55.01
529	Work Performed on the Great Lakes Including Deck Equipment Operator or Machineryman (Maintains Cranes Over 50 Tons or Backhoes 115,000 Lbs. or More); Tug, Launch or Loader, Dozer or Like Equipment When Operated on a Barge, Breakwater Wall, Slip, Dock or Scow, Deck Machinery.	26.80	18.52	45.32
530	Work Performed on the Great Lakes Including Deck Equipment Operator; Machineryman or Fireman (Operates 4 Units or More or Maintains Cranes 50 Tons or Under or Backhoes 115,000 Lbs. or Under), Deck Hand, Deck Engineer or Assistant Tug Operator; Off Road Trucks - Great Lakes ONLY.	26.80	18.52	45.32

LOCAL STREET OR MISCELLANEOUS PAVING CONSTRUCTION

Includes roads, streets, alleys, trails, bridges, paths, racetracks, parking lots and driveways (except residential or agricultural), public sidewalks or other similar projects (excluding projects awarded by the Wisconsin Department of Transportation).

SKILLED TRADES

Fringe Benefits Must Be Paid On All Hours Worked

CODE	TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
103	Bricklayer, Blocklayer or Stonemason	31.16	16.02	47.18
105	Carpenter	29.06	15.16	44.22
107	Cement Finisher	29.35	15.05	44.40
109	Electrician Future Increase(s): Add $.50/hr. effective 06/04/2012. Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	28.74	17.86	46.60
111	Fence Erector	25.50	0.00	25.50
116	Ironworker	30.90	19.11	50.01
118	Line Constructor (Electrical)	35.97	18.08	54.05
124	Painter	14.70	7.33	22.03
125	Pavement Marking Operator	26.00	0.00	26.00
126	Piledriver	28.11	23.94	52.05
133	Roofer or Waterproofer	20.45	9.42	29.87
137	Teledata Technician or Installer	21.26	11.75	33.01
143	Tuckpointer, Caulker or Cleaner	31.16	16.02	47.18
144	Underwater Diver (Except on Great Lakes)	36.20	18.81	55.01
150	Heavy Equipment Operator - ELECTRICAL LINE CONSTRUCTION ONLY	35.42	12.90	48.32
151	Light Equipment Operator -ELECTRICAL LINE CONSTRUCTION ONLY	28.78	14.49	43.27
152	Heavy Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	25.18	13.07	38.25
153	Light Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	23.38	12.48	35.86
154	Groundman - ELECTRICAL LINE CONSTRUCTION ONLY	21.30	10.97	32.27

TRUCK DRIVERS

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
201	Single Axle or Two Axle	15.00	0.00	15.00
203	Three or More Axle	21.48	10.59	32.07
204	Articulated, Euclid, Dumptor, Off Road Material Hauler Future Increase(s): Add $1/hr on 6/3/2012; Add $1/hr on 6/2/2013.	31.89	17.98	49.87
205	Pavement Marking Vehicle	19.25	10.84	30.09
206	Shadow or Pilot Vehicle	15.00	0.00	15.00
207	Truck Mechanic	21.48	10.59	32.07

LABORERS

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
301	General Laborer	18.57	12.03	30.60
303	Landscaper Future Increase(s): Add $1.60/hr on 6/1/12; Add $1.70/hr on 6/1/13; Add $1.60/hr on 6/1/14. Premium Increase(s): DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.25/hr for work on projects involving temporary traffic control setup, for lane and shoulder closures, when work under artificial illumination conditions is necessary as required by the project provisions (including prep time prior to and/or cleanup after such time period).	26.92	13.45	40.37
304	Flagperson or Traffic Control Person	20.97	12.23	33.20
311	Fiber Optic Laborer (Outside, Other Than Concrete Encased)	17.61	11.67	29.28
314	Railroad Track Laborer	12.50	3.63	16.13

HEAVY EQUIPMENT OPERATORS
CONCRETE PAVEMENT OR BRIDGE WORK

Fringe Benefits Must Be Paid On All Hours Worked

CODE	TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
541	Crane, Tower Crane, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of Over 100 Tons, Self-Erecting Tower Crane With a Lifting Capacity Of Over 4,000 Lbs., Crane With Boom Dollies; Crane, Tower Crane, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 176 Ft or Over; Master Mechanic. Future Increase(s): Add $2/hr on 6/1/12; Add $2/hr on 6/1/13; Add $1.75/hr on 6/1/14. Premium Increase(s): DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.25/hr for work on projects involving temporary traffic control setup, for lane and shoulder closures, when work under artificial illumination conditions is necessary as required by the project provisions (including prep time prior to and/or cleanup after such time period).	34.22	18.90	53.12
542	Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of 130,000 Lbs. or Over; Caisson Rig; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of 100 Tons or Under, Self-Erecting Tower Crane With a Lifting Capacity of 4,000 Lbs. & Under; Crane, Tower Crane Portable Tower, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 175 Ft or Under; Dredge (NOT Performing Work on the Great Lakes); Licensed Boat Pilot (NOT Performing Work on the Great Lakes); Pile Driver. Future Increase(s): Add $2/hr on 6/1/12; Add $2/hr on 6/1/13; Add $1.75/hr on 6/1/14. Premium Increase(s): DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.25/hr for work on projects involving temporary traffic control setup, for lane and shoulder closures, when work under artificial illumination conditions is necessary as required by the project provisions (including prep time prior to and/or cleanup after such time period).	33.72	18.90	52.62

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
543	Air Track, Rotary or Percussion Drilling Machine &/or Hammers, Blaster; Automatic Subgrader (Concrete); Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of Under 130,000 Lbs., Backhoe (Mini, 15,000 Lbs. & Under); Boring Machine (Directional, Horizontal or Vertical); Bridge (Bidwell) Paver; Bulldozer or Endloader; Concrete Batch Plant, Batch Hopper; Concrete Breaker (Large, Auto, Vibratory/Sonic, Manual or Remote); Concrete Bump Cutter, Grinder, Planing or Grooving Machine; Concrete Conveyor System; Concrete Laser/Screed; Concrete Paver (Slipform); Concrete Pump, Concrete Conveyor (Rotec or Bidwell Type); Concrete Slipform Placer Curb & Gutter Machine; Concrete Spreader & Distributor; Crane (Carry Deck, Mini) or Truck Mounted Hydraulic Crane (10 Tons or Under); Crane With a Lifting Capacity of 25 Tons or Under; Forestry Equipment, Timbco, Tree Shear, Tub Grinder, Processor; Gradall (Cruz-Aire Type); Grader or Motor Patrol; Grout Pump; Hydro-Blaster (10,000 PSI or Over); Loading Machine (Conveyor); Manhoist; Material or Stack Hoist; Mechanic or Welder; Milling Machine; Post Hole Digger or Driver; Scraper (Self Propelled or Tractor Drawn) 5 cu yds or More Capacity; Shoulder Widener; Sideboom; Skid Rig; Stabilizing or Concrete Mixer (Self-Propelled or 14S or Over); Straddle Carrier or Travel Lift; Tractor (Scraper, Dozer, Pusher, Loader); Tractor or Truck Mounted Hydraulic Backhoe; Trencher (Wheel Type or Chain Type); Tube Finisher; Tugger (NOT Performing Work on the Great Lakes); Winches & A-Frames.	32.07	18.18	50.25
544	Backfiller; Belting, Burlap, Texturing Machine; Broom or Sweeper; Compactor (Self-Propelled or Tractor Mounted, Towed & Light Equipment); Concrete Finishing Machine (Road Type); Environmental Burner; Farm or Industrial Type Tractor; Fireman (Pile Driver & Derrick NOT Performing Work on the Great Lakes); Forklift; Greaser; Jeep Digger; Joint Sawer (Multiple Blade); Launch (NOT Performing Work on the Great Lakes); Lift Slab Machine; Mechanical Float; Mulcher; Power Subgrader; Robotic Tool Carrier (WIth or Without Attachments); Self Propelled Chip Spreader; Shouldering Machine; Skid Steer Loader (With or Without Attachments); Telehandler; Tining or Curing Machine. Future Increase(s): Add $2/hr on 6/1/12; Add $2/hr on 6/1/13; Add $1.75/hr on 6/1/14. Premium Increase(s): DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.25/hr for work on projects involving temporary traffic control setup, for lane and shoulder closures, when work under artificial illumination conditions is necessary as required by the project provisions (including prep time prior to and/or cleanup after such time period).	33.22	18.90	52.12

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
545	Air Compressor (&/or 400 CFM or Over); Air, Electric or Hydraulic Jacking System; Automatic Belt Conveyor & Surge Bin; Boiler (Temporary Heat); Concrete Proportioning Plant; Crusher, Screening or Wash Plant; Generator (&/or 150 KW or Over); Heaters (Mechanical); High Pressure Utility Locating Machine (Daylighting Machine); Mudjack; Oiler; Prestress Machine; Pug Mill; Pump (3 Inch or Over) or Well Points; Rock, Stone Breaker; Screed (Milling Machine); Stump Chipper; Tank Car Heaters; Vibratory Hammer or Extractor, Power Pack.	30.42	17.58	48.00
546	Fiber Optic Cable Equipment.	24.39	15.45	39.84
547	Work Performed on the Great Lakes Including Diver; Wet Tender or Hydraulic Dredge Engineer.	36.20	18.81	55.01
548	Work Performed on the Great Lakes Including 70 Ton & Over Tug Operator; Assistant Hydraulic Dredge Engineer; Crane or Backhoe Operator; Hydraulic Dredge Leverman or Diver's Tender; Mechanic or Welder.	36.20	18.81	55.01
549	Work Performed on the Great Lakes Including Deck Equipment Operator or Machineryman (Maintains Cranes Over 50 Tons or Backhoes 115,000 Lbs. or more); Tug, Launch or Loader, Dozer or Like Equipment When Operated on a Barge, Breakwater Wall, Slip, Dock or Scow, Deck Machinery.	26.80	18.52	45.32
550	Work Performed on the Great Lakes Including Deck Equipment Operator; Machineryman or Fireman (Operates 4 Units or More or Maintains Cranes 50 Tons or Under or Backhoes 115,000 Lbs. or Under); Deck Hand, Deck Engineer or Assistant Tug Operator; Off Road Trucks - Great Lakes ONLY.	26.80	18.52	45.32

HEAVY EQUIPMENT OPERATORS
ASPHALT PAVEMENT OR OTHER WORK

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
551	Crane, Tower Crane, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of Over 100 Tons, Self Erecting Tower Crane With a Lifting Capacity of Over 4,000 Lbs., Crane With Boom Dollies; Crane, Tower Crane, Pedestal Tower or Derrick, With Boom, Leads and/or Jib Lengths Measuring 176 Ft or Over; Master Mechanic.	34.62	17.96	52.58

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
552	Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of 130,000 Lbs. or Over; Caisson Rig; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of 100 Tons or Under, Self-Erecting Tower Crane With a Lifting Capacity Of 4,000 Lbs. & Under; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 175 Ft or Under; Dredge (NOT Performing Work on the Great Lakes); Licensed Boat Pilot (NOT Performing Work on the Great Lakes); Pile Driver. Future Increase(s): Add $2/hr on 6/1/12; Add $2/hr on 6/1/13; Add $1.75/hr on 6/1/14. Premium Increase(s): DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.25/hr for work on projects involving temporary traffic control setup, for lane and shoulder closures, when work under artificial illumination conditions is necessary as required by the project provisions (including prep time prior to and/or cleanup after such time period).	33.72	18.90	52.62
553	Air, Track, Rotary or Percussion Drilling Machine &/or Hammers, Blaster; Asphalt Heater, Planer & Scarifier; Asphalt Milling Machine; Asphalt Screed; Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of Under 130,000 Lbs., Backhoe (Mini, 15,000 Lbs. & Under); Bituminous (Asphalt) Plant & Paver, Screed; Boring Machine (Directional, Horizontal or Vertical); Bulldozer or Endloader; Concrete Breaker (Large, Auto, Vibratory/Sonic, Manual or Remote); Concrete Conveyor System; Concrete Laser/Screed; Concrete Slipform Placer Curb & Gutter Machine; Crane (Carry Deck, Mini) or Truck Mounted Hydraulic Crane (10 Tons or Under); Crane With a Lifting Capacity of 25 Tons or Under; Forestry Equipment, Timbco, Tree Shear, Tub Grinder, Processor; Gradall (Cruz-Aire Type); Grader or Motor Patrol; Hydro-Blaster (10,000 PSI or Over); Loading Machine (Conveyor); Manhoist; Material or Stack Hoist; Mechanic or Welder; Milling Machine; Post Hole Digger or Driver; Railroad Track Rail Leveling Machine, Tie Placer, Extractor, Tamper, Stone Leveler or Rehabilitation Equipment; Roller (Over 5 Ton); Scraper (Self Propelled or Tractor Drawn) 5 cu yds or More Capacity; Shoulder Widener; Sideboom; Skid Rig; Stabilizing or Concrete Mixer (Self-Propelled or 14S or Over); Tractor (Scraper, Dozer, Pusher, Loader); Tractor or Truck Mounted Hydraulic Backhoe; Trencher (Wheel Type or Chain Type); Tube Finisher; Tugger (NOT Performing Work on the Great Lakes); Winches & A-Frames.	24.65	16.90	41.55
554	Backfiller; Broom or Sweeper; Compactor (Self-Propelled or Tractor Mounted, Towed & Light Equipment); Concrete Finishing Machine (Road Type); Environmental Burner; Farm or Industrial Type Tractor; Fireman (Asphalt Plant, Pile Driver & Derrick NOT Performing Work on the Great Lakes); Forklift; Greaser; Hoist (Tugger, Automatic); Jeep Digger; Joint Sawer (Multiple Blade); Launch (NOT Performing Work on the Great Lakes); Lift Slab Machine; Mechanical Float; Mulcher; Power Subgrader; Robotic Tool Carrier (With or Without Attachments); Roller (Rubber Tire, 5 Ton or Under); Self-Propelled Chip Spreader; Shouldering Machine; Skid Steer Loader (With or Without Attachments); Telehandler.	24.65	16.90	41.55

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
555	Air Compressor (&/or 400 CFM or Over); Air, Electric or Hydraulic Jacking System; Augers (Vertical & Horizontal); Automatic Belt Conveyor & Surge Bin; Boiler (Temporary Heat); Crusher, Screening or Wash Plant; Generator (&/or 150 KW or Over); Heaters (Mechanical); High Pressure Utility Locating Machine (Daylighting Machine); Mudjack; Oiler; Prestress Machine; Pug Mill; Pump (3 Inch or Over) or Well Points; Rock, Stone Breaker; Screed (Milling Machine); Stump Chipper; Tank Car Heaters; Vibratory Hammer or Extractor, Power Pack.	20.00	3.68	23.68
556	Fiber Optic Cable Equipment.	24.39	15.45	39.84

********** END OF RATES **********

CONSTRUCTION DOCUMENT SET

FRAZIER POINT PIER & PLAZA

Aug 8, 2012

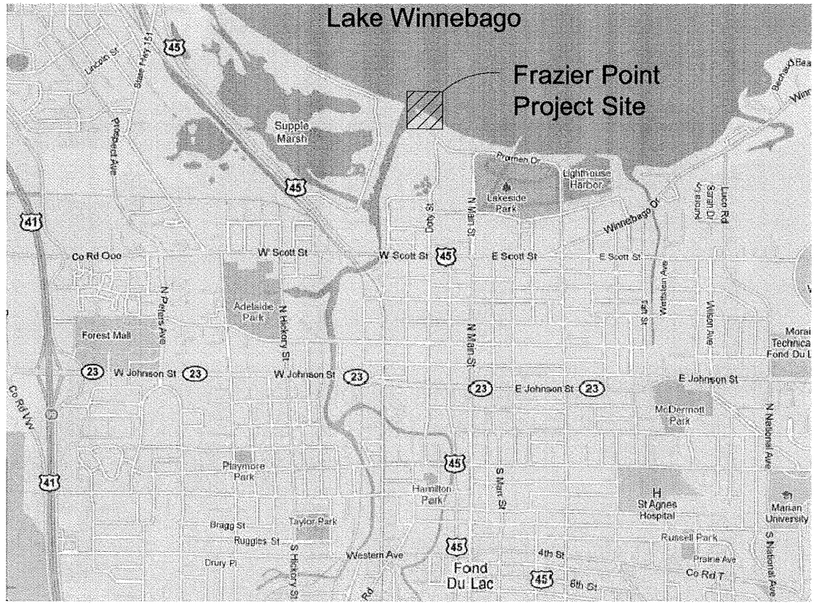
Lakeside Park
Fond du Lac, Wisconsin

City of Fond du Lac Parks Department
530 N. Doty Street
Fond du Lac, Wisconsin 54935

Sheet Index

Sheet No.	Sheet Title
-	TITLE SHEET
C100	EXISTING CONDITIONS
C101	DEMOLITION/EROSION CONTROL PLAN
C102	SITE GRADING PLAN
C103	SITE UTILITY PLAN
C104	SITE LAYOUT PLAN
C105	LANDSCAPE PLAN
C500	DETAIL SHEET
C501	DETAIL SHEET
C502	DETAIL SHEET
C503	DETAIL SHEET
C504	DETAILSECTION SHEET
C505	DETAIL/SECTION SHEET

Location Map Lat: 43-48-1.4N Long: 88-27-4.8W



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Drawings Prepared By:

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Professional Seal

Revision	Date

Project Name

Frazier Point
Pier and Plaza

City of Fond du Lac
Wisconsin

Drawn By:	AW
Checked By:	BT
File:	TITLE
Issued For:	REVIEW
Issue Date:	08/08/12
Project No.	2359

DRAWING

Title Sheet

N

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Sheet Number

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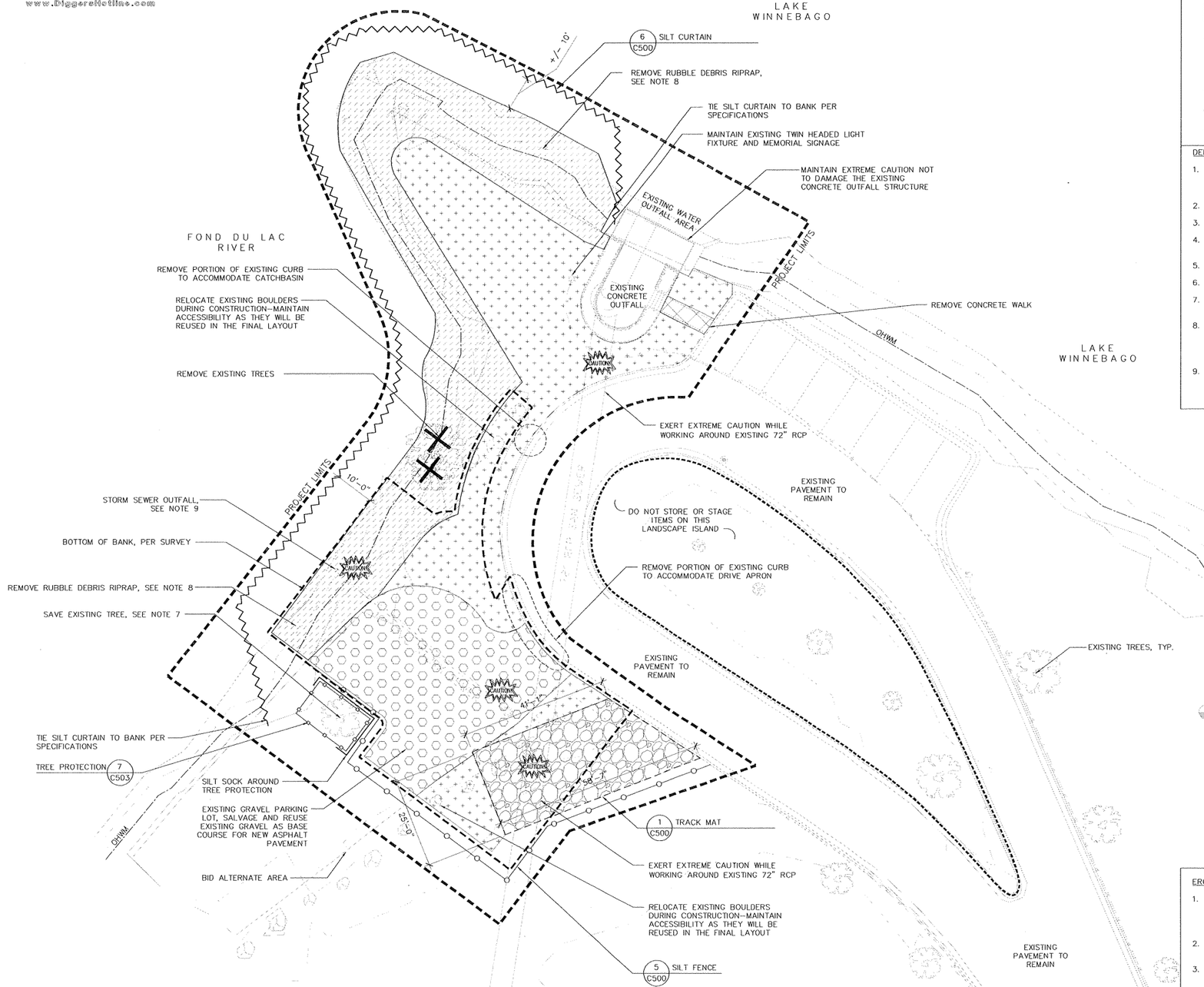

LEGEND:

- TRACK MAT (1 C500)
- REMOVE RUBBLE DEBRIS, SEE NOTE 8
- EXISTING PAVEMENT/GRAVEL, SALVAGE AND REUSE EXISTING GRAVEL AS BASE COURSE FOR NEW ASPHALT PAVEMENT
- REMOVE EXISTING LAWN/DEBRIS AREA
- SILT FENCE (5 C500)
- REMOVE VEGETATION
- SILT CURTAIN (6 C500)
- PROJECT LIMITS
- ORDINARY HIGH WATER MARK (OHWM) EL: 748.88

DEMOLITION NOTES:

1. CAUTION NEEDS TO BE TAKEN DURING CONSTRUCTION FOR THE CREW TO BE ON-ALERT TO ANY UNUSUAL FILL THAT MAY BE ENCOUNTERED (SUCH AS METAL, GLASS, BROKEN BRICKS, SHINGLES, ETC.) AS THAT MAY BE AN INDICATOR OF AN UNKNOWN WASTE FILL AREA.
2. CALL DIGGERS HOTLINE TO LOCATE UTILITIES PRIOR TO BEGINNING WORK ON SITE 1.800.242.8511
3. CLEAR AND GRUB VEGETATION TO THE LIMITS OF WORK PER SPECIFICATIONS
4. UNLESS OTHERWISE NOTED, ALL ITEMS DESIGNATED FOR DEMOLITION SHALL BE REMOVED AND DISPOSED OF OFF-SITE
5. DO NOT STORE OR STAGE ITEMS IN CENTRAL DRIVE ISLAND
6. SEE GENERAL NOTES AND SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS
7. LIMB UP EXISTING WILLOW TREE TO REDUCE CONSTRUCTION STRESS. CITY FORESTER TO DIRECT AMOUNT OF TREE CANOPY TO REMOVE
8. ALL EXISTING RUBBLE CONCRETE CURBING AND SIDEWALKS ALONG THE SHORELINE SHALL BE REMOVED AND LEGALLY DISPOSED OF OFF-SITE. EXISTING MATERIAL THAT IS 6-24" IN DIAMETER (MUST BE SPHERICAL) MAY BE SALVAGED AND REUSED AS RIP RAP STONE (2/C506) ALONG THE SHORELINE
9. EXISTING 10" PVC STORM OUTFALL SHALL REMAIN IN ITS CURRENT CONDITION. DO NOT DISTURB

EROSION CONTROL NOTES:

1. CAUTION NEEDS TO BE TAKEN DURING CONSTRUCTION FOR THE CREW TO BE ON-ALERT TO ANY UNUSUAL FILL THAT MAY BE ENCOUNTERED (SUCH AS METAL, GLASS, BROKEN BRICKS, SHINGLES, ETC.) AS THAT MAY BE AN INDICATOR OF AN UNKNOWN WASTE FILL AREA. IF SUCH DEBRIS IS ENCOUNTERED WORK SHALL CEASE AND ARCHITECT AND CITY DPW SHALL BE CONTACTED:
2. PROVISIONS TO PREVENT MUD-TRACKING OFF-SITE ONTO PUBLIC THOROUGHFARES DURING CONSTRUCTION SHALL BE TAKEN IN THE FORM OF A TRACK PAD
3. ALL EROSION CONTROL PRACTICES SHALL BE INSPECTED DAILY AND MAINTAINED IN A WORKING CONDITION
4. ACCUMULATED SEDIMENT SHALL BE REMOVED FROM BEHIND SILT FENCES AND BARRIERS BEFORE IT REACHES A DEPTH THAT IS EQUAL TO HALF THE BARRIER HEIGHT
5. ALL EROSION CONTROL MEASURES/PRACTICES SHALL BE MAINTAINED UNTIL THE DISTURBED AREAS THEY PROJECT ARE PERMANENTLY STABILIZED AND ESTABLISHED, AT WHICH POINT THE EROSION CONTROL MEASURES MAY BE REMOVED

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Project Name

Frazier Point
Pier and Plaza

City of Fond du Lac
Wisconsin

Drawn By:	AW
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DRAWING

Demolition/Erosion Control Plan

N
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Scale Indicated for 22"x34" Sheet Size

Sheet Number

C101

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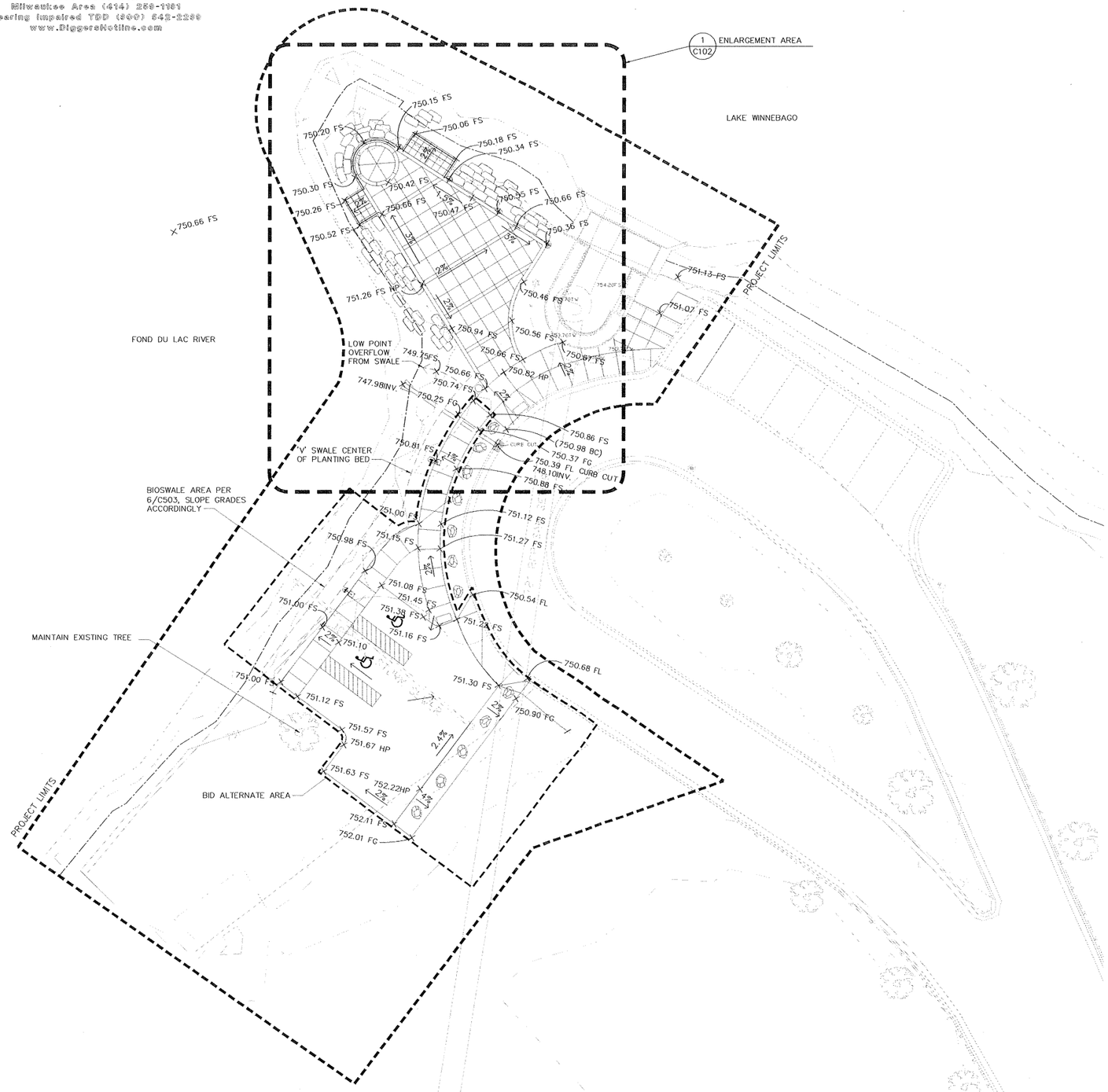

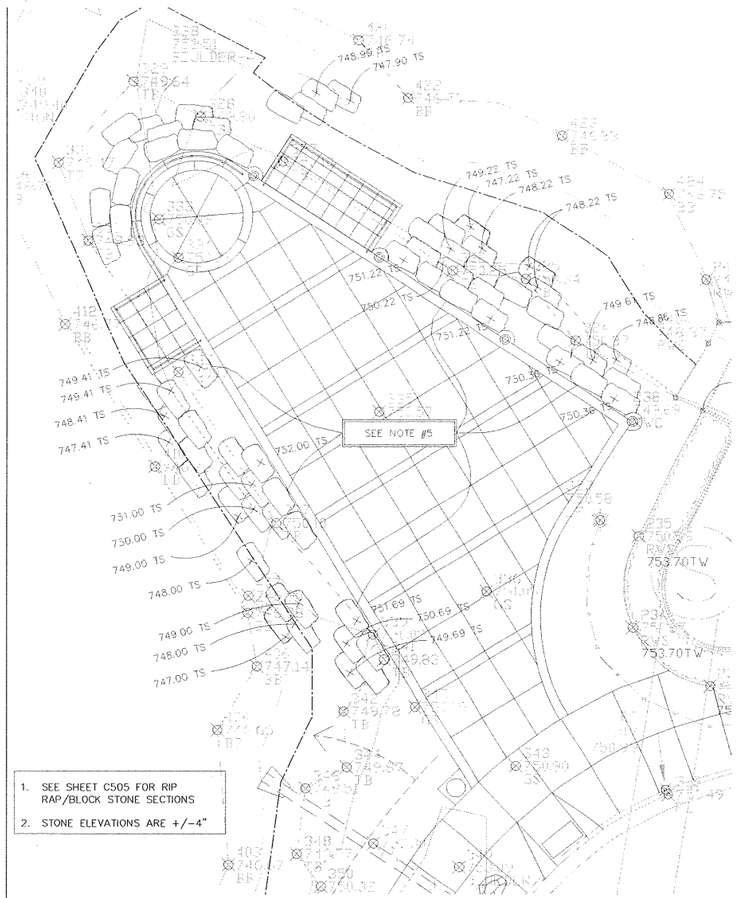

1. SEE SHEET C505 FOR RIP RAP/BLOCK STONE SECTIONS
2. STONE ELEVATIONS ARE +/-4"

1 C102 ENLARGMENT AREA

SCALE 1/8"" = 1'-0"

LEGEND:

TB	TOP OF BANK
BB	BOTTOM OF BANK
TC	TOP OF CURB
BC	BACK OF CURB
FL	FLOW LINE
FS	FINISH SURFACE
FG	FINISH GRADE
EG	EXISTING GRAVEL
GS	GROUND SHOT
TS	TOP OF STONE (LIMESTONE BLOCKS)
HP	HIGH POINT
LP	LOW POINT

PROJECT LIMITS

SITE GRADING NOTES:

1. CONTRACTOR SHALL PERFORM ALL EARTHWORK AND GRADING PER SPECIFICATIONS. ALL PROPOSED PAVING, CURBS, AND PLANTING AREAS SHALL TRANSITION SMOOTHLY TO EXISTING ADJACENT FEATURES. PROVIDE POSITIVE DRAINAGE ON ALL PAVING AND THROUGHOUT ALL PLANTING AREAS.
2. EXCAVATED MATERIAL NOT SUITABLE FOR BACKFILLING SHALL BE REMOVED AND LEGALLY DISPOSED OF OFF-SITE.
3. CONTOUR INTERVAL IS ONE (1) FOOT.
4. THE PROPOSED IMPROVEMENTS SHOWN ON THESE DRAWINGS ARE SUPERIMPOSED ON A BASE SHEET. THIS BASE SHEET IS COMPLIED FROM THE TOPOGRAPHIC SURVEY, OTHER ENGINEERING DOCUMENTS, AND OTHER DATA AS MADE AVAILABLE TO THE LANDSCAPE ARCHITECT. THIS BASE SHEET INFORMATION IS SHOWN IN HALFTONE ON THE PLANS. THE LANDSCAPE ARCHITECT SHALL NOT BE HELD LIABLE FOR CHANGES, INACCURACIES, OMISSIONS, OR OTHER ERRORS ON THESE DOCUMENTS.
5. THE TOP OF STONE IS SET 9" ABOVE THE ADJACENT FINISH GRADE CONCRETE, SET STONE ACCORDINGLY

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Frazier Point
Pier and Plaza

City of Fond du Lac
Wisconsin

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DRAWING

Grading Plan

N
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Scale Indicated for 22"x34" Sheet Size

Sheet Number

C102

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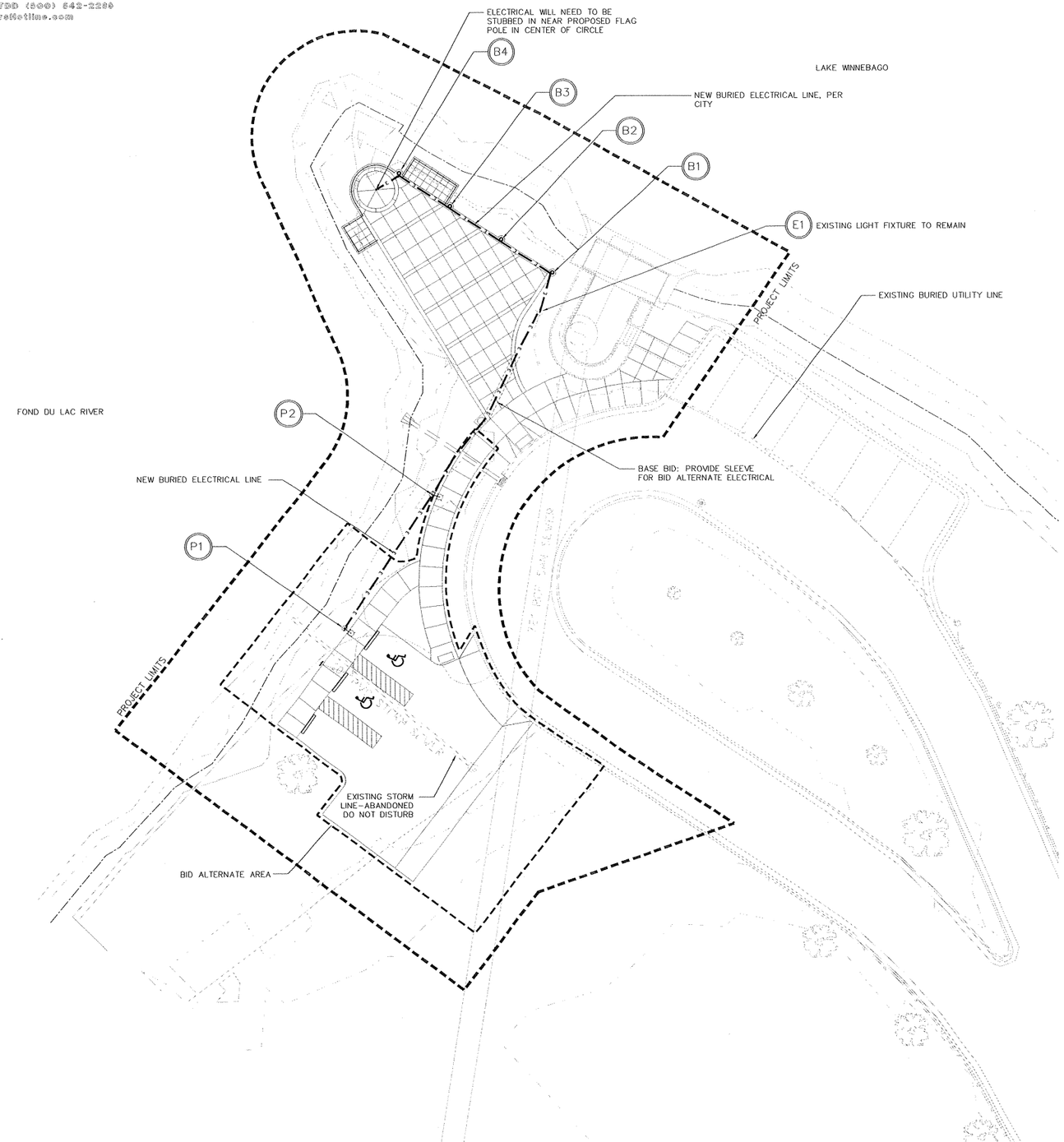

NOTES:

1. THE UTILITY PLAN IS SHOWN FOR REFERENCE ONLY. ALL ELECTRICAL SHALL BE PER THE OWNER. CONTRACTOR TO COORDINATE WITH CITY ON NECESSARY SLEEVING AND STUBBING.
2. THE ELECTRICAL SYSTEM SHALL INCLUDE PHOTOCELL AND TIMER CONTROLS.
3. LOCATE FIXTURES PER THE SITE LAYOUT PLAN C104

LIGHTING SCHEDULE: REFERENCE ONLY

P1 – P2	TYPE A – PEDESTRIAN LIGHT	TOTAL OF 2
B1 – B4	TYPE B – BOLLARD LIGHT	TOTAL OF 4
E1	EXISTING LIGHT FIXTURE TO REMAIN	

REFERENCE ONLY, ALL ELECTRICAL BY OWNER

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DRAWING
Utility Plan

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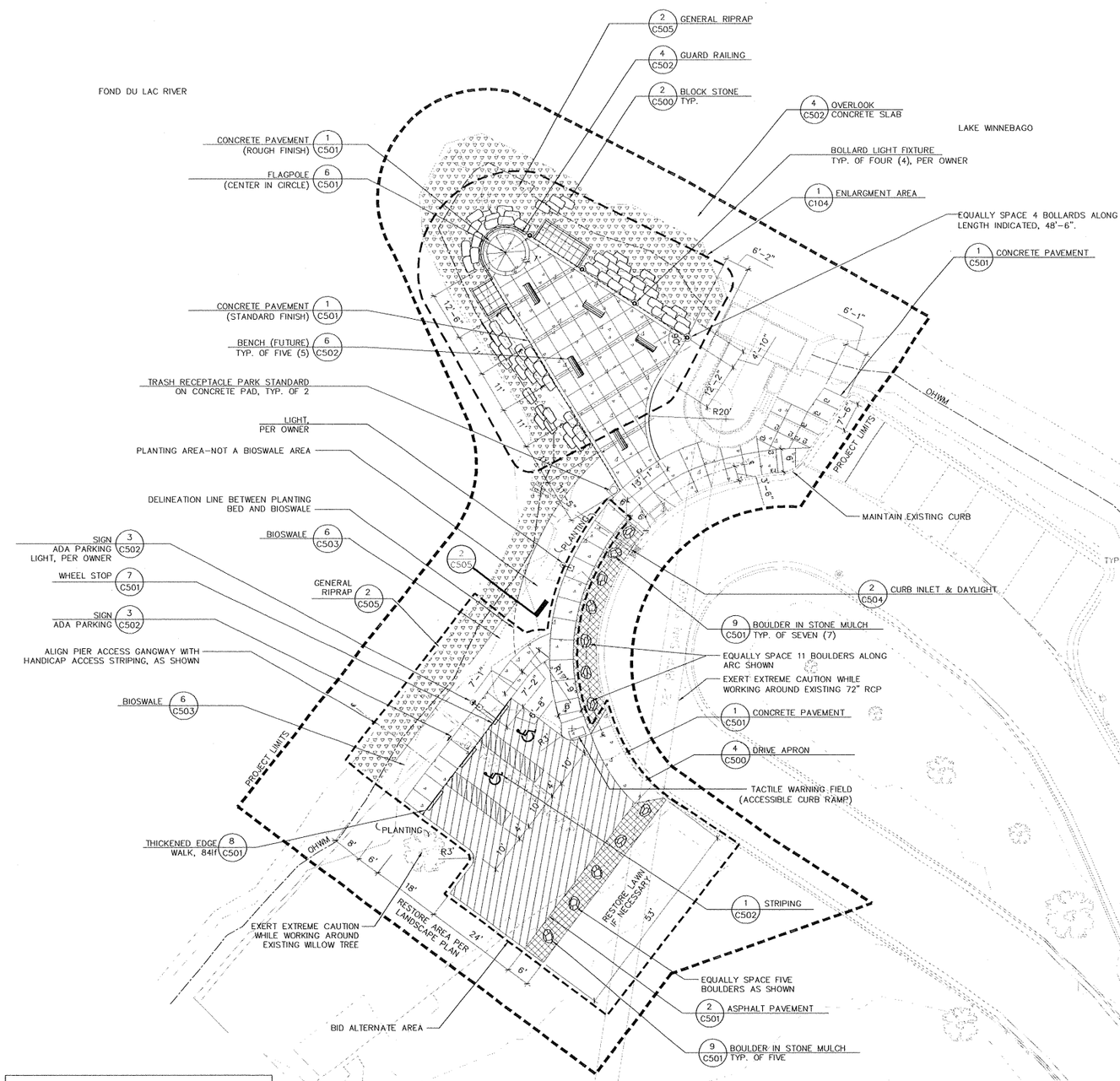
C103



BID ALTERNATE ITEMS:
AREA TO INCLUDE, BUT NOT LIMITED TO THE FOLLOWING:

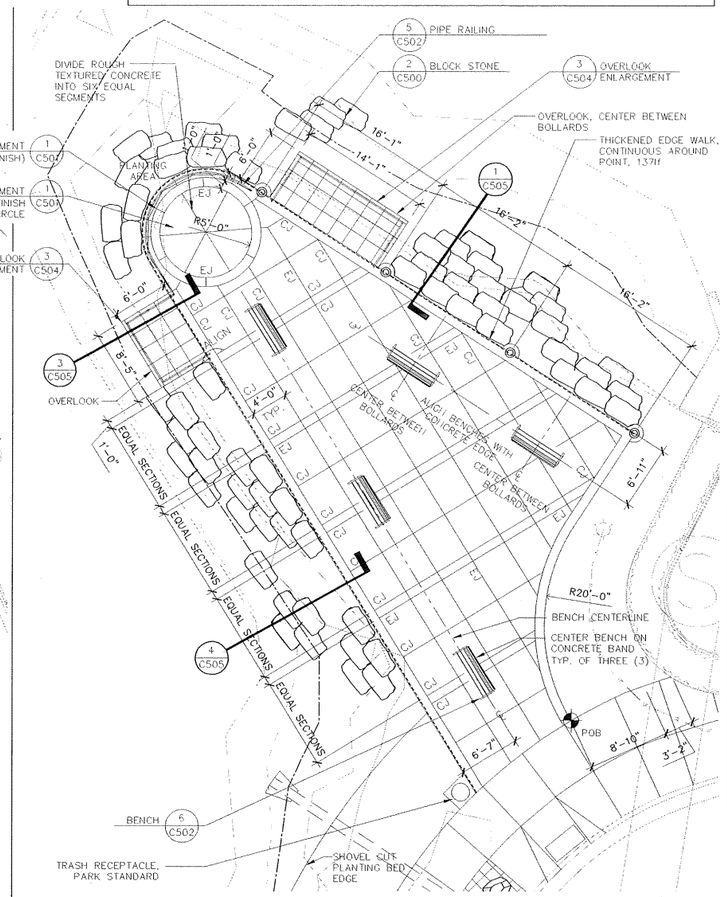
- SITE CLEARING, DEMOLITION, AND EARTHWORK
- CONCRETE PAVEMENT
- ACCESSIBLE CURB RAMP
- THICKENED EDGE WALK
- CONCRETE LIGHT BASE
- ASPHALT PAVEMENT
- WHEEL STOPS
- SEEDED LAWN
- SIGNS
- BENCH SEATING
- LIGHT FIXTURES AND BASES
- PLANTING SOIL AND PLANTS

LEGEND:

- 1 C501 CONCRETE PAVEMENT TYPE 1
- 2 C505 GENERAL RIPRAP
- 6 C501 STONE MULCH
- 2 C501 ASPHALT PAVEMENT
- POB POINT OF BEGINNING
- OHWM
- PROJECT LIMITS
- ALTERNATE 1

SITE LAYOUT NOTES:

1. ALL WRITTEN DIMENSIONS SUPERCEDE SCALED DIMENSIONS
2. CONTRACTOR SHALL INSTALL EXPANSION JOINTS BETWEEN CONCRETE PAVING, CURBS, AND EXISTING PAVEMENT OR CONCRETE STRUCTURES
3. ALL LAYOUT CURVES SHALL BE SMOOTH AND CONTINUOUS WITH CAREFULLY MATCHED TANGENTS
4. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS AND EQUIPMENT FOR THE INSTALLATION OF ALL IMPROVEMENTS AS SHOWN ON THE DRAWINGS AND AS DESCRIBED IN THE SPECIFICATIONS
5. TRASH RECEPTACLES BY OTHERS (PARK STANDARD SHALL BE USED)
6. CJ = CONTROL JOINT
   EJ = EXPANSION JOINT



1 C104 ENLARGEMENT AREA

SCALE 1/8"" = 1'-0"

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DRAWING

Site Layout Plan

N

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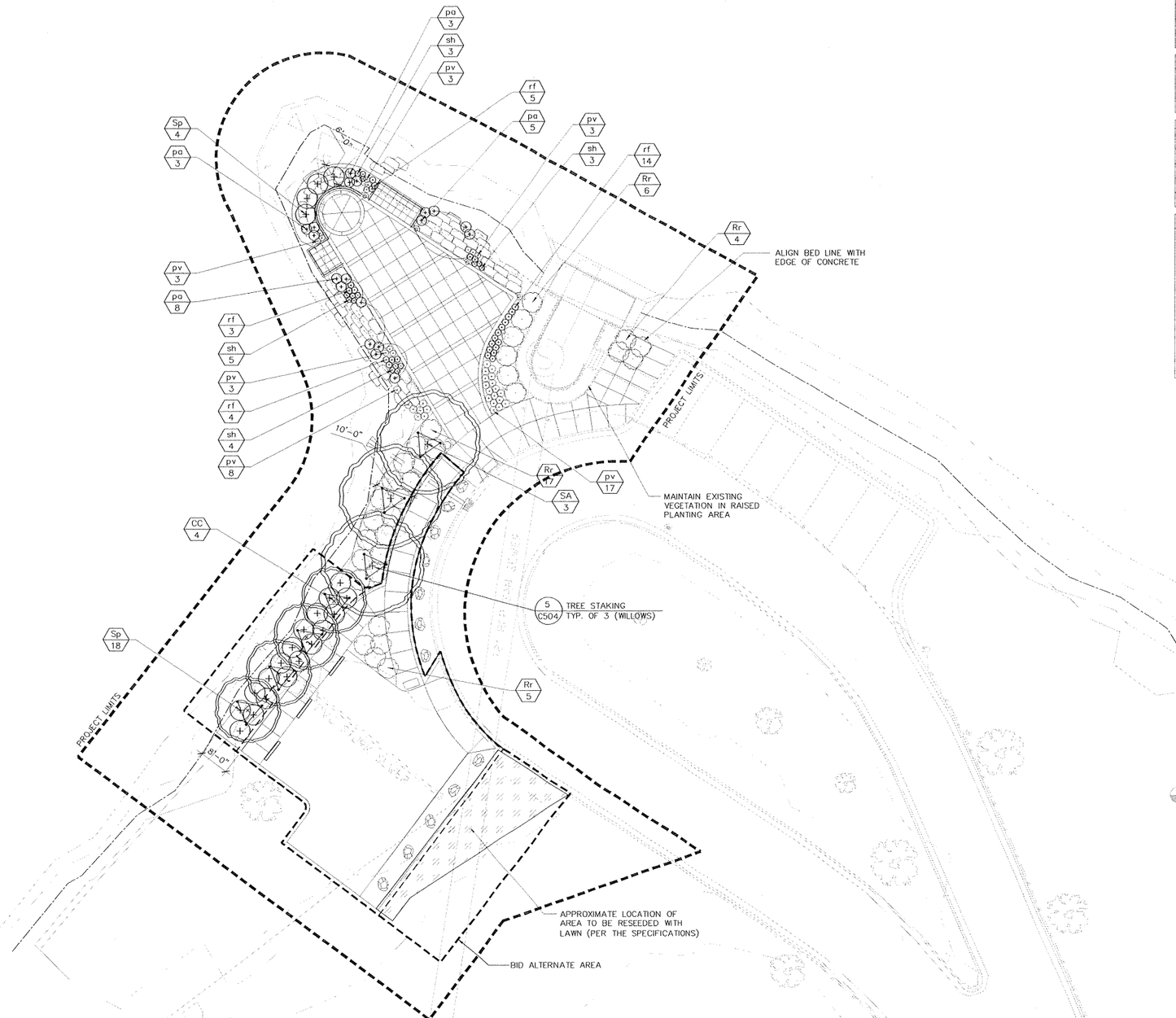
Scale Indicated for 22"x34" Sheet Size

Sheet Number

C104



BID ALTERNATE ITEMS:
AREA TO INCLUDE, BUT NOT LIMITED TO THE FOLLOWING:

- SITE CLEARING, DEMOLITION, AND EARTHWORK
- CONCRETE PAVEMENT
- ACCESSIBLE CURB RAMP
- THICKENED EDGE WALK
- CONCRETE LIGHT BASE
- ASPHALT PAVEMENT
- WHEEL STOPS
- SEEDED LAWN
- SIGNS
- BENCH SEATING
- LIGHT FIXTURES AND BASES
- PLANTING SOIL AND PLANTS

LANDSCAPE PLANT LEGEND

Symbol	Botanical name	Common Name	Size	Root	Qty	Comments
SHADE TREES						
CC	Carpinus caroliniana	American Hornbeam	1.5" Cal.	B&B	4	single stem
SA	Salix alba 'Tristis'	Golden Weeping Willow	2" Cal.	B&B	3	match form/size
DECIDUOUS SHRUBS						
Sp	Salix purpurea 'Nana'	Dwarf Arctic Blue Willow	2 Gal.	Cont.	22	
Rr	Rugosa Rose 'alba'	White Rugosa Rose	3 Gal.	Cont.	27	white flowers
PERENNIALS/GROUNDCOVERS						
pa	Perovskia atriplicifolia	Russian Sage	1 Gal.	Cont.	19	36" spacing
pv	Panicum virgatum 'Prairie Fire'	Prairie Fire Switch Grass	1 Gal.	Cont.	37	24" spacing
rf	Rudbeckia fulgida 'Goldsturm'	Black Eyed Susan	1 Gal.	Cont.	26	18" spacing
sh	Sporobolus heterolepis	Prairie Dropseed	1 Gal.	Cont.	15	24" spacing

SEED MIXES

NOTE: ALL PLANTINGS ARE TO BE ALTERNATE BID ITEMS.

LAWN SEED MIX: PER SPECIFICATIONS

NOTES:
1. CONTRACTOR TO FINISH GRADE ALL BED AREAS AS NECESSARY PER THE SPECIFICATIONS IN ANTICIPATION OF PLANTING PER THE CITY OF FOND DU LAC.
2. IF DISCREPANCIES EXIST BETWEEN THE PLANTING LEGEND QUANTITY LISTED AND THE PLANT SYMBOLS IDENTIFIED, QUANTITY TOTALS SHOULD BE BASED ON PLANT SYMBOLS IDENTIFIED.

TREE STAKING SYMBOL. STAKE ALL TREES IDENTIFIED BY THIS SYMBOL.
SEE DETAIL 5/C503 FRO POLE CONFIGURATION AND STAKING INFORMATION

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DRAWING

Landscape Plan

N

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Scale Indicated for 22"x34" Sheet Size

Sheet Number

C105

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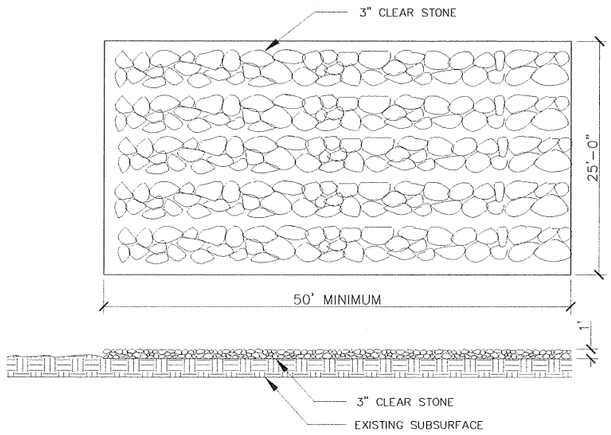
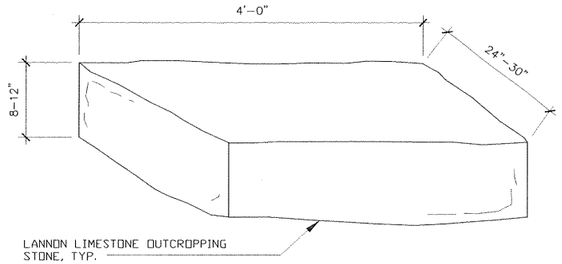


1 C500 TRACK MAT

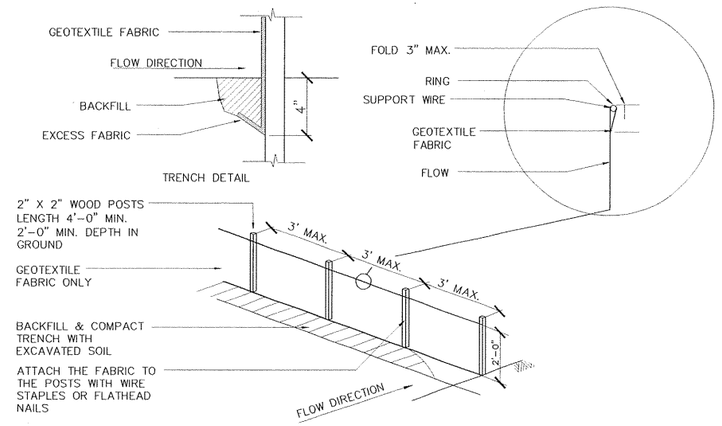
NTS



NOTES:
- GAPS BETWEEN OUTCROPPING STONES AND CONCRETE SHALL BE FILLED WITH GRAVEL
- OFFSET VERTICAL JOINTS BETWEEN STONES

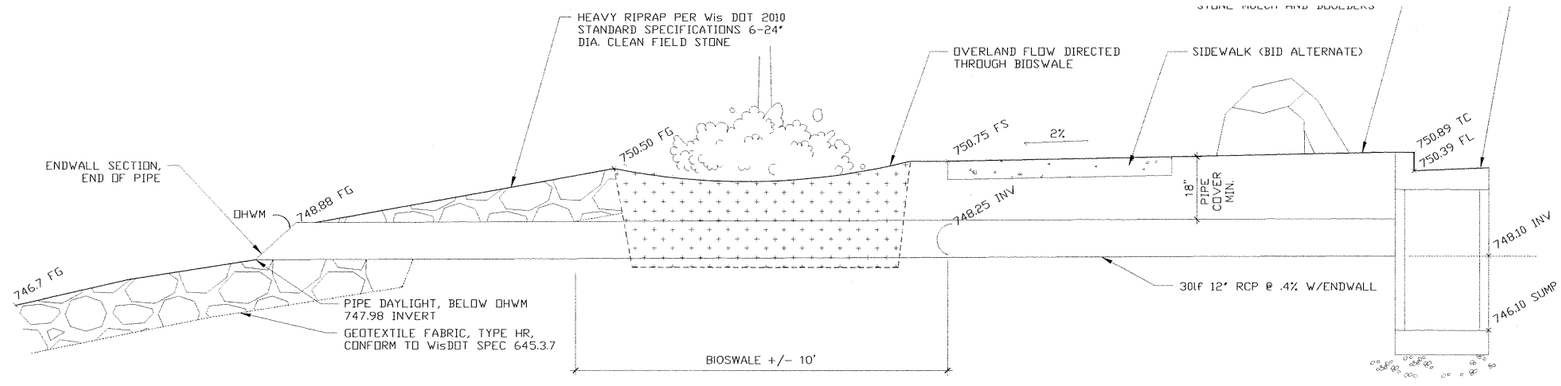
2 C500 BLOCK STONE

NTS



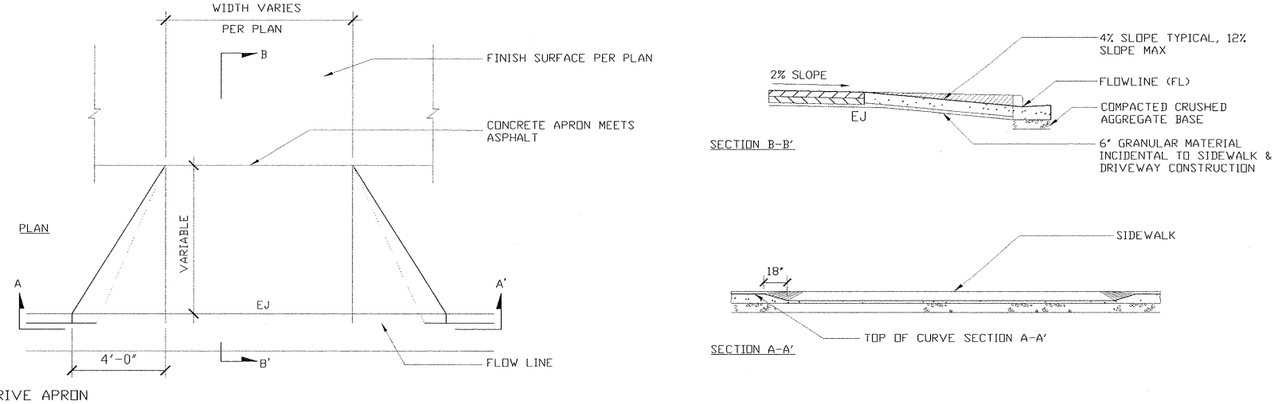
5 C500 SILT FENCE

NTS



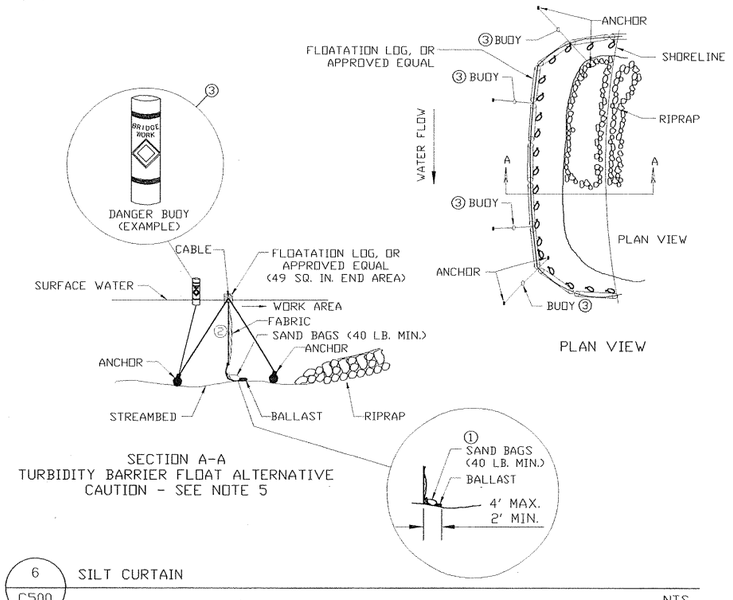
2 C504 CURB INLET AND DAYLIGHT SECTION

SCALE 1/2" = 1'-0"



4 C500 DRIVE APRON

NTS



6 C500 SILT CURTAIN

NTS

GENERAL NOTES:

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD AND THE APPLICABLE SPECIAL PROVISIONS.

TURBIDITY BARRIER MAY BE REMOVED AT THE ENGINEERS OR PROJECT MANAGERS DISCRETION, WHEN PERMANENT EROSION CONTROL MEASURES HAVE BEEN ESTABLISHED.

① SANDBAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER OR PROJECT MANAGER TO MEET ADVERSE FIELD CONDITIONS. SPACE AS APPROPRIATE FOR SITE CONDITIONS.

② ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.

③ USE AS DIRECTED BY THE COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.

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Frazier Point
Pier and Plaza

City of Fond du Lac
Wisconsin

Drawn By:	AW
Checked By:	BT
File:	P-D
Issued For:	REVIEW
Issue Date:	08/08/12
Project No.	2359

DRAWING
Details

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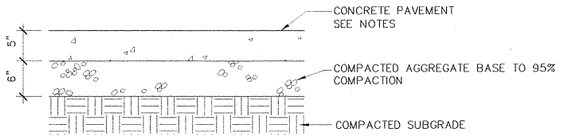
Sheet Number

C500

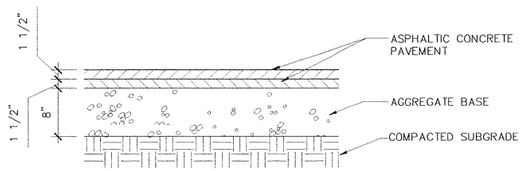


NOTES:

1. EXPANSION JOINTS EVERY 30' O.C. FOR LINEAR WALKS
2. SEE LAYOUT PLANS AND DETAIL 5/C501 FOR CONTROL & EXPANSION JOINT SPACING
3. CONCRETE PAVEMENT WITH MEDIUM BROOM FINISH PERPENDICULAR TO DIRECTION OF TRAFFIC

1 C501 CONCRETE PAVEMENT

SCALE 1" = 1'-0"

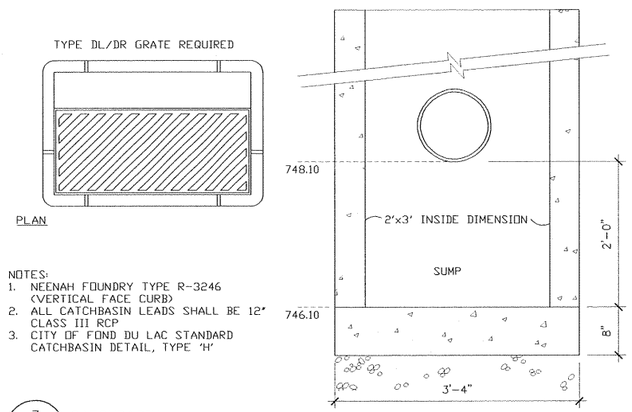


NOTES:

1. PER CITY SPECIFICATIONS

2 C501 ASPHALT PAVEMENT

SCALE 1" = 1'-0"

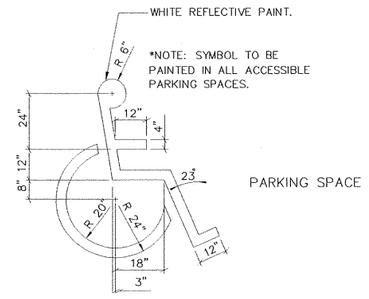


NOTES:

1. NEENAH FOUNDRY TYPE R-3246 (VERTICAL FACE CURB)
2. ALL CATCHBASIN LEADS SHALL BE 12" CLASS III RCP
3. CITY OF FOND DU LAC STANDARD CATCHBASIN DETAIL, TYPE 'H'

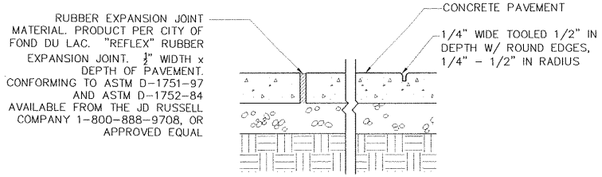
3 C501 CATCHBASIN CITY OF FOND DU LAC STANDARD

SCALE 1" = 1'-0"



4 C501 ADA SYMBOL

SCALE 1/4" = 1'-0"

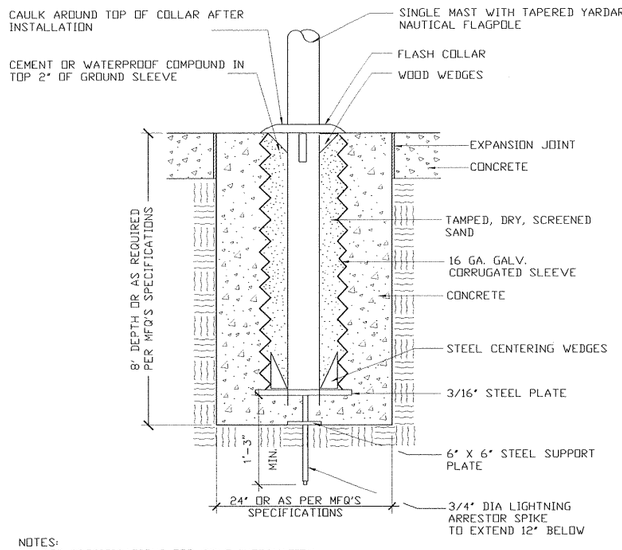


NOTES:

1. PROVIDE EXPANSION JOINTS 30' OC MAX. ALL WAYS
2. SEE LAYOUT PLANS FOR CONTROL JOINTS (CJ) & EXPANSION JOINTS (EJ)

5 C501 EXPANSION/CONTROL JOINT

SCALE 1"=1'-0"

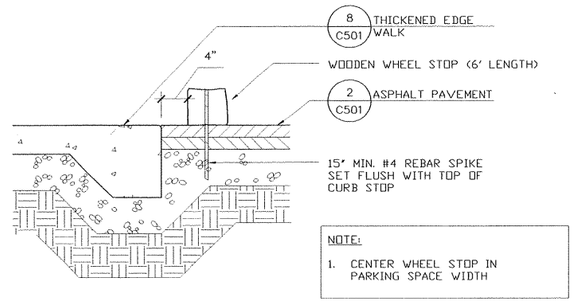


NOTES:

1. SEE SPECIFICATIONS FOR POLE INFORMATION
2. INSTALLATION AND FOOTINGS SHALL BE DONE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND SOIL CONDITIONS. DEWATER AS NEEDED.
3. MATERIAL WITH IN A 3' PERIMETER OF FLAG POLE BASE SHALL BE COMPACTED GRANULAR BACKFILL.

6 C501 FLAGPOLE

SCALE 1" = 1'-0"

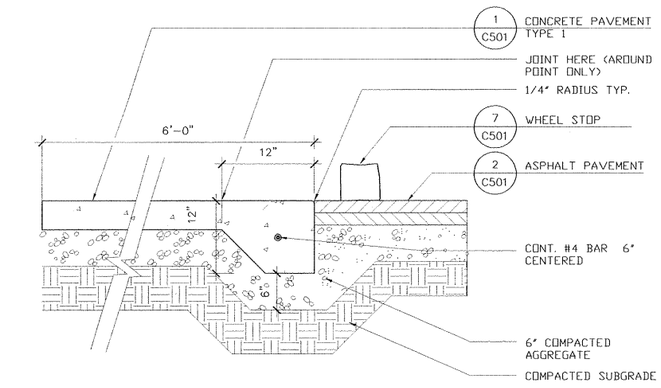


NOTE:

1. CENTER WHEEL STOP IN PARKING SPACE WIDTH

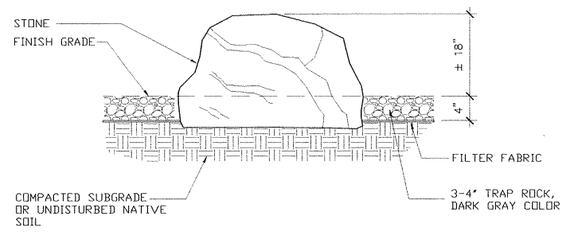
7 C501 WHEEL STOP

SCALE 1" = 1'-0"



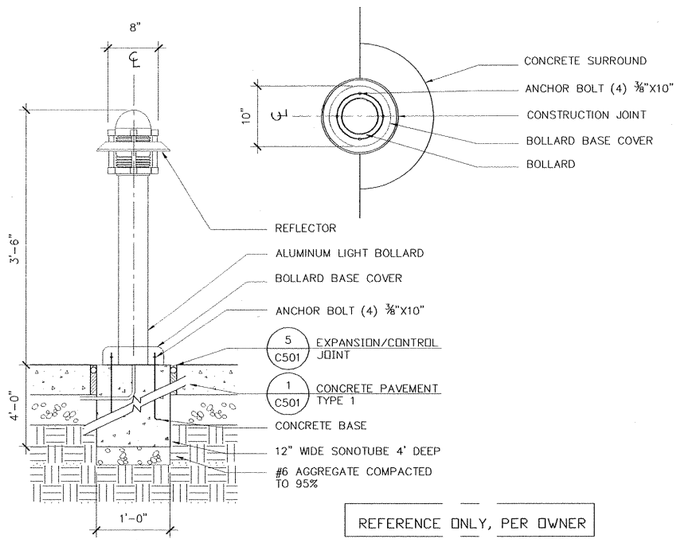
8 C501 THICKENED EDGE WALK

SCALE 1" = 1'-0"



9 C501 BOULDER IN STONE MULCH

SCALE 1" = 1'-0"



REFERENCE ONLY, PER OWNER

10 C501 BOLLARD LIGHT FIXTURE

SCALE 1" = 1'-0"

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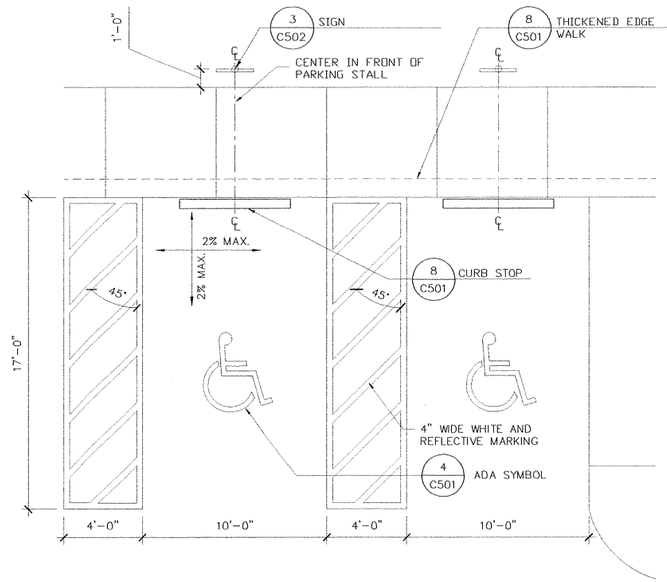
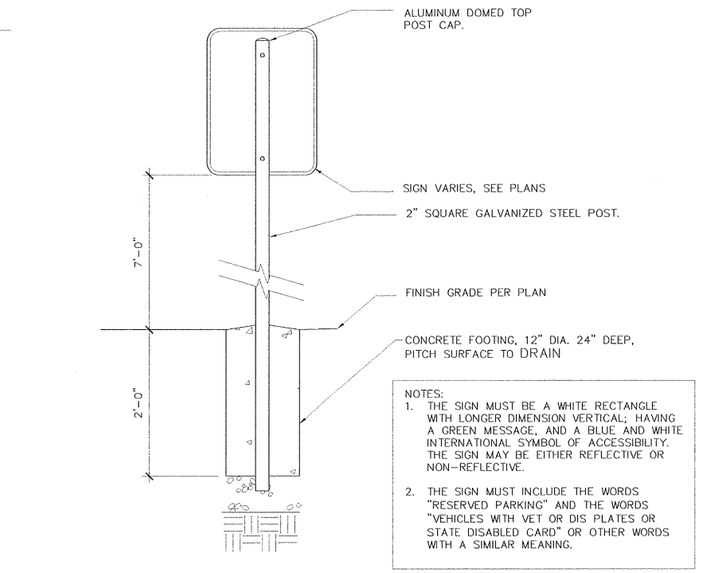


1 / C502 STRIPING

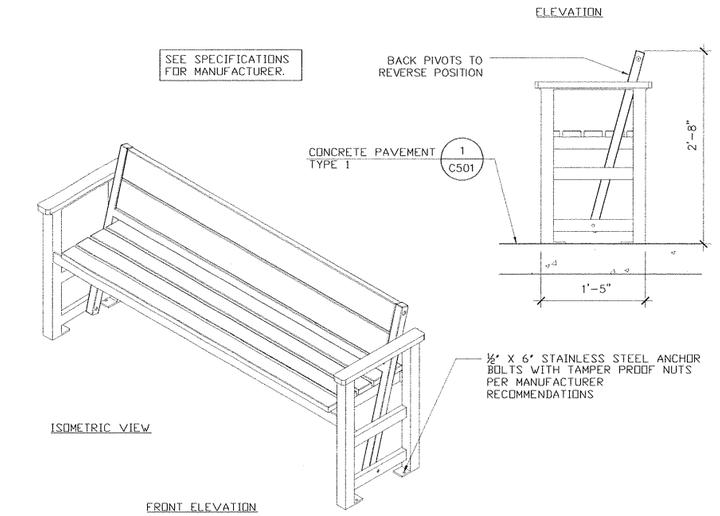
SCALE 1/4" = 1'-0"



NOTES:
1. THE SIGN MUST BE A WHITE RECTANGLE WITH LONGER DIMENSION VERTICAL; HAVING A GREEN MESSAGE, AND A BLUE AND WHITE INTERNATIONAL SYMBOL OF ACCESSIBILITY. THE SIGN MAY BE EITHER REFLECTIVE OR NON-REFLECTIVE.
2. THE SIGN MUST INCLUDE THE WORDS "RESERVED PARKING" AND THE WORDS "VEHICLES WITH VET OR DIS PLATES OR STATE DISABLED CARD" OR OTHER WORDS WITH A SIMILAR MEANING.

3 / C502 SIGN

SCALE NTS



BENCH AVAILABLE FROM:

MAGLIN SITE FURNISHINGS
27 BYSHAM PARK DR.
WOODSTOCK ON
N4T 1P1

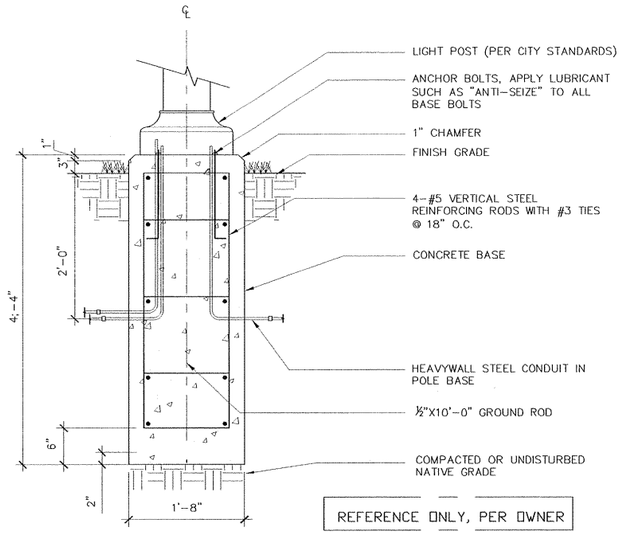
1-800-716-5506 (PHONE)
1-877-560-9393 (FAX)
WWW.MAGLIN.COM

ITEM # MLB400W-FLIP BACK 6' LENGTH WITH ARMS

5'-10"

6 / C502 BENCH (FUTURE)

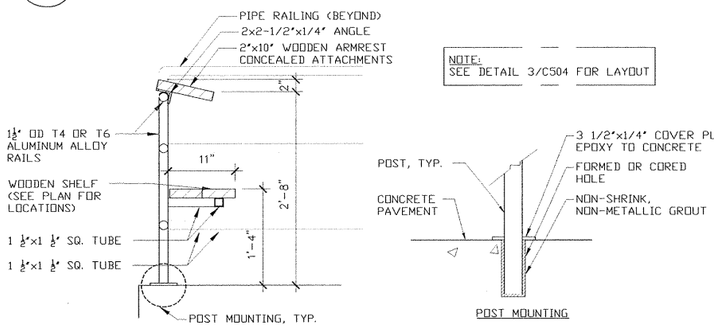
SCALE 1" = 1'-0"



REFERENCE ONLY, PER OWNER

2 / C502 LIGHT BASE

SCALE 1" = 1'-0"

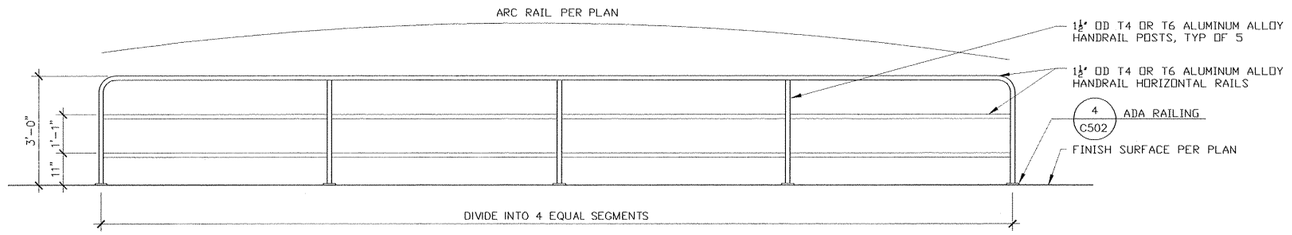


NOTE:
SEE DETAIL 3/C504 FOR LAYOUT

POST MOUNTING

4 / C502 ADA RAILING
PIPE RAILING-34"

SCALE 1" = 1'-0"



NOTES:
1. HANDRAIL TO BE SERIES 500 NON-WELDED ALUMINUM PIPE RAILING WITH TWO HORIZONTAL RAILS
2. FACTORY ASSEMBLE SECTIONS FOR SHIPPING AND INSTALLATION
3. ALL COMPONENTS TO BE SUPPLIED WITH A SATIN CLEAR ANODIZED FINISH
4. POSTS TO BE FITTED WITH INTERNAL REINFORCEMENT WITH A HEAVY BASE
5. PROVIDE SHOP DRAWINGS PRIOR TO INSTALLATION OF RAILING

5 / C502 PIPE RAILING
PIPE RAILING-36"

SCALE 1/2" = 1'-0"

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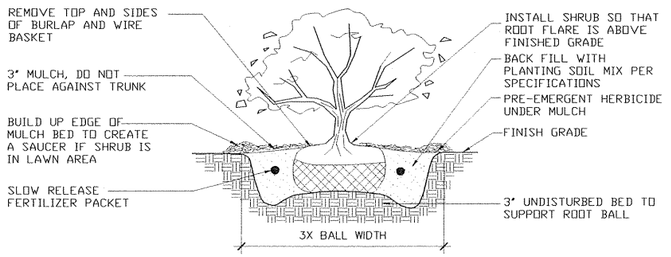
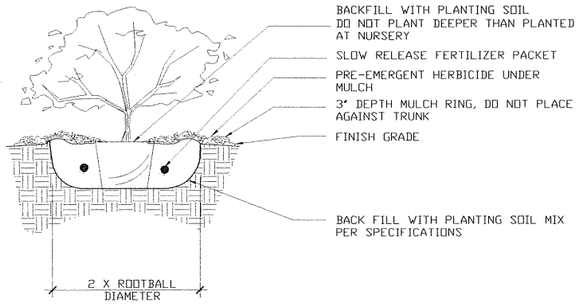


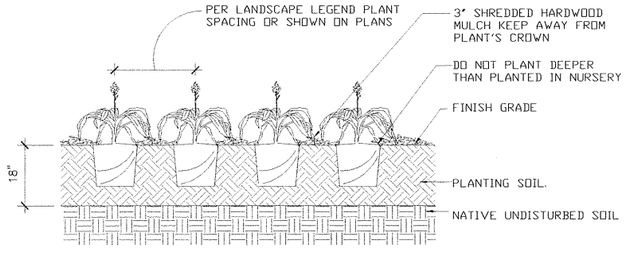
1 C503 B&B SHRUB PLANTING DETAIL

NTS



2 C503 CONTAINER SHRUB PLANTING DETAIL

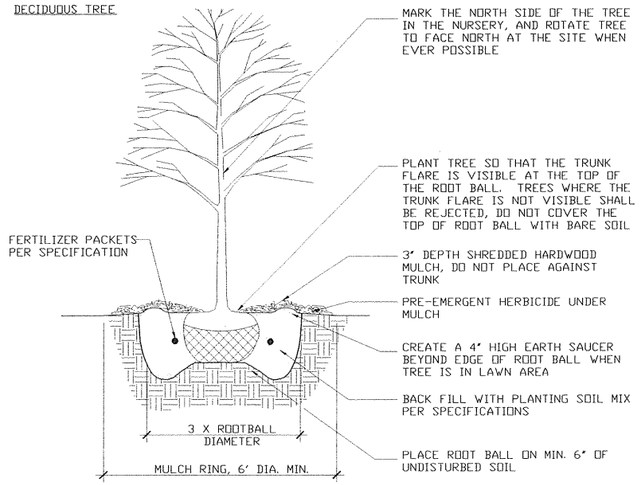
NTS



3 C503 GROUNDCOVER/PERENNIAL PLANTING DETAIL

NTS

DECIDUOUS TREE

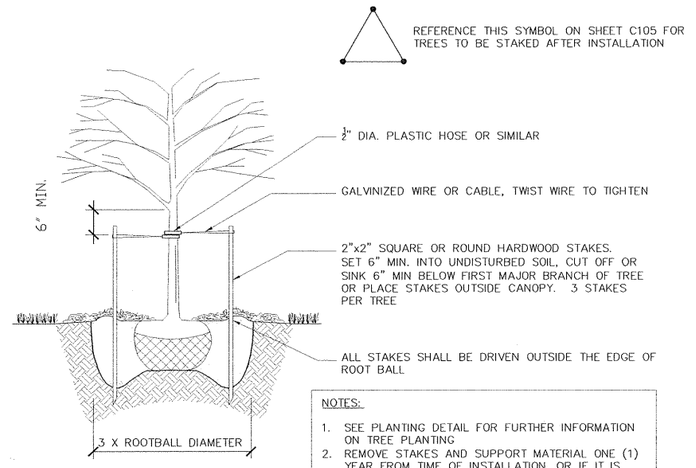


NOTES:

1. DO NOT HEAVILY PRUNE THE TREE AT PLANTING, PRUNE ONLY CROSSOVER LIMBS, CO-DOMINANT LEADERS, AND BROKEN OR DEAD BRANCHES. SOME INTERIOR TWIGS AND LATERAL BRANCHES MAY BE PRUNED; HOWEVER, DO NOT REMOVE THE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN.
2. STAKE TREES INDICATED ON PLANS.
3. WRAP TREE TRUNKS ONLY UPON THE APPROVAL OF THE LANDSCAPE ARCHITECT
4. REMOVE ALL TWINE, ROPE, WIRE AND BURLAP FROM TOP AND SIDES OF ROOT BALL.

4 C503 B&B TREE PLANTING DETAILS

NTS



NOTES:

1. SEE PLANTING DETAIL FOR FURTHER INFORMATION ON TREE PLANTING
2. REMOVE STAKES AND SUPPORT MATERIAL ONE (1) YEAR FROM TIME OF INSTALLATION, OR IF IT IS DETERMINED THAT GIRDLING, SCARING, OR EXCESSIVE ABRASION IS OCCURING AT THE SUPPORT POINT ON THE TREE.

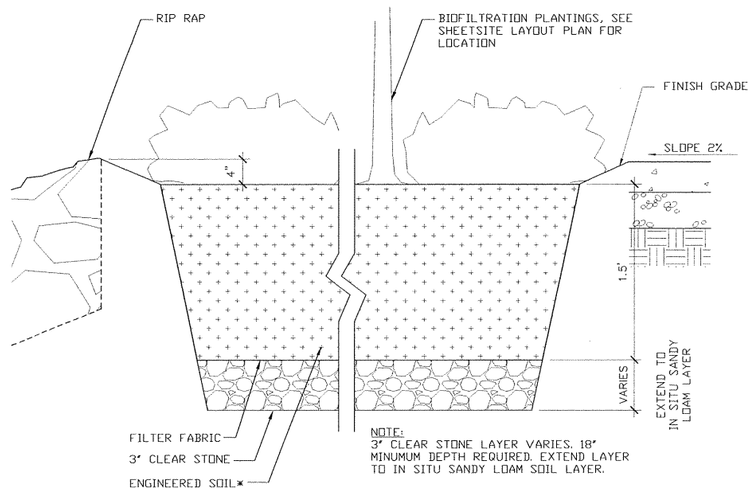
5 C503 TREE STAKING DETAIL (ONLY INSTALLED IF VEGETATION IS INSTALLED)

NTS

* ENGINEERED SOIL SPECIFICATION

THE ENGINEERED SOIL MIX SHALL BE:
40% SILICA SAND (by volume)
30% TOPSOIL (by volume)
30% COMPOST (by volume)
*mix meets requirements of s. NR 151.12(5)(c)5.i

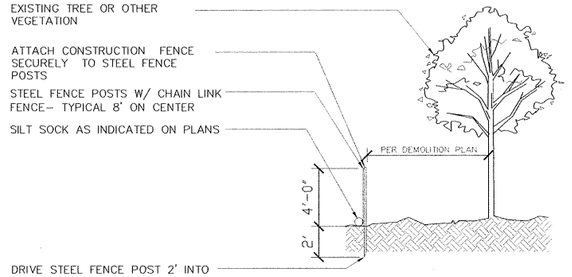
THE SOIL MIXTURE SHALL BE UNIFORM, FREE OF STONES, STUMPS, ROOTS, OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. ON-SITE SOIL MIXING OR PLACEMENT NOT ALLOWED IF SOIL IS SATURATED TO WATER WITHIN 48 HOURS. THE SOIL SHALL BE COVERED AND STORED TO PREVENT WETTING OR SATURATION. PLACEMENT SHALL BE IN 6 INCH LIFTS.



NOTE:
3" CLEAR STONE LAYER VARIES. 18" MINUMUM DEPTH REQUIRED. EXTEND LAYER TO IN SITU SANDY LOAM SOIL LAYER.

6 C503 BIOSWALE

NTS



NOTES:

1. PLACE FENCE POSTS 8' ON CENTER & ATTACH CONSTRUCTION FENCE SECURELY
2. NO ENTRY, NO STORAGE & NO TRENCHING IN TREE PROTECTION ZONE DURING ENTIRE SITE CONSTRUCTION

7 C503 TREE PROTECTION

NTS

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101 E. Badger Road
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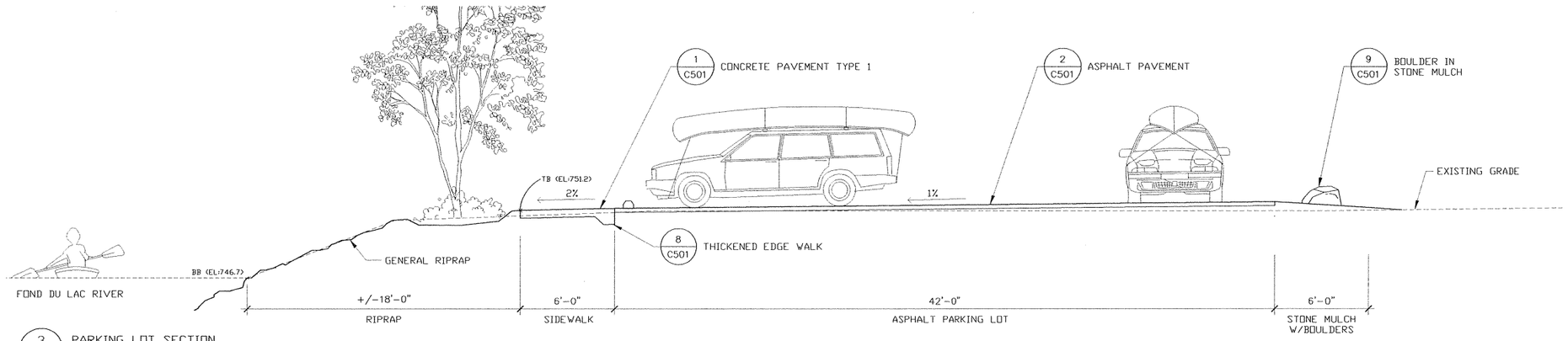
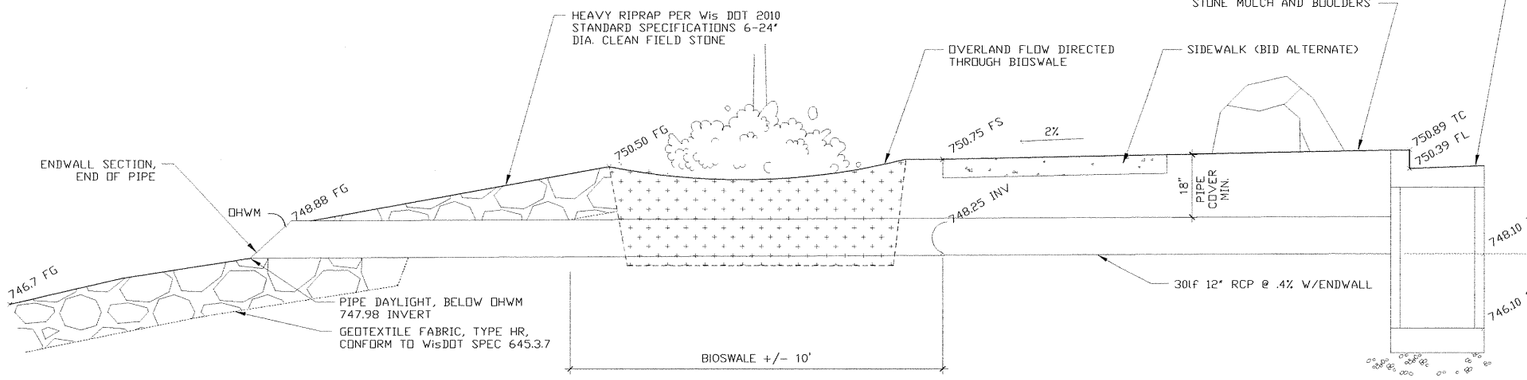


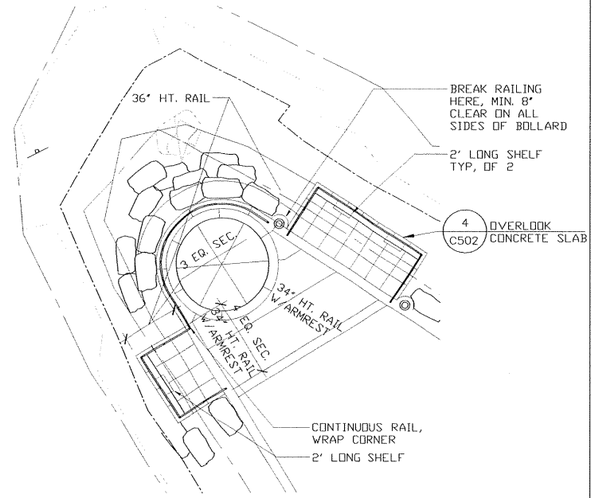
3 C504 PARKING LOT SECTION
SECTION

SCALE 1/4" = 1'-0"



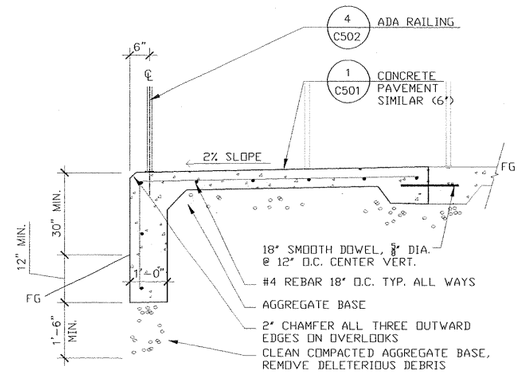
2 C504 CURB INLET AND DAYLIGHT
SECTION

SCALE 1/2" = 1'-0"



3 C504 OVERLOOK ENLARGEMENT
RAILING TYPES

SCALE 1" = 10'-0"



4 C504 OVERLOOK CONCRETE SLAB

SCALE 1/2" = 1'-0"

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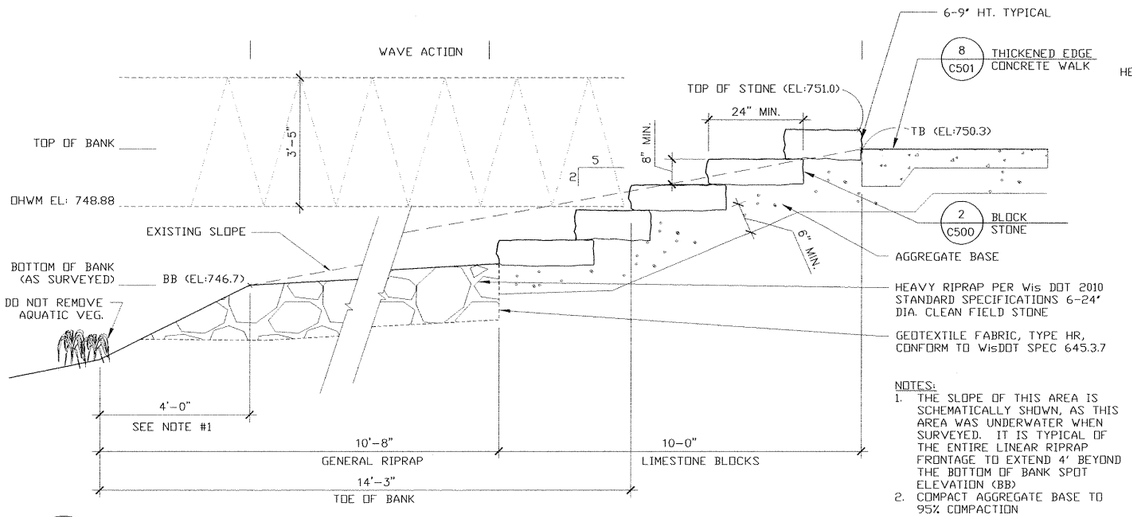
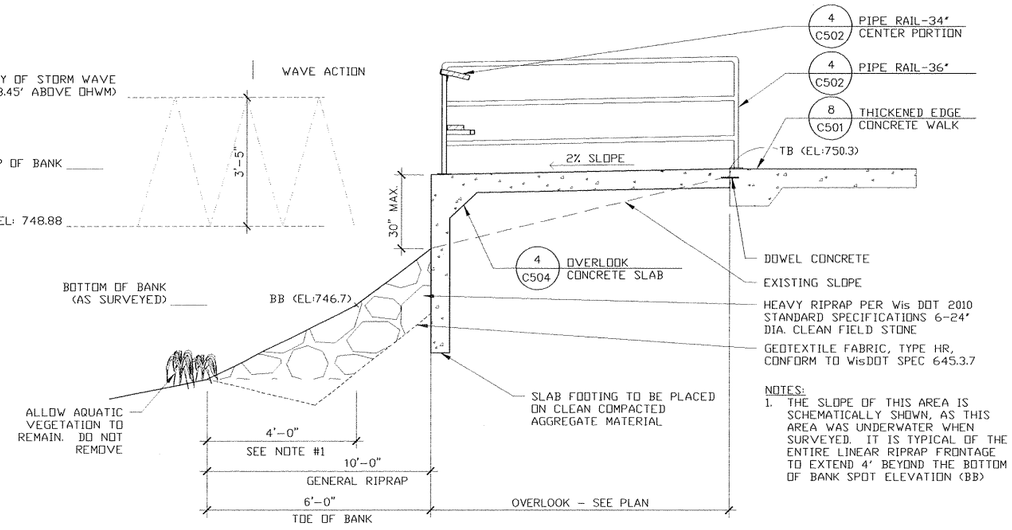


NOTES:
1. THE SLOPE OF THIS AREA IS SCHEMATICALLY SHOWN, AS THIS AREA WAS UNDERWATER WHEN SURVEYED. IT IS TYPICAL OF THE ENTIRE LINEAR RIPRAP FRONTAGE TO EXTEND 4' BEYOND THE BOTTOM OF BANK SPOT ELEVATION (BB)
2. COMPACT AGGREGATE BASE TO 95% COMPACTION

1 / C505 BLOCK STONE & GENERAL RIPRAP SECTION

SCALE 1/2" = 1'-0"



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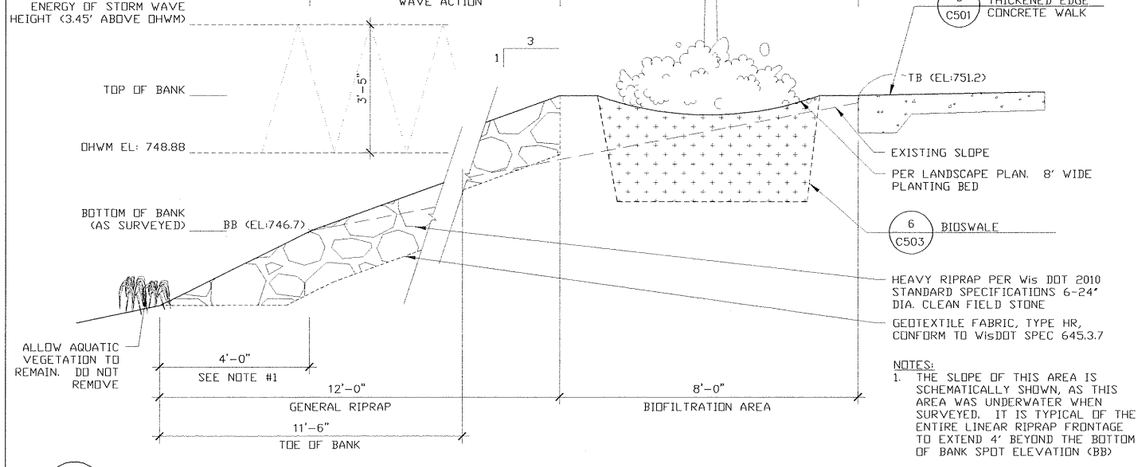
3 / C505 GENERAL RIPRAP AT OVERLOOK SECTION

SCALE 1/2" = 1'-0"



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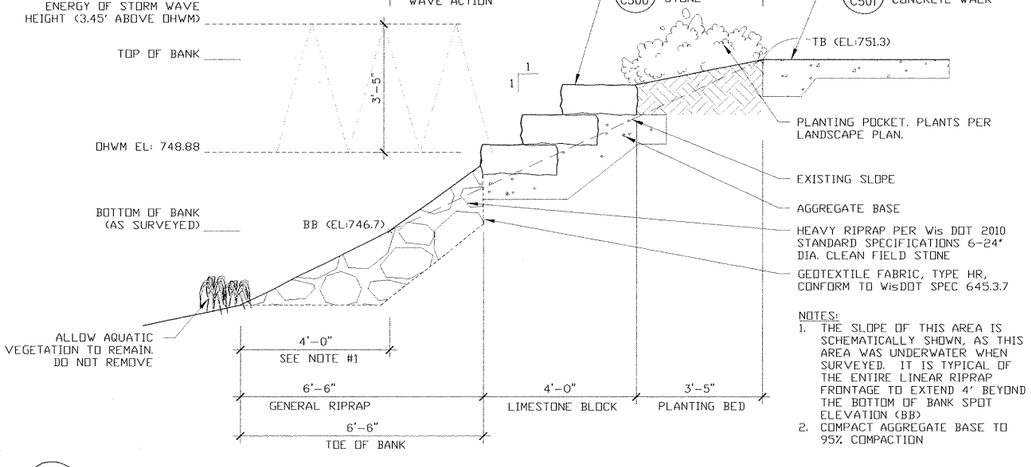
2 / C505 GENERAL RIPRAP (TYPICAL CONDITION) SECTION

SCALE 1/2" = 1'-0"



NOTES:
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2. COMPACT AGGREGATE BASE TO 95% COMPACTION

4 / C505 RIPRAP PLANTING POCKET SECTION

SCALE 1/2" = 1'-0"

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SECTION 033053 - MISCELLANEOUS CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

1.2 SUMMARY

A. This Section specifies cast-in-place concrete, including reinforcement, concrete materials, mixture design, placement procedures, and finishes, for the following:
   1. Light Bases foundations

B. Related Sections include the following:
   1. Division 31 Section "Earth Moving" for drainage fill under slabs-on-grade.
   2. Division 31 Section "Concrete Paving" for concrete pavement and walks.

1.3 SUBMITTALS

A. General: In addition to the following, comply with submittal requirements in ACI 301.

B. Product Data: For each type of product indicated.

C. Design Mixtures: For each concrete mixture.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.

B. Source Limitations: Obtain each type of cement of the same brand from the same manufacturer's plant, obtain aggregate from one source, and obtain admixtures through one source from a single manufacturer.

C. Comply with ACI 301, "Specification for Structural Concrete," including the following sections, unless modified by requirements in the Contract Documents:

   1. "General Requirements."
   2. "Formwork and Formwork Accessories."
   3. "Reinforcement and Reinforcement Supports."
   4. "Concrete Mixtures."
   5. "Handling, Placing, and Constructing."

D. Comply with ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

PART 2 - PRODUCTS

2.1 FORMWORK

A. Furnish formwork and formwork accessories according to ACI 301.

2.2 STEEL REINFORCEMENT

A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed.

B. Plain-Steel Wire: ASTM A 82, as drawn.

C. Plain-Steel Welded Wire Reinforcement: ASTM A 185, fabricated from as-drawn steel wire into flat sheets.

D. Deformed-Steel Welded Wire Reinforcement: ASTM A 497, flat sheet.

2.3 CONCRETE MATERIALS

A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source throughout Project:

1. Portland Cement: ASTM C 150, Type [**I**]

    a. Fly Ash: ASTM C 618, Class [**C**].
    b. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.

B. Normal-Weight Aggregate: ASTM C 33, graded, [**1-1/2-inch (38-mm)**] nominal maximum aggregate size.

C. Water: ASTM C 94/C 94M[**; potable**].

2.4 ADMIXTURES

A. Air-Entraining Admixture: ASTM C 260.

B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.

1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
2. Retarding Admixture: ASTM C 494/C 494M, Type B.
3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.

4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

2.5 RELATED MATERIALS

A. Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber, or ASTM D 1752, cork or self-expanding cork.

2.6 CURING MATERIALS

A. Evaporation Retarder: Waterborne, monomolecular film forming; manufactured for application to fresh concrete.

B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. (305 g/sq. m) when dry.

C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.

D. Water: Potable.

E. Clear, Waterborne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A.

2.7 CONCRETE MIXTURES

A. Comply with ACI 301 requirements for concrete mixtures.

B. Normal-Weight Concrete: Prepare design mixes, proportioned according to ACI 301, as follows:

1. Minimum Compressive Strength:
   a. Walls and Columns: **4000 psi** at 28 days.
   b. Other: 3000 psi at 28 days
2. Maximum Water-Cementitious Materials Ratio: [**0.45**].
3. Slump Limit: [**4 inches**], plus or minus 1 inch.
4. Air Content: Maintain within range permitted by ACI 301. Do not allow air content of floor slabs to receive troweled finishes to exceed 3 percent.

2.8 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M[**and ASTM C 1116**], and furnish batch ticket information.

1. When air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 FORMWORK

A. Design, construct, erect, brace, and maintain formwork according to ACI 301.

3.2 STEEL REINFORCEMENT

A. Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.

3.3 JOINTS

A. Isolation Joints: Install joint-filler strips at junctions with slabs-on-grade and vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.

1. Extend joint fillers full width and depth of joint, terminating flush with finished concrete surface, unless otherwise indicated.

3.4 CONCRETE PLACEMENT

A. Comply with ACI 301 for measuring, batching, mixing, transporting, and placing concrete.

B. Do not add water to concrete during delivery, at Project site, or during placement.

C. Consolidate concrete with mechanical vibrating equipment.

3.5 FINISHING FORMED SURFACES

A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defective areas repaired and patched. Remove fins and other projections exceeding 1/2 inch.

1. Apply to concrete surfaces [**not exposed to public view**].

B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defective areas. Remove fins and other projections exceeding 1/8 inch.

C. Rubbed Finish: Apply the following rubbed finish, defined in ACI 301, to smooth-formed finished as-cast concrete where indicated:

1. Smooth-rubbed finish.

D. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent

formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

3.6 FINISHING UNFORMED SURFACES

A. General: Comply with ACI 302.1R for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.

B. Screed surfaces with a straightedge and strike off. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane before excess moisture or bleedwater appears on surface.

1. Do not further disturb surfaces before starting finishing operations.

C. Float Finish: Apply float finish to surfaces indicated, to surfaces to receive trowel finish, and to floor and slab surfaces to be covered with fluid-applied or sheet waterproofing, fluid-applied or direct-to-deck-applied membrane roofing, or sand-bed terrazzo.

D. Nonslip Broom Finish: Apply a nonslip broom finish to surfaces indicated and to exterior concrete platforms, steps, and ramps. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route.

3.7 CONCRETE PROTECTING AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and with ACI 301 for hot-weather protection during curing.

B. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.

C. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.

D. Curing Methods: Cure formed and unformed concrete for at least seven days by one or a combination of the following methods:

1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:

a. Water.
b. Continuous water-fog spray.
c. Absorptive cover, water saturated and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.

2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than

seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

3. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

3.8 FIELD QUALITY CONTROL

A. Testing Agency: [**Owner will engage**] [**Engage**] a qualified independent testing and inspecting agency to sample materials, perform tests, and submit test reports during concrete placement according to requirements specified in this Article.

B. Tests: Perform according to ACI 301.

1. Testing Frequency: One composite sample shall be obtained for each 100 cu. yd. or fraction thereof of each concrete mix placed each day.

3.9 REPAIRS

A. Remove and replace concrete that does not comply with requirements in this Section.

END OF SECTION 033053

SECTION 311000 - SITE CLEARING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Protecting existing vegetation to remain.
2. Removing existing vegetation.
3. Clearing and grubbing.
4. Stripping and stockpiling topsoil.
5. Removing above- and below-grade site improvements.
6. Disconnecting, capping or sealing, and [**abandoning site utilities in place**].

B. Related Sections:

1.3 DEFINITIONS

A. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.

B. Surface Soil: Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil; but in disturbed areas such as urban environments, the surface soil can be subsoil.

C. Topsoil: Top layer of the soil profile consisting of existing native surface topsoil or existing in-place surface soil and is the zone where plant roots grow.

D. Plant-Protection Zone: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction, and indicated on Drawings.

E. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

1.4 MATERIAL OWNERSHIP

A. Except for stripped topsoil and other materials indicated to be stockpiled or otherwise remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site.

1.5 SUBMITTALS

A. Existing Conditions: Documentation of existing trees and plantings, adjoining construction, and site improvements that establishes preconstruction conditions that might be misconstrued as damage caused by site clearing.

1. Use sufficiently detailed photographs or videotape.
2. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plants designated to remain.

1.6 PROJECT CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.

B. Salvable Improvements: Carefully remove items indicated to be salvaged and store on Owner's premises[**where indicated**] by Engineer.

C. Utility Locator Service: Notify [**utility locator service**] for area where Project is located before site clearing.

D. Do not commence site clearing operations until temporary erosion- and sedimentation-control[**and plant-protection**] measures are in place.

E. The following practices are prohibited within protection zones:

1. Storage of construction materials, debris, or excavated material.
2. Parking vehicles or equipment.
3. Foot traffic.
4. Erection of sheds or structures.
5. Impoundment of water.
6. Excavation or other digging unless otherwise indicated.
7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.

F. Do not direct vehicle or equipment exhaust towards protection zones.

G. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones.

H. Soil Stripping, Handling, and Stockpiling: Perform only when the topsoil is dry or slightly moist.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Satisfactory Soil Material: Requirements for satisfactory soil material are specified in Division 31 Section "Earth Moving."

1. Obtain approved borrow soil material off-site when satisfactory soil material is not available on-site.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect and maintain benchmarks and survey control points from disturbance during construction.

B. Locate and clearly identify trees, shrubs, and other vegetation to remain.

C. Protect existing site improvements to remain from damage during construction.

1. Restore damaged improvements to their original condition, as acceptable to Owner.

3.2 TREE AND PLANT PROTECTION

A. Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations, in a manner approved by Engineer.

3.3 EXISTING UTILITIES

A. Locate, identify, disconnect, and seal or cap utilities indicated to be removed[**or abandoned in place**].

1. Arrange with utility companies to shut off indicated utilities.

B. Locate, identify, and disconnect utilities indicated to be abandoned in place.

C. Interrupting Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:

1. Notify Engineer not less than [**two**] days in advance of proposed utility interruptions.
2. Do not proceed with utility interruptions without Engineer's written permission.

D. Excavate for and remove underground utilities indicated to be removed.

3.4 CLEARING AND GRUBBING

A. Remove obstructions, trees, shrubs, and other vegetation to permit installation of new construction.

1. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.
2. Grind down stumps and remove roots, obstructions, and debris to a depth of [**18 inches**] below exposed subgrade.
3. Use only hand methods for grubbing within protection zones.
4. Chip removed tree branches and [**dispose of off-site**].

B. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.

1. Place fill material in horizontal layers not exceeding a loose depth of 8 inches, and compact each layer to a density equal to adjacent original ground.

3.5 TOPSOIL STRIPPING

A. Remove sod and grass before stripping topsoil.

B. Strip topsoil[**to depth of 6 inches**] in a manner to prevent intermingling with underlying subsoil or other waste materials.

1. Remove subsoil and nonsoil materials from topsoil, including clay lumps, gravel, and other objects more than 2 inches in diameter; trash, debris, weeds, roots, and other waste materials.

C. Stockpile topsoil away from edge of excavations without intermixing with subsoil. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust and erosion by water.

1. Limit height of topsoil stockpiles to 72 inches.
2. Do not stockpile topsoil within protection zones.
3. Dispose of surplus topsoil. Surplus topsoil is that which exceeds quantity indicated to be stockpiled or reused.
4. Stockpile surplus topsoil to allow for respreading deeper topsoil.

3.6 SITE IMPROVEMENTS

A. Remove existing above- and below-grade improvements as indicated and necessary to facilitate new construction.

B. Remove slabs, paving, curbs, gutters, and aggregate base as indicated.

1. Unless existing full-depth joints coincide with line of demolition, neatly saw-cut along line of existing pavement to remain before removing adjacent existing pavement. Saw-cut faces vertically.
2. Paint cut ends of steel reinforcement in concrete to remain with two coats of antirust coating, following coating manufacturer's written instructions. Keep paint off surfaces that will remain exposed.

C. Remove foundations and retaining walls to an elevation not less than 2 feet below the proposed finished earth subgrade.

3.7 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.

B. Separate recyclable materials produced during site clearing from other nonrecyclable materials. Store or stockpile without intermixing with other materials and transport them to recycling facilities. Do not interfere with other Project work.

END OF SECTION 311000

SECTION 312000 - EARTH MOVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Preparing subgrades for [**walks**] [**pavements**] [**turf and grasses**] [**and**] [**plants**].
2. Subbase course for concrete [**walks**] [**pavements**].
3. Subbase coursefor asphalt paving.

B. Related Sections:

1. Division 31 Section "Site Clearing" for site stripping, grubbing, stripping[**and stockpiling**] topsoil, and removal of above- and below-grade improvements and utilities.
2. Division 32 Section "Turf and Grasses" for finish grading in turf and grass areas, including preparing and placing planting soil for turf areas.
3. Division 32 Section "Plants" for finish grading in planting areas and tree and shrub pit excavation and planting.

1.3 DEFINITIONS

A. Backfill: Soil material or controlled low-strength material used to fill an excavation.

1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
2. Final Backfill: Backfill placed over initial backfill to fill a trench.

B. Base Course: Aggregate layer placed between the subbase course and hot-mix asphalt paving.

C. Bedding Course: Aggregate layer placed over the excavated subgrade in a trench before laying pipe.

D. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.

E. Drainage Course: Aggregate layer supporting the slab-on-grade that also minimizes upward capillary flow of pore water.

F. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.

1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Architect. Authorized additional excavation and replacement material will be paid for according to Contract provisions for [**changes in the Work**].
2. Bulk Excavation: Excavation more than [**10 feet**] in width and more than [**30 feet**] in length.
3. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Architect. Unauthorized excavation, as well as remedial work directed by Architect, shall be without additional compensation.

G. Fill: Soil materials used to raise existing grades.

H. Rock: Rock material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of rock material [**3/4 cu. yd.**] or more in volume that exceed a standard penetration resistance of [**100 blows/2 inches**] when tested by a geotechnical testing agency, according to ASTM D 1586.

I. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.

J. Subbase Course: Aggregate layer placed between the subgrade and base course for hot-mix asphalt pavement, or aggregate layer placed between the subgrade and a cement concrete pavement or a cement concrete or hot-mix asphalt walk.

K. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, drainage course, or topsoil materials.

L. Utilities: On-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.

1.4 SUBMITTALS

A. Qualification Data: For qualified testing agency.

B. Material Test Reports: For each [**borrow**] soil material proposed for fill and backfill as follows:

1. Classification according to ASTM D 2487.
2. Laboratory compaction curve according to [**ASTM D 698**].

C. Preexcavation Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by earth moving operations. Submit before earth moving begins.

1.5 PROJECT CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earth moving operations.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.

B. Improvements on Adjoining Property: Authority for performing earth moving indicated on property adjoining Owner's property will be obtained by Owner before award of Contract.

1. Do not proceed with work on adjoining property until directed by Architect.

C. Utility Locator Service: Notify [**utility locator service**] for area where Project is located before beginning earth moving operations.

D. Do not commence earth moving operations until temporary erosion- and sedimentation-control measures are in place.

E. Do not commence earth moving operations until plant-protection measures are in place.

F. The following practices are prohibited within protection zones:

1. Storage of construction materials, debris, or excavated material.
2. Parking vehicles or equipment.
3. Foot traffic.
4. Erection of sheds or structures.
5. Impoundment of water.
6. Excavation or other digging unless otherwise indicated.
7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.

G. Do not direct vehicle or equipment exhaust towards protection zones.

H. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.

B. Satisfactory Soils: Soil Classification [**Groups GW, GP, GM, SW, SP, and SM according to ASTM D 2487**, or a combination of these groups; free of rock or gravel larger than [**3 inches**] in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.

C. Unsatisfactory Soils: Soil Classification [**Groups GC, SC, CL, ML, OL, CH, MH, OH, and PT according to ASTM D 2487**,or a combination of these groups.

1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.

D. Subbase Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.

E. Base Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 95 percent passing a 1-1/2-inch sieve and not more than 8 percent passing a No. 200 sieve.

F. Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.

G. Bedding Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; except with 100 percent passing a 1-inch sieve and not more than 8 percent passing a No. 200 sieve.

H. Drainage Course: Narrowly graded mixture of [**washed**]crushed stone, or crushed or uncrushed gravel; ASTM D 448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2-inch sieve and 0 to 5 percent passing a No. 8 sieve.

I. Filter Material: Narrowly graded mixture of natural or crushed gravel, or crushed stone and natural sand; ASTM D 448; coarse-aggregate grading Size 67; with 100 percent passing a 1-inch sieve and 0 to 5 percent passing a No. 4 sieve.

J. Sand: ASTM C 33; fine aggregate.

K. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.

2.2 ACCESSORIES

A. Warning Tape: Acid- and alkali-resistant, polyethylene film warning tape manufactured for marking and identifying underground utilities, 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility; colored as follows:

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth moving operations.

B. Protect and maintain erosion and sedimentation controls during earth moving operations.

C. Protect subgrades and foundation soils from freezing temperatures and frost. Remove temporary protection before placing subsequent materials.

3.2 DEWATERING

A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.

B. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.

1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.

3.3 EXCAVATION, GENERAL

A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions.

1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.
2. Remove rock to lines and grades indicated to permit installation of permanent construction without exceeding the following dimensions:

a. [**24 inches**] outside of concrete forms other than at footings.
b. [**12 inches**] outside of concrete forms at footings.
c. [**6 inches**] outside of minimum required dimensions of concrete cast against grade.
d. Outside dimensions of concrete walls indicated to be cast against rock without forms or exterior waterproofing treatments.
e. [**6 inches**] beneath bottom of concrete slabs-on-grade.
f. [**6 inches**] beneath pipe in trenches, and the greater of [**24 inches**] wider than pipe or [**42 inches**] wide.

3.4 EXCAVATION FOR WALKS AND PAVEMENTS

A. Excavate surfaces under walks and pavements to indicated lines, cross sections, elevations, and subgrades.

3.5 SUBGRADE INSPECTION

A. Notify Engineer when excavations have reached required subgrade.

B. If Engineer determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.

C. Proof-roll subgrade [**below the building slabs and pavements**] with a pneumatic-tired [**and loaded 10-wheel, tandem-axle dump truck weighing not less than 15 tons**] to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.

1. Completely proof-roll subgrade in one direction[, **repeating proof-rolling in direction perpendicular to first direction**]. Limit vehicle speed to 3 mph.
2. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Architect, and replace with compacted backfill or fill as directed.

D. Authorized additional excavation and replacement material will be paid for according to Contract provisions for [**changes in the Work**].

E. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Architect, without additional compensation.

3.6 UNAUTHORIZED EXCAVATION

A. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill, with 28-day compressive strength of 2500 psi, may be used when approved by Architect.

1. Fill unauthorized excavations under other construction, pipe, or conduit as directed by Architect.

3.7 STORAGE OF SOIL MATERIALS

A. 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.

1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

3.8 BACKFILL

A. Place and compact backfill in excavations promptly, but not before completing the following:

1. Construction below finish grade including, where applicable, subdrainage, dampproofing, waterproofing, and perimeter insulation.
2. Removing concrete formwork.
3. Removing trash and debris.
4. Removing temporary shoring and bracing, and sheeting.

B. Place backfill on subgrades free of mud, frost, snow, or ice.

3.9 SOIL FILL

A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.

B. Place and compact fill material in layers to required elevations as follows:

1. Under grass and planted areas, use satisfactory soil material.
2. Under walks and pavements, use satisfactory soil material.
3. Under steps and ramps, use engineered fill.
4. Under footings and foundations, use engineered fill.

C. Place soil fill on subgrades free of mud, frost, snow, or ice.

3.10 SOIL MOISTURE CONTROL

A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.

1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.
2. Remove and replace, or scarify and air dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

3.11 COMPACTION OF SOIL BACKFILLS AND FILLS

A. Place backfill and fill soil materials in layers not more than [**8 inches**] in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.

B. Place backfill and fill soil materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.

C. Compact soil materials to not less than the following percentages of maximum dry unit weight according to [**ASTM D 69**]:
1. Under walkways, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at [**92**] percent.
2. Under turf or unpaved areas, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at [**85**] percent.

3.12 GRADING

A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.

1. Provide a smooth transition between adjacent existing grades and new grades.
2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.

B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:

1. Turf or Unpaved Areas: Plus or minus [**1 inch**]
2. Walks: Plus or minus [**1 inch**]
3. Pavements: Plus or minus [**1/2 inch**]

3.13 SUBBASE AND BASE COURSES UNDER PAVEMENTS AND WALKS

A. Place subbase course on subgrades free of mud, frost, snow, or ice.

B. On prepared subgrade, place subbase course under pavements and walks as follows:
   1. Shape subbase course to required crown elevations and cross-slope grades.
   2. Place subbase course 6 inches or less in compacted thickness in a single layer.
   3. Place subbase course that exceeds 6 inches in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches thick or less than 3 inches thick.
   4. Compact subbase course at optimum moisture content to required grades, lines, cross sections, and thickness to not less than **[95]** percent of maximum dry unit weight according to **[ASTM D 698]**.

C. Pavement Shoulders: Place shoulders along edges of subbase course[**and base course**] to prevent lateral movement. Construct shoulders, at least 12 inches wide, of satisfactory soil materials and compact simultaneously with each subbase layer to not less than **[95]** percent of maximum dry unit weight according to **[ASTM D 698]**.

3.14 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified geotechnical engineering testing agency to perform tests and inspections.

B. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.

C. Testing agency will test compaction of soils in place according to ASTM D 1556, ASTM D 2167, ASTM D 2922, and ASTM D 2937, as applicable. Tests will be performed at the following locations and frequencies:

   1. Paved and Building Slab Areas: At subgrade and at each compacted fill and backfill layer, at least one test for every **[2000 sq. ft.]** or less of paved area or building slab, but in no case fewer than three tests.

D. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; recompact and retest until specified compaction is obtained.

3.15 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.

1. Scarify or remove and replace soil material to depth as directed by Architect; reshape and recompact.

C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.

1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.16 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Remove surplus satisfactory soil and waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.

END OF SECTION 312000

SECTION 321216 - ASPHALT PAVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Hot-mix asphalt paving.
   2. Pavement-marking paint.
   3. Wheel stops

B. Related Sections:
   1. Division 31 Section "Earth Moving" for aggregate subbase and base courses and for aggregate pavement shoulders.

1.3 DEFINITION

A. Hot-Mix Asphalt Paving Terminology: Refer to ASTM D 8 for definitions of terms.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated. Include technical data and tested physical and performance properties.

   1. Job-Mix Designs: Certification, by authorities having jurisdiction, of approval of each job mix proposed for the Work.

B. Qualification Data: For qualified [**manufacturer**] [**and**] [**Installer**].

C. Material Test Reports: For each paving material.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: **[A paving-mix manufacturer registered with and approved by authorities having jurisdiction or the DOT of state of Wisconsin]**

B. Testing Agency Qualifications: Qualified according to ASTM D 3666 for testing indicated.

C. Regulatory Requirements: Comply with materials, workmanship, and other applicable requirements of City of Fond du Lac for asphalt paving work.

1. Measurement and payment provisions and safety program submittals included in standard specifications do not apply to this Section.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver pavement-marking materials to Project site in original packages with seals unbroken and bearing manufacturer's labels containing brand name and type of material, date of manufacture, and directions for storage.

B. Store pavement-marking materials in a clean, dry, protected location within temperature range required by manufacturer. Protect stored materials from direct sunlight.

1.7 PROJECT CONDITIONS

A. Environmental Limitations: Do not apply asphalt materials if subgrade is wet or excessively damp, if rain is imminent or expected before time required for adequate cure, or if the following conditions are not met:

1. Prime Coat: Minimum surface temperature of 60 deg F.
2. Tack Coat: Minimum surface temperature of 60 deg F.
3. Slurry Coat: Comply with weather limitations in ASTM D 3910.
4. Asphalt Base Course: Minimum surface temperature of 40 deg F and rising at time of placement.
5. Asphalt Surface Course: Minimum surface temperature of 60 deg F at time of placement.

B. Pavement-Marking Paint: Proceed with pavement marking only on clean, dry surfaces and at a minimum ambient or surface temperature of [**40 deg F for oil-based materials**] [**55 deg F for water-based materials**], and not exceeding 95 deg F.

PART 2 - PRODUCTS

2.1 AGGREGATES

A. General: Use materials and gradations that have performed satisfactorily in previous installations.

B. Coarse Aggregate: ASTM D 692, sound; angular crushed stone, crushed gravel, or cured, crushed blast-furnace slag.

C. Fine Aggregate: [**ASTM D 1073**] [**or**] [**AASHTO M 29**], sharp-edged natural sand or sand prepared from stone, gravel, cured blast-furnace slag, or combinations thereof.

1. For hot-mix asphalt, limit natural sand to a maximum of 20 percent by weight of the total aggregate mass.

2.2 ASPHALT MATERIALS

A. Asphalt Material: **PG 64-22**

B. Tack Coat: Type MS-2, SS-1h, CSS-1, or CSS-1h

C. Water: Potable.

2.3 AUXILIARY MATERIALS

A. Pavement-Marking Epoxy
1. Color: **[White].**

2.4 MIXES

A. Hot-Mix Asphalt: Dense, hot-laid, hot-mix asphalt plant mixes approved by authorities having jurisdiction and complying with the following requirements:

1. Provide mixes with a history of satisfactory performance in geographical area where Project is located.

2. WISDOT: Type E-3.0 hot mix asphalt.
3. Provide mixes complying with composition, grading, and tolerance requirements in ASTM D 3515 for the following nominal, maximum aggregate sizes:

a. Base Course: [**1 inch**]
b. Surface Course: [**1/2 inch**]

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that subgrade is dry and in suitable condition to begin paving.

B. Proof-roll subgrade below pavements with heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.

1. Completely proof-roll subgrade in one direction[**, repeating proof-rolling in direction perpendicular to first direction**]. Limit vehicle speed to 3 mph.
2. Proof roll with a loaded 10-wheel, tandem-axle dump truck weighing not less than 15 tons.
3. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Architect, and replace with compacted backfill or fill as directed.

C. Proceed with paving only after unsatisfactory conditions have been corrected.

3.2 SURFACE PREPARATION

A. General: Immediately before placing asphalt materials, remove loose and deleterious material from substrate surfaces. Ensure that prepared subgrade is ready to receive paving.

B. Prime Coat: Apply uniformly over surface of compacted unbound-aggregate base course at a rate of 0.15 to 0.50 gal./sq. yd.. Apply enough material to penetrate and seal but not flood surface. Allow prime coat to cure.

1. If prime coat is not entirely absorbed within 24 hours after application, spread sand over surface to blot excess asphalt. Use enough sand to prevent pickup under traffic. Remove loose sand by sweeping before pavement is placed and after volatiles have evaporated.
2. Protect primed substrate from damage until ready to receive paving.

3.3 HOT-MIX ASPHALT PLACING

A. Machine place hot-mix asphalt on prepared surface, spread uniformly, and strike off. Place asphalt mix by hand to areas inaccessible to equipment in a manner that prevents segregation of mix. Place each course to required grade, cross section, and thickness when compacted.

1. Place hot-mix asphalt base course in number of lifts and thicknesses indicated.
2. Place hot-mix asphalt surface course in single lift.
3. Spread mix at minimum temperature of 250 deg F.
4. Begin applying mix along centerline of crown for crowned sections and on high side of one-way slopes unless otherwise indicated.
5. Regulate paver machine speed to obtain smooth, continuous surface free of pulls and tears in asphalt-paving mat.

B. Place paving in consecutive strips not less than 10 feet wide unless infill edge strips of a lesser width are required.

1. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips. Complete a section of asphalt base course before placing asphalt surface course.

C. Promptly correct surface irregularities in paving course behind paver. Use suitable hand tools to remove excess material forming high spots. Fill depressions with hot-mix asphalt to prevent segregation of mix; use suitable hand tools to smooth surface.

3.4 JOINTS

A. Construct joints to ensure a continuous bond between adjoining paving sections. Construct joints free of depressions, with same texture and smoothness as other sections of hot-mix asphalt course.

1. Clean contact surfaces and apply tack coat to joints.
2. Offset longitudinal joints, in successive courses, a minimum of 6 inches.
3. Offset transverse joints, in successive courses, a minimum of 24 inches.

4. Construct transverse joints at each point where paver ends a day's work and resumes work at a subsequent time. Construct these joints [**using either "bulkhead" or "papered" method according to AI MS-22, for both "Ending a Lane" and "Resumption of Paving Operations."**]
5. Compact joints as soon as hot-mix asphalt will bear roller weight without excessive displacement.
6. Compact asphalt at joints to a density within 2 percent of specified course density.

3.5 COMPACTION

A. General: Begin compaction as soon as placed hot-mix paving will bear roller weight without excessive displacement. Compact hot-mix paving with hot, hand tampers or with vibratory-plate compactors in areas inaccessible to rollers.

1. Complete compaction before mix temperature cools to 185 deg F.

B. Breakdown Rolling: Complete breakdown or initial rolling immediately after rolling joints and outside edge. Examine surface immediately after breakdown rolling for indicated crown, grade, and smoothness. Correct laydown and rolling operations to comply with requirements.

C. Intermediate Rolling: Begin intermediate rolling immediately after breakdown rolling while hot-mix asphalt is still hot enough to achieve specified density. Continue rolling until hot-mix asphalt course has been uniformly compacted to the following density:

1. Average Density: 96 percent of reference laboratory density according to [**ASTM D 6927**] [**or**] [**AASHTO T 245**], but not less than 94 percent nor greater than 100 percent.

D. Finish Rolling: Finish roll paved surfaces to remove roller marks while hot-mix asphalt is still warm.

E. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while asphalt is still hot; compact thoroughly.

F. Repairs: Remove paved areas that are defective or contaminated with foreign materials and replace with fresh, hot-mix asphalt. Compact by rolling to specified density and surface smoothness.

G. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.

H. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

3.6 INSTALLATION TOLERANCES

A. Pavement Thickness: Compact each course to produce the thickness indicated within the following tolerances:
1. Surface Course: Plus 1/4 inch, no minus.

B. Pavement Surface Smoothness: Compact each course to produce a surface smoothness within the following tolerances as determined by using a 10-foot straightedge applied transversely or longitudinally to paved areas:
   1. Surface Course: [**1/8 inch**]

C. Traffic-Calming Devices: Compact and form asphalt to produce the contour indicated and within a tolerance of plus or minus 1/8 inch of height indicated above pavement surface.

3.7 FIELD QUALITY CONTROL

A. Testing Agency: [**Engage**] a qualified testing agency to perform tests and inspections.

B. Thickness: In-place compacted thickness of hot-mix asphalt courses will be determined according to ASTM D 3549.

C. Surface Smoothness: Finished surface of each hot-mix asphalt course will be tested for compliance with smoothness tolerances.

D. In-Place Density: Testing agency will take samples of uncompacted paving mixtures and compacted pavement according to [**ASTM D 979**] [**or**] [**AASHTO T 168**].

   1. Reference maximum theoretical density will be determined by averaging results from four samples of hot-mix asphalt-paving mixture delivered daily to site, prepared according to ASTM D 2041, and compacted according to job-mix specifications.
   2. In-place density of compacted pavement will be determined by testing core samples according to ASTM D 1188 or ASTM D 2726.

      a. One core sample will be taken for every 1000 sq. yd. or less of installed pavement, with no fewer than 3 cores taken.
      b. Field density of in-place compacted pavement may also be determined by nuclear method according to ASTM D 2950 and correlated with ASTM D 1188 or ASTM D 2726.

E. Replace and compact hot-mix asphalt where core tests were taken.

F. Remove and replace or install additional hot-mix asphalt where test results or measurements indicate that it does not comply with specified requirements.

3.8 DISPOSAL

A. Except for material indicated to be recycled, remove excavated materials from Project site and legally dispose of them in an EPA-approved landfill.

   1. Do not allow milled materials to accumulate on-site.

END OF SECTION 321216

SECTION 321313 - CONCRETE PAVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

1.2 SUMMARY

A. This Section includes exterior cement concrete pavement for the following:

1. Thickened Edge Concrete
2. Walkways
3. Accessible Curb Ramps

B. Related Sections include the following:

1. Division 31 Section "Earth Moving" for subgrade preparation, grading, and subbase course.

1.3 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, fly ash and other pozzolans, and ground granulated blast-furnace slag.

1.4 SUBMITTALS

A. Product Data: For each type of manufactured material and product indicated.

B. Design Mixtures: For each concrete pavement mixture. Include alternate mixture designs when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

C. Qualification Data: For [**manufacturer**] [**testing agency**].

D. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated, based on comprehensive testing of current materials:

E. Material Certificates: Signed by manufacturers certifying that each of the following materials complies with requirements:

1. Cementitious materials.

2. Steel reinforcement and reinforcement accessories.
3. Fiber reinforcement.
4. Admixtures.
5. Curing compounds.
6. Applied finish materials.
7. Bonding agent or epoxy adhesive.
8. Joint fillers.

F. Field quality-control test reports.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: Manufacturer of ready-mixed concrete products who complies with ASTM C 94/C 94M requirements for production facilities and equipment.

B. Testing Agency Qualifications: An independent agency qualified according to ASTM C 1077 and ASTM E 329 for testing indicated, as documented according to ASTM E 548.

C. ACI Publications: Comply with ACI 301, "Specification for Structural Concrete," unless modified by requirements in the Contract Documents.

D. Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.

1.6 PROJECT CONDITIONS

A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities.

PART 2 - PRODUCTS

2.1 FORMS

A. Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, smooth exposed surfaces.

1. Use flexible or curved forms for curves with a radius 100 feet (30.5 m) or less.

B. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

2.2 STEEL REINFORCEMENT

A. Plain-Steel Welded Wire Reinforcement: ASTM A 185, fabricated from as-drawn steel wire into flat sheets.

B. Deformed-Steel Welded Wire Reinforcement: ASTM A 497, flat sheet.

C. Epoxy-Coated Welded Wire Fabric: ASTM A 884/A 884M, Class A, plain steel.

D. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (Grade 420); deformed.

E. Galvanized Reinforcing Bars: ASTM A 767/A 767M, Class II zinc coated, hot-dip galvanized after fabrication and bending; with ASTM A 615/A 615M, Grade 60 (Grade 420) deformed bars.

F. Epoxy-Coated Reinforcing Bars: ASTM A 775/A 775M or ASTM A 934/A 934M; with ASTM A 615/A 615M, Grade 60 (Grade 420) deformed bars.

G. Steel Bar Mats: ASTM A 184/A 184M; with ASTM A 615/A 615M, Grade 60 (Grade 420), deformed bars; assembled with clips.

H. Plain Steel Wire: ASTM A 82, [**galvanized**].

I. Deformed-Steel Wire: ASTM A 496.

J. Epoxy-Coated-Steel Wire: ASTM A 884/A 884M, Class A coated, [**plain**] [**deformed**].

K. Epoxy-Coated Joint Dowel Bars: ASTM A 775/A 775M; with ASTM A 615/A 615M, Grade 60 (Grade 420), plain steel bars.

L. Tie Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed.

M. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, welded wire reinforcement, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete of greater compressive strength than concrete, and as follows:

1. Equip wire bar supports with sand plates or horizontal runners where base material will not support chair legs.
2. For epoxy-coated reinforcement, use epoxy-coated or other dielectric-polymer-coated wire bar supports.

N. Epoxy Repair Coating: Liquid two-part epoxy repair coating, compatible with epoxy coating on reinforcement.

O. Zinc Repair Material: ASTM A 780.

2.3 CONCRETE MATERIALS

A. Cementitious Material: Use[**one of**] the following cementitious materials, of the same type, brand, and source throughout the Project:

1. Portland Cement: ASTM C 150, Type **I**. [**Supplement with the following:**]

a. Fly Ash: ASTM C 618, Class [**C**].
b. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.

B. Normal-Weight Aggregates: ASTM C 33, Class [**4S**] coarse aggregate, uniformly graded. Provide aggregates from a single source.

1. Maximum Coarse-Aggregate Size: [**3/4 inch**] nominal.

C. Water: ASTM C 94/C 94M.

D. Air-Entraining Admixture: ASTM C 260.

E. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material.

1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
2. Retarding Admixture: ASTM C 494/C 494M, Type B.
3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

2.4 CURING MATERIALS

A. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. dry.

B. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.

C. Water: Potable.

D. Evaporation Retarder: Waterborne, monomolecular film forming; manufactured for application to fresh concrete.

E. Clear Waterborne Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B.

2.5 RELATED MATERIALS

A. Expansion- and Isolation-Joint-Filler Strips: [**ASTM D 1751, asphalt-saturated cellulosic fiber**].

B. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.

C. Epoxy Bonding Adhesive: ASTM C 881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class suitable for application temperature and of grade to requirements, and as follows:

1. Types [**IV and V, load bearing**], for bonding hardened or freshly mixed concrete to hardened concrete.

2.6 CONCRETE MIXTURES

A. Prepare design mixtures, proportioned according to ACI 301, for each type and strength of normal-weight concrete determined by either laboratory trial mixes or field experience.

1. Use a qualified independent testing agency for preparing and reporting proposed concrete mixture designs for the trial batch method.

B. Proportion mixtures to provide normal-weight concrete with the following properties:

1. Compressive Strength (28 Days): [**3500 psi**].
2. Maximum Water-Cementitious Materials Ratio at Point of Placement: [**0.45**].
3. Slump Limit: [**4 inches**], plus or minus 1 inch.

C. Add air-entraining admixture at manufacturer's prescribed rate to result in normal-weight concrete at point of placement having an air content as follows:
1. Air Content: 6 percent plus or minus 1.5 percent for 3/4-inch nominal maximum aggregate size

2.7 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M[**and ASTM C 1116**]. Furnish batch certificates for each batch discharged and used in the Work.

1. When air temperature is between 85 deg F and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine exposed subgrades and subbase surfaces for compliance with requirements for dimensional, grading, and elevation tolerances.

B. Proceed with concrete pavement operations only after nonconforming conditions have been corrected and subgrade is ready to receive pavement.

3.2 PREPARATION

A. Remove loose material from compacted subbase surface immediately before placing concrete.

3.3 EDGE FORMS AND SCREED CONSTRUCTION

A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides for pavement to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.

B. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

3.4 STEEL REINFORCEMENT

A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.

B. Clean reinforcement of loose rust and mill scale, earth, ice, or other bond-reducing materials.

C. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Maintain minimum cover to reinforcement.

D. Zinc-Coated Reinforcement: Use galvanized steel wire ties to fasten zinc-coated reinforcement. Repair cut and damaged zinc coatings with zinc repair material.

3.5 JOINTS

A. General: Form construction, isolation, and contraction joints and tool edgings true to line with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline, unless otherwise indicated.

1. When joining existing pavement, place transverse joints to align with previously placed joints, unless otherwise indicated.

B. Construction Joints: Set construction joints at side and end terminations of pavement and at locations where pavement operations are stopped for more than one-half hour unless pavement terminates at isolation joints.

1. Continue steel reinforcement across construction joints, unless otherwise indicated. Do not continue reinforcement through sides of pavement strips, unless otherwise indicated.
2. Provide tie bars at sides of pavement strips where indicated.
3. Butt Joints: Use **[bonding agent]** at joint locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
4. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt-coat one-half of dowel length to prevent concrete bonding to one side of joint.

C. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, walks, other fixed objects, and where indicated.

1. Locate expansion joints at intervals of **[50 feet]**, unless otherwise indicated.
2. Extend joint fillers full width and depth of joint.

3. Place top of joint filler flush with finished concrete surface if joint sealant is not indicated.
4. Furnish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.
5. Protect top edge of joint filler during concrete placement with metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.

D. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness, as follows[**to match jointing of existing adjacent concrete pavement**]:

1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint with grooving tool to a [**1/4-inch**] [**3/8-inch**] radius. Repeat grooving of contraction joints after applying surface finishes. Eliminate groover marks on concrete surfaces.
2. Doweled Contraction Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt coat one-half of dowel length to prevent concrete bonding to one side of joint.

E. Edging: Tool edges of pavement, gutters, curbs, and joints in concrete after initial floating with an edging tool to a [**1/4-inch**] radius. Repeat tooling of edges after applying surface finishes. Eliminate tool marks on concrete surfaces.

3.6 CONCRETE PLACEMENT

A. Inspection: Before placing concrete, inspect and complete formwork installation, steel reinforcement, and items to be embedded or cast in. Notify other trades to permit installation of their work.

B. Remove snow, ice, or frost from subbase surface and reinforcement before placing concrete. Do not place concrete on frozen surfaces.

C. Moisten subbase to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.

D. Comply with ACI 301 requirements for measuring, mixing, transporting, and placing concrete.

E. Do not add water to concrete during delivery or at Project site.

F. Do not add water to fresh concrete after testing.

G. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.

H. Consolidate concrete according to ACI 301 by mechanical vibrating equipment supplemented by hand spading, rodding, or tamping.

1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand spreading and consolidation. Consolidate with care to prevent dislocating reinforcement, dowels, and joint devices.

I. Screed pavement surfaces with a straightedge and strike off.

J. Commence initial floating using bull floats or darbies to impart an open textured and uniform surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.

K. Curbs and Gutters: When automatic machine placement is used for curb and gutter placement, submit revised mix design and laboratory test results that meet or exceed requirements. Produce curbs and gutters to required cross section, lines, grades, finish, and jointing as specified for formed concrete. If results are not approved, remove and replace with formed concrete.

L. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.

1. When air temperature has fallen to or is expected to fall below 40 deg F, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F and not more than 80 deg F at point of placement.
2. Do not use frozen materials or materials containing ice or snow.
3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mix designs.

M. Hot-Weather Placement: Comply with ACI 301 and as follows when hot-weather conditions exist:

1. Cool ingredients before mixing to maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
2. Cover steel reinforcement with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
3. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

3.7 FLOAT FINISHING

A. General: Do not add water to concrete surfaces during finishing operations.

B. Float Finish: Begin the second floating operation when bleed-water sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats, or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.

1. Medium-to-Fine-Textured Broom Finish: Draw a soft bristle broom across float-finished concrete surface perpendicular to line of traffic to provide a uniform, texture.

3.8 CONCRETE PROTECTION AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.

B. Comply with ACI 306.1 for cold-weather protection.

C. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.

D. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.

E. Curing Methods: Cure concrete by moisture curing, moisture-retaining-cover curing, curing compound, or a combination of these as follows:

1. Moist Curing: Keep surfaces continuously moist for not less than seven days with the following materials:

   a. Water.
   b. Continuous water-fog spray.
   c. Absorptive cover, water saturated and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.

2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

3.9 PAVEMENT TOLERANCES

A. Comply with tolerances of ACI 117 and as follows:

1. Elevation: 1/4 inch.
2. Thickness: Plus 3/8 inch, minus 1/4 inch.
3. Surface: Gap below 10-foot- long, unleveled straightedge not to exceed 1/4 inch.
4. Lateral Alignment and Spacing of Tie Bars and Dowels: 1 inch.
5. Vertical Alignment of Tie Bars and Dowels: 1/4 inch.
6. Alignment of Tie-Bar End Relative to Line Perpendicular to Pavement Edge: 1/2 inch.

7. Alignment of Dowel-Bar End Relative to Line Perpendicular to Pavement Edge: Length of dowel 1/4 inch per 12 inches.
8. Joint Spacing: 3 inches.
9. Contraction Joint Depth: Plus 1/4 inch, no minus.
10. Joint Width: Plus 1/8 inch, no minus.

3.10 FIELD QUALITY CONTROL

A. Testing Agency: [**Engage**] a qualified independent testing and inspecting agency to perform field tests and inspections and prepare test reports.

B. Testing Services: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:

1. Testing Frequency: Obtain at least 1 composite sample for each [**5000 sq. ft.**] or fraction thereof of each concrete mix placed each day.

    a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.

2. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mix. Perform additional tests when concrete consistency appears to change.
3. Air Content: ASTM C 231, pressure method; one test for each composite sample, but not less than one test for each day's pour of each concrete mix.
4. Concrete Temperature: ASTM C 1064; one test hourly when air temperature is 40 deg F and below and when 80 deg F and above, and one test for each composite sample.
5. Compression Test Specimens: ASTM C 31/C 31M; cast and laboratory cure one set of three standard cylinder specimens for each composite sample.
6. Compressive-Strength Tests: ASTM C 39/C 39M; test 1 specimen at 7 days and 2 specimens at 28 days.

    a. A compressive-strength test shall be the average compressive strength from 2 specimens obtained from same composite sample and tested at 28 days.

C. Strength of each concrete mix will be satisfactory if average of any 3 consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.

D. Test results shall be reported in writing to Engineer, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.

E. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Engineer but will not be used as sole basis for approval or rejection of concrete.

F. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Engineer.

G. Remove and replace concrete pavement where test results indicate that it does not comply with specified requirements.

H. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.11 REPAIRS AND PROTECTION

A. Remove and replace concrete pavement that is broken, damaged, or defective or that does not comply with requirements in this Section.

B. Drill test cores, where directed by Engineer, when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory pavement areas with portland cement concrete bonded to pavement with epoxy adhesive.

C. Protect concrete from damage. Exclude traffic from pavement for at least 14 days after placement. When construction traffic is permitted, maintain pavement as clean as possible by removing surface stains and spillage of materials as they occur.

D. Maintain concrete pavement free of stains, discoloration, dirt, and other foreign material. Sweep concrete pavement not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION 321313

SECTION 329200 - TURF AND GRASSES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Seeding.

B. Related Sections:

1. Division 31 Section "Site Clearing" for topsoil stripping and stockpiling.
2. Division 31 Section "Earth Moving" for excavation, filling and backfilling, and rough grading.

1.3 DEFINITIONS

A. Duff Layer: The surface layer of native topsoil that is composed of mostly decayed leaves, twigs, and detritus.

B. Finish Grade: Elevation of finished surface of planting soil.

C. Manufactured Topsoil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.

D. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. This includes insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. It also includes substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.

E. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. These include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.

F. Planting Soil: Standardized topsoil; existing, native surface topsoil; existing, in-place surface soil; imported topsoil; or manufactured topsoil that is modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.

G. Subgrade: Surface or elevation of subsoil remaining after excavation is complete, or top surface of a fill or backfill before planting soil is placed.

H. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.

I. Surface Soil: Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil, but in disturbed areas such as urban environments, the surface soil can be subsoil.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated.

1. Pesticides and Herbicides: Include product label and manufacturer's application instructions specific to this Project.

B. Certification of Grass Seed: From seed vendor for each grass-seed monostand or mixture stating the botanical and common name, percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.

1. Certification of each seed mixture for [**turfgrass sod**]. Include identification of source and name and telephone number of supplier.

C. Qualification Data: For qualified landscape Installer.

D. Product Certificates: For [**soil amendments**] [**and**] [**fertilizers**], from manufacturer.

E. Material Test Reports: For [**existing in-place surface soil**] [**and**] [**imported or manufactured topsoil**].

F. Maintenance Instructions: Recommended procedures to be established by Owner for maintenance of turf during a calendar year. Submit before expiration of required initial maintenance periods.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: A qualified landscape Installer whose work has resulted in successful turf establishment.
1. Experience: [**Five**] years' experience in turf installation

2. Maintenance Proximity: Not more than [**two**] hours' normal travel time from Installer's place of business to Project site.
3. Pesticide Applicator: State licensed, commercial.

B. Soil-Testing Laboratory Qualifications: An independent laboratory or university laboratory, recognized by the State Department of Agriculture, with the experience and capability to conduct the testing indicated and that specializes in types of tests to be performed.

C. Soil Analysis: For each unamended soil type, furnish soil analysis and a written report by a qualified soil-testing laboratory stating percentages of organic matter; gradation of sand, silt,

and clay content; cation exchange capacity; deleterious material; pH; and mineral and plant-nutrient content of the soil.

1. Testing methods and written recommendations shall comply with USDA's Handbook No. 60.
2. The soil-testing laboratory shall oversee soil sampling, with depth, location, and number of samples to be taken per instructions from Architect. A minimum of [**three**] representative samples shall be taken from varied locations for each soil to be used or amended for planting purposes.
3. Report suitability of tested soil for turf growth.

    a. Based on the test results, state recommendations for soil treatments and soil amendments to be incorporated. State recommendations in weight per 1000 sq. ft. or volume per cu. yd. for nitrogen, phosphorus, and potash nutrients and soil amendments to be added to produce satisfactory planting soil suitable for healthy, viable plants.
    b. Report presence of problem salts, minerals, or heavy metals, including aluminum, arsenic, barium, cadmium, chromium, cobalt, lead, lithium, and vanadium. If such problem materials are present, provide additional recommendations for corrective action.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Seed and Other Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of conformance with state and federal laws, as applicable.

B. Sod: Harvest, deliver, store, and handle sod according to requirements in "Specifications for Turfgrass Sod Materials" and "Specifications for Turfgrass Sod Transplanting and Installation" in TPI's "Guideline Specifications to Turfgrass Sodding." Deliver sod in time for planting within 24 hours of harvesting. Protect sod from breakage and drying.

C. Bulk Materials:

1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
2. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
3. Accompany each delivery of bulk fertilizers[**, lime,**] and soil amendments with appropriate certificates.

1.7 PROJECT CONDITIONS

A. Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with initial maintenance periods to provide required maintenance from date of [**substantial completion**]

1. Spring Planting: April 15th through June 15th.

2. Fall Planting: August 15th through October 15th

B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions.

1.8 MAINTENANCE SERVICE

A. Initial Turf Maintenance Service: Provide full maintenance by skilled employees of landscape Installer. Maintain as required in Part 3. Begin maintenance immediately after each area is planted and continue until acceptable turf is established but for not less than the following periods:

1. Seeded Turf: [**60**] days from date of [**Substantial Completion**]

a. When initial maintenance period has not elapsed before end of planting season, or if turf is not fully established, continue maintenance during next planting season.

PART 2 - PRODUCTS

2.1 SEED

A. Grass Seed: Fresh, clean, dry, new-crop seed complying with AOSA's "Journal of Seed Technology; Rules for Testing Seeds" for purity and germination tolerances.

B. Seed Species: State-certified seed of grass species as follows:

C. Seed Species: Seed of grass species as follows, with not less than [**95**] percent germination, not less than [**85**] percent pure seed, and not more than [**0.5**] percent weed seed:

1. Sun and Partial Shade: Proportioned by weight as follows:

a. 50 percent Kentucky bluegrass (Poa pratensis).
b. 30 percent chewings red fescue (Festuca rubra variety).
c. 10 percent perennial ryegrass (Lolium perenne).
d. 10 percent redtop (Agrostis alba).

2.2 INORGANIC SOIL AMENDMENTS

A. Lime: ASTM C 602, agricultural liming material containing a minimum of 80 percent calcium carbonate equivalent and as follows:

1. Class: T, with a minimum of 99 percent passing through No. 8 sieve and a minimum of 75 percent passing through No. 60 sieve.
2. Class: O, with a minimum of 95 percent passing through No. 8 sieve and a minimum of 55 percent passing through No. 60 sieve.

B. Sulfur: Granular, biodegradable, containing a minimum of 90 percent sulfur, and with a minimum of 99 percent passing through No. 6 sieve and a maximum of 10 percent passing through No. 40 sieve.

C. Iron Sulfate: Granulated ferrous sulfate containing a minimum of 20 percent iron and 10 percent sulfur.

D. Aluminum Sulfate: Commercial grade, unadulterated.

E. Perlite: Horticultural perlite, soil amendment grade.

F. Agricultural Gypsum: Minimum 90 percent calcium sulfate, finely ground with 90 percent passing through No. 50 sieve.

G. Sand: Clean, washed, natural or manufactured, and free of toxic materials.

2.3 ORGANIC SOIL AMENDMENTS

A. Compost: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through [**1-inch**] [**3/4-inch**] [**1/2-inch**] sieve; soluble salt content of [**5 to 10**] decisiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and as follows:

1. Organic Matter Content: [**50 to 60**] percent of dry weight.
2. Feedstock: Agricultural, food, or industrial residuals; biosolids; yard trimmings; or source-separated or compostable mixed solid waste.

B. Manure: Well-rotted, unleached, stable or cattle manure containing not more than 25 percent by volume of straw, sawdust, or other bedding materials; free of toxic substances, stones, sticks, soil, weed seed, and material harmful to plant growth.

2.4 FERTILIZERS

A. Bonemeal: Commercial, raw or steamed, finely ground; a minimum of [**4**] percent nitrogen and [**20**] percent phosphoric acid.

B. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:
1. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.

C. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:
1. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.

2.5 PLANTING SOILS

A. Top soil ASTM D 5268 topsoil, with pH range of 5.5 to 7, a minimum of [**4**] percent organic material content; free of stones 1 inchor larger in any dimension and other extraneous materials harmful to plant growth. Mix ASTM D 5268 topsoil with the following soil amendments[**and fertilizers**] in the following quantities to produce planting soil:

1. Ratio of Loose Compost to Topsoil by Volume: [**1:3**]
2. Weight of Slow-Release Fertilizer per 1000 Sq. Ft.:

2.6 MULCHES

A. Straw Mulch: Provide air-dry, clean, mildew- and seed-free, salt hay or threshed straw of wheat, rye, oats, or barley.

2.7 PESTICIDES

A. General: Pesticide, registered and approved by EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.

B. 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.

C. Post-Emergent Herbicide (Selective and Non-Selective): Effective for controlling weed growth that has already germinated.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas to be planted for compliance with requirements and other conditions affecting performance.

1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
2. Do not mix or place soils and soil amendments in frozen, wet, or muddy conditions.
3. Suspend soil spreading, grading, and tilling operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
4. Uniformly moisten excessively dry soil that is not workable and which is too dusty.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Architect and replace with new planting soil.

3.2 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities, trees, shrubs, and plantings from damage caused by planting operations.
   1. Protect grade stakes set by others until directed to remove them.

3.3 TURF AREA PREPARATION

A. Limit turf subgrade preparation to areas to be planted.

B. Newly Graded Subgrades: Loosen subgrade to a minimum depth of [**4 inches**] Remove stones larger than [**1 inch**] in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.
   1. [**Thoroughly blend planting soil off-site before spreading**] [**or**] [**spread topsoil, apply soil amendments and fertilizer on surface, and thoroughly blend planting soil**].
      a. Delay mixing fertilizer with planting soil if planting will not proceed within a few days.
   2. Spread planting soil to a depth of [**6 inches**] but not less than required to meet finish grades after light rolling and natural settlement. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet.
      a. Spread approximately 1/2 the thickness of planting soil over loosened subgrade. Mix thoroughly into top [**2 inches**] of subgrade. Spread remainder of planting soil.

C. Unchanged Subgrades: If turf is to be planted in areas unaltered or undisturbed by excavating, grading, or surface-soil stripping operations, prepare surface soil as follows:
   1. Remove existing grass, vegetation, and turf. Do not mix into surface soil.
   2. Loosen surface soil to a depth of at least [**6 inches**] Apply soil amendments and fertilizers according to planting soil mix proportions and mix thoroughly into top [**4 inches**of soil. Till soil to a homogeneous mixture of fine texture.
   3. Remove stones larger than [**1 inch**] in any dimension and sticks, roots, trash, and other extraneous matter.
   4. Legally dispose of waste material, including grass, vegetation, and turf, off Owner's property.

D. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus 1/2 inch of finish elevation. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit finish grading to areas that can be planted in the immediate future.

E. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

F. Before planting, obtain Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.4 PREPARATION FOR EROSION-CONTROL MATERIALS

A. Prepare area as specified in "Turf Area Preparation" Article.

B. For erosion-control mats, install planting soil in two lifts, with second lift equal to thickness of erosion-control mats. Install erosion-control mat and fasten as recommended by material manufacturer.

C. Moisten prepared area before planting if surface is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

3.5 SEEDING

A. Sow seed with spreader or seeding machine. Do not broadcast or drop seed when wind velocity exceeds 5 mph. Evenly distribute seed by sowing equal quantities in two directions at right angles to each other.

1. Do not use wet seed or seed that is moldy or otherwise damaged.
2. Do not seed against existing trees. Limit extent of seed to outside edge of planting saucer.

B. Sow seed per seed suppliers recommended rates

C. Rake seed lightly into top 1/8 inch of soil, roll lightly, and water with fine spray.

D. Protect seeded areas with slopes not exceeding 1:6 by spreading straw mulch. Spread uniformly at a minimum rate of [**2 tons/acre**] to form a continuous blanket [**1-1/2 inches**] in loose thickness over seeded areas. Spread by hand, blower, or other suitable equipment.

1. Anchor straw mulch by crimping into soil with suitable mechanical equipment.

3.6 TURF RENOVATION

A. Renovate existing turf.

B. Renovate existing turf damaged by Contractor's operations, such as storage of materials or equipment and movement of vehicles.

1. Reestablish turf where settlement or washouts occur or where minor regrading is required.
2. Install new planting soil as required.

C. Remove sod and vegetation from diseased or unsatisfactory turf areas; do not bury in soil.

D. Remove topsoil containing foreign materials such as oil drippings, fuel spills, stones, gravel, and other construction materials resulting from Contractor's operations, and replace with new planting soil.

E. Mow, dethatch, core aerate, and rake existing turf.

F. Remove weeds before seeding. Where weeds are extensive, apply selective herbicides as required. Do not use pre-emergence herbicides.

G. Remove waste and foreign materials, including weeds, soil cores, grass, vegetation, and turf, and legally dispose of them off Owner's property.

H. Till stripped, bare, and compacted areas thoroughly to a soil depth of 6 inches.

I. Apply soil amendments and initial fertilizers required for establishing new turf and mix thoroughly into top 4 inches of existing soil. Install new planting soil to fill low spots and meet finish grades.

J. Apply [**seed and protect with straw mulch**] as required for new turf.

K. Water newly planted areas and keep moist until new turf is established.

3.7 TURF MAINTENANCE

A. Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable turf. Roll, regrade, and replant bare or eroded areas and remulch to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation.

1. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace materials and turf damaged or lost in areas of subsidence.
2. In areas where mulch has been disturbed by wind or maintenance operations, add new mulch and anchor as required to prevent displacement.
3. Apply treatments as required to keep turf and soil free of pests and pathogens or disease. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards.

B. Watering: Install and maintain temporary piping, hoses, and turf-watering equipment to convey water from sources and to keep turf uniformly moist to a depth of 4 inches.

1. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch. Lay out temporary watering system to avoid walking over muddy or newly planted areas.
2. Water turf with fine spray at a minimum rate of 1 inch per week unless rainfall precipitation is adequate.

C. Mow turf as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than 1/3 of grass height. Remove no more than 1/3 of grass-leaf growth in initial or subsequent mowings. Do not delay mowing until grass blades bend over

and become matted. Do not mow when grass is wet. Schedule initial and subsequent mowings to maintain the following grass height:

1. Mow **[Kentucky bluegrass]** height of 1-1/2 to 2 inches.

D. Turf Postfertilization: Apply fertilizer after initial mowing and when grass is dry.

1. Use fertilizer that will provide actual nitrogen of at least **[1 lb/1000 sq. ft.]** to turf area.

3.8 SATISFACTORY TURF

A. Turf installations shall meet the following criteria as determined by Architect:

1. Satisfactory Seeded Turf: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding **[90 percent over any 10 sq. ft. and bare spots not exceeding 5 by 5 inches]**

B. Use specified materials to reestablish turf that does not comply with requirements and continue maintenance until turf is satisfactory.

3.9 PESTICIDE APPLICATION

A. Apply pesticides and other chemical products and biological control agents in accordance with requirements of authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with Owner's operations and others in proximity to the Work. Notify Owner before each application is performed.

B. Post-Emergent Herbicides (Selective and Non-Selective): Apply only as necessary to treat already-germinated weeds and in accordance with manufacturer's written recommendations.

3.10 CLEANUP AND PROTECTION

A. Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.

B. Erect temporary fencing or barricades and warning signs as required to protect newly planted areas from traffic. Maintain fencing and barricades throughout initial maintenance period and remove after plantings are established.

C. Remove nondegradable erosion-control measures after grass establishment period.

END OF SECTION 329200

SECTION 329300 - PLANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Plants (Alt Item)
2. Planting soil (Alt Item)
3. Engineered soil
4. Tree stabilization

B. Related Sections:

1. Division 01 Section "Temporary Tree and Plant Protection" for protecting, trimming, pruning, repairing, and replacing existing trees to remain that interfere with, or are affected by, execution of the Work.
2. Division 31 Section "Site Clearing" for protection of existing trees and plantings, topsoil stripping and stockpiling, and site clearing.
3. Division 31 Section "Earth Moving" for excavation, filling, and rough grading and for subsurface aggregate drainage and drainage backfill materials.
4. Division 32 Section "Turf and Grasses" for turf (lawn) and meadow planting, hydroseeding, and erosion-control materials.

1.3 DEFINITIONS

A. Backfill: The earth used to replace or the act of replacing earth in an excavation.

B. Balled and Burlapped Stock: Plants dug with firm, natural balls of earth in which they were grown, with ball size not less than [**sizes indicated**]; wrapped with burlap, tied, rigidly supported, and drum laced with twine with the root flare visible at the surface of the ball as recommended by ANSI Z60.1.

C. Balled and Potted Stock: Plants dug with firm, natural balls of earth in which they are grown and placed, unbroken, in a container. Ball size is not less than [**sizes indicated**.

D. Container-Grown Stock: Healthy, vigorous, well-rooted plants grown in a container, with a well-established root system reaching sides of container and maintaining a firm ball when removed from container. Container shall be rigid enough to hold ball shape and protect root mass during shipping and be sized according to ANSI Z60.1 for type and size of plant required.

E. Duff Layer: The surface layer of native topsoil that is composed of mostly decayed leaves, twigs, and detritus.

F. Finish Grade: Elevation of finished surface of planting soil.

G. Manufactured Topsoil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.

H. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. This includes insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. It also includes substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.

I. Pests: Living organisms that occur where they are not desired, or that cause damage to plants, animals, or people. These include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.

J. Planting Area: Areas to be planted.

K. Planting Soil: Standardized topsoil; existing, native surface topsoil; existing, in-place surface soil; imported topsoil; or manufactured topsoil that is modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.

L. Plant; Plants; Plant Material: These terms refer to vegetation in general, including trees, shrubs, vines, ground covers, ornamental grasses, bulbs, corms, tubers, or herbaceous vegetation.

M. Root Flare: Also called "trunk flare." The area at the base of the plant's stem or trunk where the stem or trunk broadens to form roots; the area of transition between the root system and the stem or trunk.

N. Stem Girdling Roots: Roots that encircle the stems (trunks) of trees below the soil surface.

O. Subgrade: Surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.

P. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.

Q. Surface Soil: Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil; but in disturbed areas such as urban environments, the surface soil can be subsoil.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated, including soils.

1. Plant Materials: Include quantities, sizes, quality, and sources for plant materials.
2. Pesticides and Herbicides: Include product label and manufacturer's application instructions specific to the Project.

B. Qualification Data: For qualified landscape Installer. Include list of similar projects completed by Installer demonstrating Installer's capabilities and experience. Include project names, addresses, and year completed, and include names and addresses of owners' contact persons.

C. Material Test Reports: For [**existing in-place surface soil**] [**and**] [**imported or manufactured topsoil**].

D. Warranty: Sample of special warranty.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: A qualified landscape Installer whose work has resulted in successful establishment of plants.
1. Experience: [**Five**] years' experience in landscape installation in addition to requirements in Division 01 Section "Quality Requirements."
2. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.

3. Pesticide Applicator: State licensed, commercial.

B. Soil-Testing Laboratory Qualifications: An independent or university laboratory, recognized by the State Department of Agriculture, with the experience and capability to conduct the testing indicated and that specializes in types of tests to be performed.

C. Soil Analysis: For each unamended soil type, furnish soil analysis and a written report by a qualified soil-testing laboratory stating percentages of organic matter; gradation of sand, silt, and clay content; cation exchange capacity; deleterious material; pH; and mineral and plant-nutrient content of the soil.

1. Testing methods and written recommendations shall comply with USDA's Handbook No. 60.
2. The soil-testing laboratory shall oversee soil sampling; with depth, location, and number of samples to be taken per instructions from Architect. A minimum of [**three**] <**Insert number**> representative samples shall be taken from varied locations for each soil to be used or amended for planting purposes.
3. Report suitability of tested soil for plant growth.

a. Based upon the test results, state recommendations for soil treatments and soil amendments to be incorporated. State recommendations in weight per 1000 sq. ft. or volume per cu. yd. for nitrogen, phosphorus, and potash nutrients and soil amendments to be added to produce satisfactory planting soil suitable for healthy, viable plants.
b. Report presence of problem salts, minerals, or heavy metals, including aluminum, arsenic, barium, cadmium, chromium, cobalt, lead, lithium, and vanadium. If such problem materials are present, provide additional recommendations for corrective action.

D. Provide quality, size, genus, species, and variety of plants indicated, complying with applicable requirements in ANSI Z60.1.

1. Selection of plants purchased under allowances will be made by Architect, who will tag plants at their place of growth before they are prepared for transplanting.

E. Measurements: Measure according to ANSI Z60.1. Do not prune to obtain required sizes.

1. Trees and Shrubs: Measure with branches and trunks or canes in their normal position. Take height measurements from or near the top of the root flare for field-grown stock and container grown stock. Measure main body of tree or shrub for height and spread; do not measure branches or roots tip to tip. Take caliper measurements 6 inches above the root flare for trees up to 4-inch caliper size, and 12 inches above the root flare for larger sizes.
2. Other Plants: Measure with stems, petioles, and foliage in their normal position.

F. Plant Material Observation: Architect may observe plant material either at place of growth or at site before planting for compliance with requirements for genus, species, variety, cultivar, size, and quality. Architect retains right to observe trees and shrubs further for size and condition of balls and root systems, pests, disease symptoms, injuries, and latent defects and to reject unsatisfactory or defective material at any time during progress of work. Remove rejected trees or shrubs immediately from Project site.

1. Notify Architect of sources of planting materials [**seven**] <**Insert number**> days in advance of delivery to site.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of conformance with state and federal laws if applicable.

B. Bulk Materials:

1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
2. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
3. Accompany each delivery of bulk fertilizers, and soil amendments with appropriate certificates.

C. Deliver bare-root stock plants freshly dug. Immediately after digging up bare-root stock, pack root system in wet straw, hay, or other suitable material to keep root system moist until planting.

D. Do not prune trees and shrubs before delivery. Protect bark, branches, and root systems from sun scald, drying, wind burn, sweating, whipping, and other handling and tying damage. Do not bend or bind-tie trees or shrubs in such a manner as to destroy their natural shape. Provide protective covering of plants during shipping and delivery. Do not drop plants during delivery and handling.

E. Handle planting stock by root ball.

F. Deliver plants after preparations for planting have been completed, and install immediately. If planting is delayed more than six hours after delivery, set plants and trees in their appropriate aspect (sun, filtered sun, or shade), protect from weather and mechanical damage, and keep roots moist.
   1. Set balled stock on ground and cover ball with soil, peat moss, sawdust, or other acceptable material.
   2. Do not remove container-grown stock from containers before time of planting.
   3. Water root systems of plants stored on-site deeply and thoroughly with a fine-mist spray. Water as often as necessary to maintain root systems in a moist, but not overly-wet condition.

1.7 PROJECT CONDITIONS

A. Field Measurements: Verify actual grade elevations, service and utility locations, irrigation system components, and dimensions of plantings and construction contiguous with new plantings by field measurements before proceeding with planting work.

B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions and warranty requirements.

C. Coordination with Turf Areas (Lawns): Plant trees, shrubs, and other plants after finish grades are established and before planting turf areas unless otherwise indicated.

   1. When planting trees, shrubs, and other plants after planting turf areas, protect turf areas, and promptly repair damage caused by planting operations.

1.8 WARRANTY

A. Special Warranty: Installer agrees to repair or replace plantings and accessories that fail in materials, workmanship, or growth within specified warranty period.

   1. Failures include, but are not limited to, the following:

      a. Death and unsatisfactory growth, except for defects resulting from abuse, lack of adequate maintenance, or neglect by Owner, or incidents that are beyond Contractor's control.
      b. Structural failures including plantings falling or blowing over.
      c. Faulty performance of [**tree stabilization**]

   2. Warranty Periods from Date of [**Substantial Completion**]

      a. Trees, Shrubs, Vines, and Ornamental Grasses: [**12**] months.
      b. Ground Covers, Biennials, Perennials, and Other Plants: [**12**] months.
      c. Annuals: [**Two**] months.

   3. Include the following remedial actions as a minimum:

a. Immediately remove dead plants and replace unless required to plant in the succeeding planting season.
b. Replace plants that are more than 25 percent dead or in an unhealthy condition at end of warranty period.
c. A limit of one replacement of each plant will be required except for losses or replacements due to failure to comply with requirements.

1.9 MAINTENANCE SERVICE

A. Initial Maintenance Service for Trees and Shrubs: Provide maintenance by skilled employees of landscape Installer. Maintain as required in Part 3. Begin maintenance immediately after plants are installed and continue until plantings are acceptably healthy and well established but for not less than maintenance period below.

1. Maintenance Period: [**Three**] months from date of [**Substantial Completion**].

B. Initial Maintenance Service for Ground Cover and Other Plants: Provide maintenance by skilled employees of landscape Installer. Maintain as required in Part 3. Begin maintenance immediately after plants are installed and continue until plantings are acceptably healthy and well established but for not less than maintenance period below.

1. Maintenance Period: [**Three**] months from date of [**Substantial Completion**].

PART 2 - PRODUCTS

2.1 PLANT MATERIAL

A. General: Furnish nursery-grown plants true to genus, species, variety, cultivar, stem form, shearing, and other features indicated in Plant Schedule or Plant Legend shown on Drawings and complying with ANSI Z60.1; and with healthy root systems developed by transplanting or root pruning. Provide well-shaped, fully branched, healthy, vigorous stock, densely foliated when in leaf and free of disease, pests, eggs, larvae, and defects such as knots, sun scald, injuries, abrasions, and disfigurement.

1. Trees with damaged, crooked, or multiple leaders; tight vertical branches where bark is squeezed between two branches or between branch and trunk ("included bark"); crossing trunks; cut-off limbs more than 3/4 inch in diameter; or with stem girdling roots will be rejected.
2. Collected Stock: Do not use plants harvested from the wild, from native stands, from an established landscape planting, or not grown in a nursery unless otherwise indicated.

B. Provide plants of sizes, grades, and ball or container sizes complying with ANSI Z60.1 for types and form of plants required. Plants of a larger size may be used if acceptable to Architect, with a proportionate increase in size of roots or balls.

C. Root-Ball Depth: Furnish trees and shrubs with root balls measured from top of root ball, which shall begin at root flare according to ANSI Z60.1. Root flare shall be visible before planting.

D. Labeling: Label [**at least one**] plant of each variety, size, and caliper with a securely attached, waterproof tag bearing legible designation of common name and full scientific name, including genus and species. Include nomenclature for hybrid, variety, or cultivar, if applicable for the plant as shown on Drawings.

E. [**Annuals**] [**and**] [**Biennials**]: Provide healthy, disease-free plants of species and variety shown or listed, with well-established root systems reaching to sides of the container to maintain a firm ball, but not with excessive root growth encircling the container. Provide only plants that are acclimated to outdoor conditions before delivery [**and that are in bud but not yet in bloom**].

2.2 INORGANIC SOIL AMENDMENTS

A. Lime: ASTM C 602, agricultural liming material containing a minimum of 80 percent calcium carbonate equivalent and as follows:

1. Class: T, with a minimum of 99 percent passing through No. 8 sieve and a minimum of 75 percent passing through No. 60 sieve.
2. Provide lime in form of ground [**dolomitic limestone**].

B. Sulfur: Granular, biodegradable, and containing a minimum of 90 percent sulfur, with a minimum of 99 percent passing through No. 6 sieve and a maximum of 10 percent passing through No. 40 sieve.

C. Iron Sulfate: Granulated ferrous sulfate containing a minimum of 20 percent iron and 10 percent sulfur.

D. Aluminum Sulfate: Commercial grade, unadulterated.

E. Perlite: Horticultural perlite, soil amendment grade.

F. Agricultural Gypsum: Minimum 90 percent calcium sulfate, finely ground with 90 percent passing through No. 50 sieve.

G. Sand: Clean, washed, natural or manufactured, and free of toxic materials.

2.3 ORGANIC SOIL AMENDMENTS

A. Compost: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through [**1-inch**] [**3/4-inch**] [**1/2-inch**] sieve; soluble salt content of [**5 to 10**] decisiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and as follows:

1. Organic Matter Content: [**50 to 60**] percent of dry weight.
2. Feedstock: Agricultural, food, or industrial residuals; biosolids; yard trimmings; or source-separated or compostable mixed solid waste.

B. Manure: Well-rotted, unleached, stable or cattle manure containing not more than 25 percent by volume of straw, sawdust, or other bedding materials; free of toxic substances, stones, sticks, soil, weed seed, debris, and material harmful to plant growth.

2.4 FERTILIZERS

A. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:

1. Composition: 1 lb/1000 sq. ft. of actual nitrogen, 4 percent phosphorous, and 2 percent potassium, by weight.

B. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:

1. Composition: 20 percent nitrogen, 10 percent phosphorous, and 10 percent potassium, by weight.

2.5 PLANTING SOIL MIX

A. Planting Soil Mix: Existing, native surface topsoil formed under natural conditions with the duff layer retained during excavation process [and stockpiled on-site]. Verify suitability of native surface topsoil to produce viable planting soil. Clean soil of roots, plants, sod, stones, clay lumps, and other extraneous materials harmful to plant growth.

B. Imported Planting Soil Mix: Imported topsoil or manufactured topsoil from off-site sources. Obtain topsoil displaced from naturally well-drained construction or mining sites where topsoil occurs at least 4 inches deep; do not obtain from [agricultural lands], bogs or marshes.

C. The soil mixture shall be uniform, free of stones, stumps, roots, or other similar objects larger than 1 inch. Placement shall be in 6" lifts per plans.

2.6 ENGINEED SOIL MIX

A. Engineered Soil: Mix produced by modifying planting soil as follows:
1. 40% silica sand (by volume)
2. 30% topsoil (by volume)
3. 30% compost (by volume)
   a. The soil mixture shall be uniform, free of stones, stumps, roots, or other similar objects larger than two inches. On-site soil mixing or placement not allowed if soil is saturated to water within 48 hours. The soil shall be covered and stored to prevent wetting or saturation. Placement shall be in 6" lifts per plans.

2.7 MULCHES

A. Organic Mulch: Free from deleterious materials and suitable as a top dressing of trees and shrubs, consisting of one of the following:

1. Type: **[double shredded hardwood]**
2. Color: Natural.

2.8 PESTICIDES

A. General: Pesticide registered and approved by EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.

B. 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.

C. Post-Emergent Herbicide (Selective and Non-Selective): Effective for controlling weed growth that has already germinated.

2.9 TREE STABILIZATION MATERIALS

A. Stakes and Guys:

1. Upright and Guy Stakes: Rough-sawn, sound, new **[hardwood]**, free of knots, holes, cross grain, and other defects, 2-by-2-inch nominal by length indicated, pointed at one end.
2. Proprietary Staking-and-Guying Devices: Proprietary stake and adjustable tie systems to secure each new planting by plant stem; sized as indicated and per manufacturer's written recommendations.

a. Products: Subject to compliance with requirements, [**available products that may be incorporated into the Work include, but are not limited to, the following**]:

1) Arborbrace; ArborBrace Tree Guying System.
2) Decorations for Generations, Inc.; [**Reddy Stake**] [**Mega Stake**] System.
3) Approved equal

2.10 MISCELLANEOUS PRODUCTS

A. Antidesiccant: Water-insoluble emulsion, permeable moisture retarder, film forming, for trees and shrubs. Deliver in original, sealed, and fully labeled containers and mix according to manufacturer's written instructions.

B. Burlap: Non-synthetic, biodegradable.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas to receive plants for compliance with requirements and conditions affecting installation and performance.

1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
2. Do not mix or place soils and soil amendments in frozen, wet, or muddy conditions.
3. Suspend soil spreading, grading, and tilling operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
4. Uniformly moisten excessively dry soil that is not workable and which is too dusty.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Architect and replace with new planting soil.

3.2 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities and turf areas and existing plants from damage caused by planting operations.

B. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

C. Apply antidesiccant to trees and shrubs using power spray to provide an adequate film over trunks (before wrapping), branches, stems, twigs, and foliage to protect during digging, handling, and transportation.

1. If deciduous trees or shrubs are moved in full leaf, spray with antidesiccant at nursery before moving and again two weeks after planting.

D. Wrap trees and shrubs with burlap fabric over trunks, branches, stems, twigs, and foliage to protect from wind and other damage during digging, handling, and transportation.

3.3 PLANTING AREA ESTABLISHMENT

A. Loosen subgrade of planting areas to a minimum depth of [**6 inches**] Remove stones larger than [**1 inch**] in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.
1. [**Thoroughly blend planting soil off-site before spreading**] [**or**] [**spread topsoil, apply soil amendments and fertilizer on surface, and thoroughly blend planting soil**].

a. Delay mixing fertilizer with planting soil if planting will not proceed within a few days.

2. Spread planting soil to a depth of [**12 inches**] but not less than required to meet finish grades after natural settlement. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet.

a. Spread approximately one-half the thickness of planting soil over loosened subgrade. Mix thoroughly into top [**2 inches**] of subgrade. Spread remainder of planting soil.

B. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades.

C. Before planting, obtain Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.4 EXCAVATION FOR TREES AND SHRUBS

A. Planting Pits and Trenches: Excavate circular planting pits with sides sloping inward at a 45-degree angle. Excavations with vertical sides are not acceptable. Trim perimeter of bottom leaving center area of bottom raised slightly to support root ball and assist in drainage away from center. Do not further disturb base. Ensure that root ball will sit on undisturbed base soil to prevent settling. Scarify sides of planting pit smeared or smoothed during excavation.

1. Excavate approximately three times as wide as ball diameter for [**balled and burlapped**] [**container-grown**] stock.
2. Excavate at least 12 inches wider than root spread and deep enough to accommodate vertical roots for bare-root stock.
3. Do not excavate deeper than depth of the root ball, measured from the root flare to the bottom of the root ball.
4. If area under the plant was initially dug too deep, add soil to raise it to the correct level and thoroughly tamp the added soil to prevent settling.

B. Subsoil and topsoil removed from excavations [**may**] be used as planting soil.

C. Obstructions: Notify Architect if unexpected rock or obstructions detrimental to trees or shrubs are encountered in excavations.

D. Drainage: Notify Architect if subsoil conditions evidence unexpected water seepage or retention in tree or shrub planting pits.

3.5 TREE, SHRUB, AND VINE PLANTING

A. Before planting, verify that root flare is visible at top of root ball according to ANSI Z60.1. If root flare is not visible, remove soil in a level manner from the root ball to where the top-most root emerges from the trunk. After soil removal to expose the root flare, verify that root ball still meets size requirements.

B. Remove stem girdling roots and kinked roots. Remove injured roots by cutting cleanly; do not break.

C. Set balled and burlapped stock plumb and in center of planting pit or trench with root flare [**1 inch above**] adjacent finish grades.

1. After placing some backfill around root ball to stabilize plant, carefully cut and remove burlap, rope, and wire baskets from tops of root balls and from sides, but do not remove

from under root balls. Remove pallets, if any, before setting. Do not use planting stock if root ball is cracked or broken before or during planting operation.

2. Backfill around root ball in layers, tamping to settle soil and eliminate voids and air pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
3. Place planting tablets in each planting pit when pit is approximately one-half filled; in amounts recommended in soil reports from soil-testing laboratory. Place tablets beside the root ball about 1 inch from root tips; do not place tablets in bottom of the hole.
4. Continue backfilling process. Water again after placing and tamping final layer of soil.

D. Set [**container-grown**] stock plumb and in center of planting pit or trench with root flare [**1 inch above**] adjacent finish grades.

1. Carefully remove root ball from container without damaging root ball or plant.
2. Backfill around root ball in layers, tamping to settle soil and eliminate voids and air pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
3. Place planting tablets in each planting pit when pit is approximately one-half filled; in amounts recommended in soil reports from soil-testing laboratory. Place tablets beside the root ball about 1 inch from root tips; do not place tablets in bottom of the hole.
4. Continue backfilling process. Water again after placing and tamping final layer of soil.

E. When planting on slopes, set the plant so the root flare on the uphill side is flush with the surrounding soil on the slope; the edge of the root ball on the downhill side will be above the surrounding soil. Apply enough soil to cover the downhill side of the root ball.

3.6 TREE, SHRUB, AND VINE PRUNING

A. Remove only dead, dying, or broken branches. Do not prune for shape.

B. Prune, thin, and shape trees, shrubs, and vines as directed by Architect.

C. Prune, thin, and shape trees, shrubs, and vines according to standard professional horticultural and arboricultural practices. Unless otherwise indicated by Architect, do not cut tree leaders; remove only injured, dying, or dead branches from trees and shrubs; and prune to retain natural character.

D. Do not apply pruning paint to wounds.

3.7 TREE STABILIZATION

A. Staking and Guying: Stake and guy trees more than 14 feet in height and more than 3 inches in caliper unless otherwise indicated. Securely attach no fewer than three guys to stakes 30 inches long, driven to grade.

1. Site-Fabricated Staking-and-Guying Method:
   a. Support trees with bands of flexible ties at contact points with tree trunk and reaching to [**turnbuckle**] or [**compression spring**]. Allow enough slack to avoid rigid restraint of tree.

b. Support trees with strands of cable or multiple strands of tie wire, connected to the brass grommets of tree-tie webbing at contact points with tree trunk and reaching to [**turnbuckle**] or [**compression spring**]. Allow enough slack to avoid rigid restraint of tree.
c. Attach flags to each guy wire, 30 inches above finish grade.
d. Paint [**turnbuckles**] [**compression springs**] with luminescent white paint.

2. Proprietary Staking and Guying Device: Install staking and guying system sized and positioned as recommended by manufacturer unless otherwise indicated and according to manufacturer's written instructions.

3.8 GROUND COVER AND PLANT PLANTING

A. Set out and space ground cover and plants other than trees, shrubs, and vines [**as indicated on plans**] in even rows with triangular spacing.

B. Use planting soil for backfill.

C. Dig holes large enough to allow spreading of roots.

D. For rooted cutting plants supplied in flats, plant each in a manner that will minimally disturb the root system but to a depth not less than two nodes.

E. Work soil around roots to eliminate air pockets and leave a slight saucer indentation around plants to hold water.

F. Water thoroughly after planting, taking care not to cover plant crowns with wet soil.

G. Protect plants from hot sun and wind; remove protection if plants show evidence of recovery from transplanting shock.

3.9 PLANTING AREA MULCHING

A. Mulch backfilled surfaces of planting areas and other areas indicated.

1. Trees in Turf Areas: Apply [**organic**] mulch ring of [**3-inch**] average thickness, with [**36-inch**] radius around trunks or stems. Do not place mulch within [**3 inches**] of trunks or stems.
2. Organic Mulch in Planting Areas: Apply [**3-inch**] average thickness of organic mulch [**extending 12 inches beyond edge of individual planting pit or trench**] [**and**] [**over whole surface of planting area**], and finish level with adjacent finish grades. Do not place mulch within [**3 inches**] of trunks or stems.

3.10 PLANT MAINTENANCE

A. Maintain plantings by pruning, cultivating, watering, weeding, fertilizing, mulching, restoring planting saucers, adjusting and repairing tree-stabilization devices, resetting to proper grades or vertical position, and performing other operations as required to establish healthy, viable plantings. Spray or treat as required to keep trees and shrubs free of insects and disease.

B. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace mulch materials damaged or lost in areas of subsidence.

C. Apply treatments as required to keep plant materials, planted areas, and soils free of pests and pathogens or disease. Use integrated past management practices whenever possible to minimize the use of pesticides and reduce hazards. Treatments include physical controls such as hosing off foliage, mechanical controls such as traps, and biological control agents.

3.11 PESTICIDE APPLICATION

A. Apply pesticides and other chemical products and biological control agents in accordance with authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with Owner's operations and others in proximity to the Work. Notify Owner before each application is performed.

B. Pre-Emergent Herbicides (Selective and Non-Selective): Apply to tree, shrub, and ground-cover areas in accordance with manufacturer's written recommendations. Do not apply to seeded areas.

C. Post-Emergent Herbicides (Selective and Non-Selective): Apply only as necessary to treat already-germinated weeds and in accordance with manufacturer's written recommendations.

3.12 CLEANUP AND PROTECTION

A. During planting, keep adjacent paving and construction clean and work area in an orderly condition.

B. Protect plants from damage due to landscape operations and operations of other contractors and trades. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged plantings.

C. After installation and before [**Substantial Completion**] <**Insert time**>, remove nursery tags, nursery stakes, tie tape, labels, wire, burlap, and other debris from plant material, planting areas, and Project site.

3.13 DISPOSAL

A. Remove surplus soil and waste material including excess subsoil, unsuitable soil, trash, and debris and legally dispose of them off Owner's property.

END OF SECTION 329300

Silt Fence
(1056)

Wisconsin Department of Natural Resources
Conservation Practice Standard

I. Definition

Silt fence is a temporary sediment barrier of entrenched permeable geotextile fabric designed to intercept and slow the flow of sediment-laden sheet flow runoff from small areas of disturbed soil.

II. Purpose

The purpose of this practice is to reduce slope length of the disturbed area and to intercept and retain transported sediment from disturbed areas.

III. Conditions Where Practice Applies

A. This standard applies to the following applications:

1. Erosion occurs in the form of *sheet and rill erosion*[1]. There is no concentration of water flowing to the barrier (*channel erosion*).

2. Where adjacent areas need protection from sediment-laden runoff.

3. Where effectiveness is required for one year or less.

4. Where conditions allow for silt fence to be properly entrenched and staked as outlined in the Criteria Section V.

B. Under no circumstance shall silt fence be used in the following applications:

1. Below the ordinary high watermark or placed perpendicular to flow in streams, swales, ditches or any place where flow is concentrated.

2. Where the maximum gradient upslope of the fence is greater than 50% (2:1).

IV. Federal, State, and Local Laws

Users of this standard shall be aware of applicable federal, state, and local laws, rules, regulations, or permit requirements governing the use and placement of silt fence. This standard does not contain the text of federal, state, or local laws.

V. Criteria

This section establishes the minimum standards for design, installation and performance requirements.

A. Placement

1. When installed as a stand-alone practice on a slope, silt fence shall be placed on the contour. The parallel spacing shall not exceed the maximum slope lengths for the appropriate slope as specified in Table 1.

Table 1.

Slope	Fence Spacing
< 2%	100 feet
2 to 5%	75 feet
5 to 10%	50 feet
10 to 33%	25 feet
> 33%	20 feet

2. Silt fences shall not be placed perpendicular to the contour.

3. The ends of the fence shall be extended upslope to prevent water from flowing around the ends of the fence.

B. Height – Installed silt fences shall be a minimum 14 inches high and shall not exceed 28 inches in height measured from the installed ground elevation.

[1] Words in the standard that are shown in italics are described in X. Definitions. The words are italicized the first time they are used in the text.

C. **Support** – Silt fences shall be supported by either steel or wood supports as specified below:

1. Wood supports

   a. The full height of the silt fence shall be supported by 1 1/8 inches by 1 1/8 inches air or kiln dried posts of hickory or oak.

   b. The silt fence fabric shall be stapled, using at least 0.5-inch staples, to the upslope side of the posts in at least 3 places.

   c. The posts shall be a minimum of 3 feet long for 24-inch silt fence and a minimum of 4 feet for 36-inch silt fence fabric.

2. Steel supports

   a. The full height of the silt fence shall be supported by steel posts at least 5 feet long with a strength of 1.33 pounds per foot and have projections for the attachment of fasteners.

   b. The silt fence fabric shall be attached in at least three places on the upslope side with 50 pound plastic tie straps or wire fasteners. To prevent damage to the fabric from fastener, the protruding ends shall be pointed away from the fabric.

3. The maximum spacing of posts for non-woven silt fence shall be 3 feet and for woven fabric 8 feet.

4. Silt fence shall have a support cord.

5. Where joints are necessary, each end of the fabric shall be securely fastened to a post. The posts shall then be wrapped around each other to produce a stable, secure joint or shall be overlapped the distance between two posts.

6. A minimum of 20 inches of the post shall extend into the ground after installation.

D. **Anchoring** – Silt fence shall be anchored by spreading at least 8 inches of the fabric in a 4 inch wide by 6 inch deep trench, or 6 inch deep V-trench on the upslope side of the fence. The trench shall be backfilled and compacted. Trenches shall not be excavated wider and deeper than necessary for proper installation.

On the terminal ends of silt fence the fabric shall be wrapped around the post such that the staples are not visible.

E. **Geotextile Fabric Specifications** – The geotextile fabric consists of either woven or non-woven polyester, polypropylene, stabilized nylon, polyethylene, or polyvinylidene chloride. Non-woven fabric may be needle punched, heat bonded, resin bonded, or combinations thereof. All fabric shall meet the following requirements as specified in Table 2.

Table 2.

Test Requirement	Method	Value[1]
Minimum grab tensile strength in the machine direction	ASTM D 4632	120 lbs. (550 N)
Minimum grab tensile strength in the cross machine direction	ASTM D 4632	100 lbs. (450 N)
Maximum apparent opening size equivalent standard sieve	ASTM D 4751	No. 30 (600 μm)
Minimum permittivity	ASTM D 4491	0.05 scc^{-1}
Minimum ultraviolet stability percent of strength retained after 500 hours of exposure	ASTM D 4355	70%

(WisDOT Standard Specifications for Road and Bridge Construction, 2001)

[1] All numerical values represent minimum / maximum average roll values. (For example, the average minimum test results on any roll in a lot should meet or exceed the minimum specified values.)

Silt fence shall have a maximum flow rate of 10-gallons/minute/square foot at 50mm constant head as determined by multiplying permittivity in 1/second as determined by ASTM D-4491 by a conversion factor of 74.

F. **Removal** – Silt fences shall be removed once the disturbed area is permanently stabilized and no longer susceptible to erosion.

VI. Considerations

A. Improper placement as well as improper installation and maintenance of silt fences will significantly decrease the effectiveness of this practice.

Silt fences should be considered for trapping sediment where sheet and rill erosion may be expected to occur in small drainage areas. Silt fences should not be placed in areas of concentrated flow.

B. Silt fences should be installed prior to disturbing the upslope area.

C. Silt fences should not be used to define the boundaries of the entire project. Silt fence should be placed only in areas where it is applicable due to its cost and the fact that it is not biodegradable. For example, silt fence should not be placed in locations where the natural overland flow is from an undisturbed area into disturbed areas of the project. It should also not be used as a diversion.

D. Silt fence should not be used in areas where the silt fence is at a higher elevation than the disturbed area.

E. When placing silt fence near trees, care should be taken to minimize damage to the root system. Avoid compaction and root cutting within 1.5 feet multiplied by the inch diameter of the tree (for example: for 10-inch trees keep out a 15-foot radius from the trunk). Refer to UWEX publication Preserving Trees During Construction for more information.

F. To protect silt fence from damage in areas of active construction or heavy traffic, silt fence should be flagged, marked, or highlighted to improve visibility.

G. Silt fence effectiveness is generally increased when used in conjunction with other upslope erosion control practices. To further strengthen the silt fence, straw / hay bales can be placed on the down slope side.

H. To help ensure effectiveness, silt fence should be inspected and repaired as necessary prior to forecasted rain events.

I. Where installation with wood posts is difficult, such as when hard or frozen ground is encountered, the use of steel post is recommended.

J. Silt fence can be mechanically installed with a plow type device provided that the silt fence is trenched in a manner such that equivalent performance is achieved to that specified in Section V.D.

VII. Plans and Specifications

A. Plans and specifications for installing silt fence shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose. The plans and specifications shall address the following:

1. Location of silt fence
2. Contributory drainage area
3. Schedules
4. Material specification conforming to standard
5. Standard drawings and installation details
6. Restoration after removal

B. All plans, standard detail drawings, or specifications shall include schedule for installation, inspection, and maintenance. The responsible party shall be identified.

VIII. Operation and Maintenance

A. Silt fences shall at a minimum be inspected weekly and within 24 hours after every precipitation event that produces 0.5 inches of rain or more during a 24 hour period.

B. Damaged or decomposed fences, undercutting, or flow channels around the end of barriers shall be repaired or corrected.

C. Sediment shall be properly disposed of once the deposits reach ½ the height of the fence.

IX. References

UWEX Publication A0327 "Preserving Trees During Construction"

X. Definitions

Channel Erosion (III.A.1): The deepening and widening of a channel due to soil loss caused by flowing water. As rills become larger and flows begin to concentrate, soil detachment occurs primarily as a result of shear.

Sheet and Rill Erosion (III.A.1): Sheet and rill erosion is the removal of soil by the action of rainfall and shallow overland runoff. It is the first stage in water erosion. As flow becomes more concentrated rills occur. As soil detachment continues or flow increases, rills will become wider and deeper forming gullies.

Stone Tracking Pad and Tire Washing
(1057)

Wisconsin Department of Natural Resources
Conservation Practice Standard

I. Definition

A stabilized pad of stone aggregate or tire washing station located at any point where traffic will egress a construction site.

II. Purpose

The purpose of this standard is to reduce off-site sedimentation by eliminating the tracking of sediment from construction sites.

III. Conditions Where Practice Applies

Either a stone tracking pad or tire washing station shall be used at all points of construction egress. This standard applies where construction traffic is likely to transport sediment off site.

IV. Federal, State, and Local Laws

Users of this standard shall be aware of applicable federal, state, and local laws, rules, regulations, or permit requirements governing the use and placement of this practice. This standard does not contain the text of federal, state, or local laws.

V. Criteria

This section establishes the minimum standards for design, installation and performance requirements.

A. Tracking Pad:

1. The tracking pad shall be installed prior to any traffic leaving the site

2. The aggregate for tracking pads shall be 3 to 6 inch clear or washed stone. All material to be retained on a 3-inch sieve.

3. The aggregate shall be placed in a layer at least 12 inches thick. On sites with a high water table, or where saturated conditions are expected during the life of the practice, stone tracking pads shall be underlain with a WisDOT Type R geotextile fabric to prevent migration of underlying soil into the stone.

4. The tracking pad shall be the full width of the egress point. The tracking pad shall be at a minimum 50 feet long.

5. Surface water must be prevented from passing through the tracking pad. Flows shall be diverted away from tracking pads or conveyed under and around them by using a variety of practices, such as culverts, *water bars*[1], or other similar practices.

B. Tire washing: If conditions on the site are such that the sediment is not removed from vehicle tires by the tracking pad, then tires shall be washed utilizing pressurized water before entering a public road.

1. The washing station shall be located on-site in an area that is stabilized and drains into suitable sediment trapping or settling device.

2. The wash rack shall consist of a heavy grating over a lowered area. The rack shall be strong enough to support the vehicles that will cross it.

C. Rocks lodged between the tires of dual wheel vehicles shall be removed prior to leaving the construction site.

[1] Words in the standard that are shown in italics are described in IX. Definitions. The words are italicized the first time they are used in the text.

VI. Considerations

A. Vehicles traveling across the tracking pad should maintain a slow constant speed.

B. The best approach to preventing off-site tracking is to restrict vehicles to stabilized areas.

C. It is always preferable to prevent sediment from being deposited upon the road than cleaning the road later. Sediment on a road can create a safety hazard as well as a pollution problem.

D. Any sediment tracked onto a public or private road should be removed by street cleaning, not flushing, before the end of each working day.

VII. Plans and Specifications

A. Plans and specifications for installing tracking pads shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose. The plans and specifications shall address the following:

   1. Location of all points of egress with tracking pad locations shown

   2. Material specifications conforming to standard

   3. Schedule for installation and removal

   4. Standard drawings and installation details

   5. Stabilization after removal

B. All plans, standard detail drawings, or specifications shall include schedule for installation, inspection, and maintenance. The responsible party shall be identified.

VIII. Operation and Maintenance

A. Tracking pads and tire washing stations shall, at a minimum, be inspected weekly and within 24 hours after every precipitation event that produces 0.5 inches of rain or more during a 24-hour period.

B. The tracking pad performance shall be maintained by scraping or top-dressing with additional aggregate.

C. A minimum 12-inch thick pad shall be maintained.

IX. Definitions

Water bar (V.A.5): A shallow trench or diversion dam that diverts surface water runoff into a dispersion area.

Silt Curtain
(1070)

Wisconsin Department of Natural Resources
Conservation Practice Standard

I. Definition

A temporary permeable fabric installed in a waterway or waterbody to minimize sediment transport. A silt curtain does not extend to the bottom of the channel and is placed parallel or perpendicular to the direction of flow.

II. Purposes

The purpose of this practice is to provide sediment containment while construction activities are occurring in or directly adjacent to a waterway or waterbody.

III. Conditions Where Practice Applies

This practice applies where construction activities intrude or are directly adjacent to a waterway or waterbody. This includes but is not limited to bridge construction, rip rap placement, utility work, streambank restoration, boat launches and dredging.

Silt curtain is intended for calm water conditions where it will not be subjected to wind, wave, or current. Silt curtains are appropriate to settle out coarse and granular soils where water depth at the time of construction is greater than or equal to 4 feet. For applications in finer sediment or moving water see WDNR Technical Standard 1069 Turbidity Barrier.

IV. Federal, State, and Local Laws

Users of this standard shall be aware of applicable federal, state, and local laws, rules, regulations, or permit requirements governing the use and placement of silt curtains. This standard does not contain the text of federal, state, or local laws.

V. Criteria

This section establishes the minimum standards for design, installation and performance requirements.

A. **Installation** – Details of construction not listed in the text shall conform to the pertinent requirements of Figure 1.

1. The silt curtain shall be installed before construction activities are initiated in or adjacent to the waterway or waterbody. Install the silt curtain as close to the construction as practical. The curtain shall remain in place and be maintained until the construction activity is completed and the disturbed area is *stabilized* [1].

2. The ends of the silt curtain shall be securely anchored and keyed into the shoreline to fully enclose the area where sediment may enter the water.

3. A 2-foot gap shall exist between the weighted lower end of the curtain and the bottom of the waterway or waterbody.

4. Bottom anchors shall be used to hold the silt curtain in the same position relative to the bottom the waterway or waterbody without interfering with the function of the curtain. Anchors shall either be driven into the bottom of the waterway or waterbody or be weighted and attached to the curtain floatation device via an anchor line. Manufacture's recommendations shall be followed for the number and spacing of anchors.

5. Danger buoys shall be used as directed by the Coast Guard or DNR permit when working in navigable waters.

B. **Material:**

1. Reusable components of the silt curtain system shall be clean and free of potential exotic species. Fabric cannot be reused.

2. The silt curtain shall be constructed from heavy woven filter fabric to allow water to pass through the barrier yet retain sediment.

[1] Words in the standard that are shown in italics are described in X. Definitions. The words are italicized the first time they are used in the text.

All fabric seams shall be heat sealed or sewn. Silt curtain fabric shall conform to the specifications in Table 1.

Table 1

Requirement	Value
Thickness	15 mils (0.38 mm)
Min. grab tensile strength (ASTM D 4632)	120 lb (550 N)
Min. equivalent opening	No. 170 sieve (90 µm)

3. Floatation devices shall be flexible, buoyant units contained in an individual floatation sleeve or collar attached to the curtain. Use expanded polystyrene logs or equivalent having a 49 square inch minimum end area. Do not use polystyrene beads or chips. Buoyancy provided by the floatation device shall be sufficient to support the weight of the curtain and maintain a freeboard of at least 3 inches above the water surface level.

4. Top load lines shall consist of 5/16 inch steel cable.

5. Bottom load lines shall consist of a minimum ¼-inch steel chain incorporated into the bottom hem of the curtain. Larger chain sizes may be used where additional weight to serve as ballast to hold the curtain in a vertical position is required.

VI. Considerations

A. Sediment that has settled out by the silt curtain should only be removed as directed by the regulatory authority because re-suspension of sediment will likely occur during the removal process. Use of polymers may help prevent resuspension of sediment. See WDNR Technical Standard 1051 Sediment Control Water Application of Polymers for further guidance.

B. Silt curtains are meant to manage sediment in the waterbody. The best way to prevent sediment from entering the waterbody is through the implementation of effective upland erosion control, stopping sediment transport at its source.

VII. Plans and Specifications

Plans and specifications for installing a silt curtain shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose:

A. Location of silt curtain.

B. Material specification conforming to standard.

C. All plans, standard detail drawings, or specifications shall include schedule for installation, inspection, and maintenance. The responsible party shall be identified.

VIII. Operation and Maintenance

A. Silt curtains shall be inspected daily and repaired if necessary.

B. Regardless of upland stabilization conditions silt curtains shall not be removed until the water behind the curtain has equal or greater clarity than the waterway or waterbody. Soil particles shall be allowed to settle for a minimum of 24 hours prior to removal of the curtain.

C. Care shall be taken when removing the silt curtain to minimize the release or re-suspension of accumulated sediment.

D. To prevent the spread of exotic species silt curtains shall not be reused on other sites. Bouys and chains can be reused but shall be either disinfected with vinegar or cleaned with hot water greater than 104 deg. F then allowed to completely dry for a minimum period of five days. If there are any questions about the occurrence of zebra mussels, Eurasian water-milfoil, or other aquatic invasive species in a waterbody that you are working in or intend to work in contact your local DNR staff.

IX. References

Virginia Erosion and Sediment Control Handbook, Third Edition, 1992

WisDOT Facilities Development Manual: Chapter 10, Section 10, Subject 43, Silt Screen

X. Definitions

Stabilized (V.A.1): Means that all land disturbing construction activities at the construction site have been completed, and that a uniform perennial vegetative cover has been established with a density of at least 70% of the cover for the unpaved areas and areas not covered by permanent structures, or that employ equivalent stabilization measures.

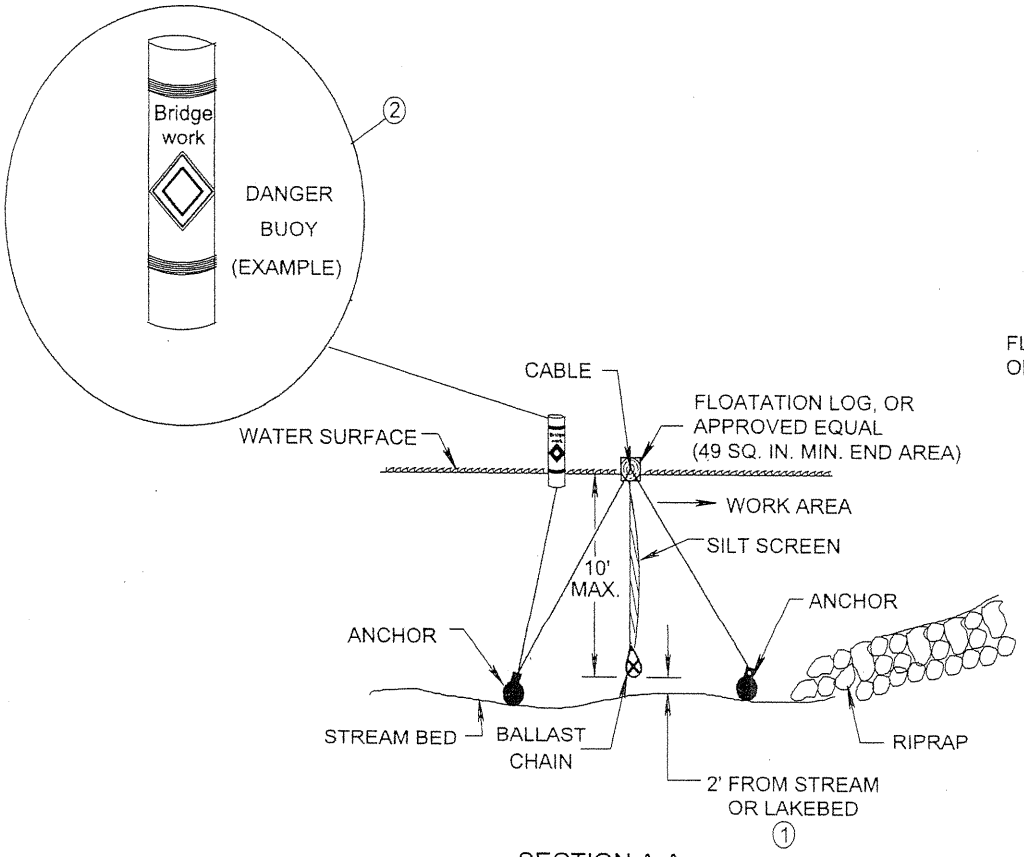
NOT TO SCALE

GENERAL NOTES

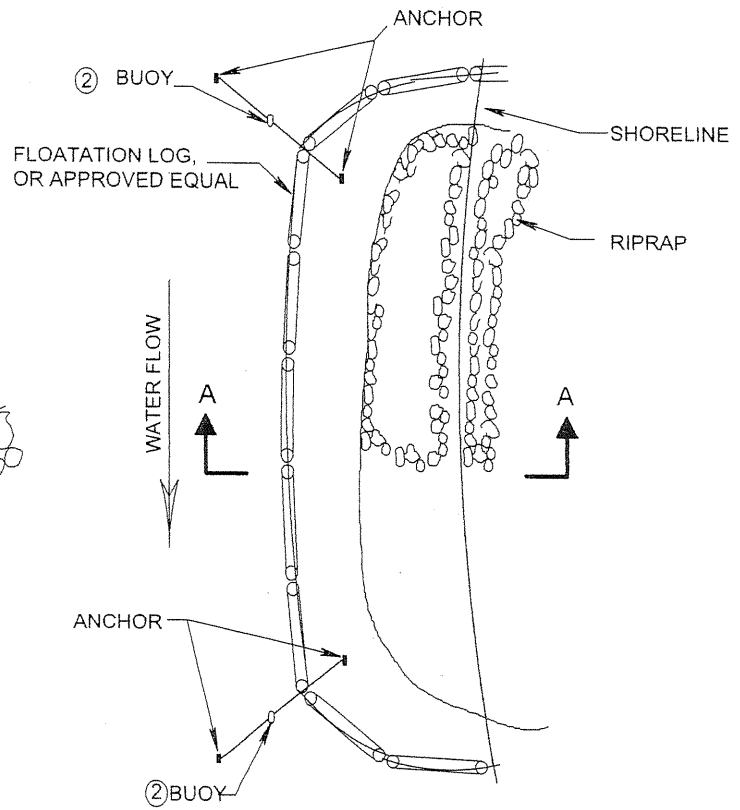
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD AND THE APPLICABLE SPECIAL PROVISIONS

① 2' SHALL BE MAINTAINED DURING CONSTRUCTION PERIOD

② USE AS DIRECTED BY COAST GUARD OR WDNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS



SECTION A-A



PLAN VIEW

FIGURE 1. SILT CURTAIN PLACEMENT DETAIL

This drawing based on Wisconsin Deptartment of Transportation Standard Detail Drawing 8 E 12-1.