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# City of Plymouth

## Contract Documents

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Plymouth Creek Streambank Restoration Project  
City Project 16007  
August 2017



**CONTRACT DOCUMENTS**

**PLYMOUTH CREEK STREAMBANK RESTORATION PROJECT**

**PLYMOUTH, MINNESOTA**

**CITY PROJECT NO. 16007**

**August 2017**

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



Ed Matthiesen, P.E.

16800

Minn. Reg. No.

08/22/2017

Date



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## **ADVERTISEMENT FOR BIDS**

### **PLYMOUTH CREEK STREAMBANK RESTORATION PROJECT**

#### **PLYMOUTH, MINNESOTA CITY PROJECT NO. 16007**

NOTICE IS HEREBY GIVEN that sealed bids will be received by the City of Plymouth until Friday, October 6, 2017 at 12:00 p.m., at the Plymouth City Hall at 3400 Plymouth Boulevard, Plymouth, MN, at which time they will be publicly opened and read aloud, for the furnishing of all labor and material for the construction of stream bank restoration consisting of, in general, the following items:

1	L.S.	Tree Clearing & Harvesting for Reuse
1	L.S.	Chip Onsite and Spread Woodchips
3,385	SY	Woven Erosion Control Blanket, Rolanka BioD-Mat 40
4,935	SY	Non-Woven Erosion Control Blanket, Category 3, Type Straw 2S (No Poly Netting)
1,600	LBS	Hydraulic Matrix, Type Mulch
54	EACH	Footer Logs & Cross Vanes
54	EACH	Root Wads
43,000	L.F.	Sediment Control Log Type Straw
770	TON	Class II Riprap – Vegetated Riprap Toe, Rock Check Dam & Swales
200	TON	Class III Riprap – Channel Overflow Swale & Plunge Pool
65	TON	Class IV Riprap – Vegetated Riprap Toe
240	TON	24" to 36" Fieldstone Boulders
2,120	SY	MN DOT Type V, Woven Geotextile Fabric
200	C.Y.	Common Excavation – On-site
8	EACH	Granite Charcoal Stepper
68	EACH	Trap Rock Step
335	L.F.	Timber Edged Path
155	L.F.	Boardwalk
620	EACH	Shrub Planting
1	L.S.	2 Year Vegetation Establishment & Maintenance

Together with erosion control, dewatering, restoration, and other related appurtenances.

Bids shall be on the forms provided for that purpose and according to the Contract Documents dated August 22, 2017.

Bid Forms and Contract Documents may be viewed at the City's Engineering Department counter located in the lower level of City Hall and the Maple Plain office of Wenck Associates, Inc.

Complete digital Proposal Forms, Plans, and Specifications for use by contractors submitting a bid are available at [www.questcdn.com](http://www.questcdn.com). You may download the digital plan documents for \$20.00 by inputting Quest project #5370825 on the website's Project Search page. Please contact QuestCDN.com at 952-233-1632 or [info@questcdn.com](mailto:info@questcdn.com) for assistance in free membership registration, downloading, and working with this digital project information. Alternatively, contractors desiring a copy of the Bid Forms and Contract Documents may obtain them from the City of Plymouth's Engineering Department web site at the following link:  
<http://www.plymouthmn.gov/bids>

Contractors desiring a paper copy of the Bid Forms and Contract Documents may obtain them from the Wenck Associates, Inc. in accordance with the Instructions to Bidders upon non-refundable deposit of \$50.00 check per set payable to "Wenck Associates, Inc." at:

Wenck Associates, Inc.  
1800 Pioneer Creek Center  
P.O. Box 249  
Maple Plain, MN 55359-0249  
Telephone: (763) 479-4200  
Facsimile: (763) 479-4242



Direct inquiries to Engineer's Project Designer Lucius Jonett at (763) 479-4254.

Bid Security in the amount of 5% of the bid must accompany each bid in accordance with the Instructions to Bidders.

Bids shall be directed to the Director of Public Works, securely sealed and endorsed upon the outside wrapper, "BID PROPOSAL FOR PLYMOUTH CREEK STREAMBANK RESTORATION, CITY PROJECT NO. 16007, CITY OF PLYMOUTH"

A Pre-bid meeting is scheduled at the Plymouth Creek Streambank Restoration Project, City Project No. 16007 site (Plymouth Creek Playfield Park, 3625 Fernbrook Lane N., Plymouth, MN 55446, meet in the west parking lot near the frisbee disc golf course) at 1 p.m. Friday, September 29, 2017. Attendance not required.

The City of Plymouth reserves the right to reject any or all bids, to waive irregularities and informalities therein and to award the contract in the best interests of the City.

DATED: August 22, 2017



## **INSTRUCTIONS TO BIDDERS**

### **1. DEFINED TERMS**

Terms used in these Instructions to BIDDERS which are defined in the Standard General Conditions of the Construction Contract (No. C-700, 2013 Edition) have the meanings assigned to them in the General Conditions. The term "BIDDER" means one who submits a Bid directly to OWNER, as distinct from a sub bidder, who submits a Bid to a BIDDER. The term "Successful BIDDER" means the lowest, qualified responsible and responsive BIDDER to whom OWNER (on the basis of OWNER'S evaluation as hereinafter provided) makes an award. The term, "Bidding Documents" includes the Advertisement or Invitation to Bid, Instructions to BIDDERS, the Bid Form, and the proposed Contract Documents (including all Addenda issued prior to receipt of Bids).

### **2. COPIES OF BIDDING DOCUMENTS**

- 2.1 Contractors desiring a copy of the Bid Forms and Contract Documents may obtain them from the City of Plymouth's Engineering Department web site at the following link:  
<http://www.plymouthmn.gov/bids>
- 2.2 Complete sets of Bidding Documents must be used in preparing Bids; neither OWNER nor ENGINEER assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- 2.3 OWNER and ENGINEER in making copies of Bidding Documents available on the above terms do so only for the purpose of obtaining Bids on the Work and do not confer a license or grant for any other use.

### **3. EXAMINATION OF CONTRACT DOCUMENTS AND SITE**

- 3.1 It is the responsibility of each BIDDER before submitting a Bid, to (a) examine the Contract Documents thoroughly, (b) visit the site to become familiar with local conditions that may affect cost, progress, performance or furnishing of the Work, (c) consider federal, state and local Laws and Regulations that may affect cost, progress, performance or furnishing of the Work, (d) study and carefully correlate BIDDER'S observations with the Contract Documents, and (e) notify ENGINEER in writing of all conflicts, errors or discrepancies in the Contract Documents.
- 3.2 Reference is made to the Supplementary Conditions for identification of:
  - 3.2.1 Those reports of explorations and tests of subsurface conditions at the site which have been utilized by ENGINEER in preparation of the Contract Documents. BIDDER may rely upon the accuracy of the technical data contained in such reports but not upon non-technical data, interpretations or opinions contained therein or for the completeness thereof for the purposes of bidding or construction.
  - 3.2.2 Those drawings of physical conditions in or relating to existing surface and subsurface conditions (except Underground Facilities) which are at or contiguous to the site which have been utilized by ENGINEER in preparation of the Contract Documents. BIDDER may rely upon the accuracy of the technical data contained in such drawings but not upon the completeness thereof for the purposes of bidding or construction.



Copies of such reports and drawings will be made available by OWNER to any BIDDER on request. Those reports and drawings are not part of the Contract Documents, but the technical data contained therein upon which BIDDER is entitled to rely as provided in Paragraphs 3.2.1 and 3.2.2 are incorporated therein by reference. Such technical data has been identified and established in the Supplementary Conditions.

- 3.3 Information and data reflected in the Contract Documents with respect to Underground Facilities at or contiguous to the site is based upon information and data furnished to OWNER and ENGINEER by OWNERS of such Underground Facilities or others, and OWNER does not assume responsibility for the accuracy or completeness thereof unless it is expressly provided otherwise in the Supplementary Conditions.
- 3.4 Provisions concerning responsibilities for the adequacy of data furnished to prospective BIDDERS on subsurface conditions, Underground Facilities and other physical conditions, and possible changes in the Contract Documents due to differing conditions appear in Paragraphs 4.2 and 4.3 of the General Conditions.
- 3.5 Before submitting a Bid, each BIDDER will, at BIDDER'S own expense, make or obtain any additional examinations, investigations, explorations, tests and studies and obtain any additional information and data which pertain to the physical conditions (surface, subsurface and Underground Facilities) at or contiguous to the site or otherwise which may affect cost, progress, performance or furnishing of the Work and which BIDDER deems necessary to determine its Bid for performing and furnishing the Work in accordance with the time, price and other terms and conditions of the Contract.
- 3.6 On request in advance, OWNER will provide each BIDDER access to the site to conduct such explorations and tests as each BIDDER deems necessary for submission of a Bid. BIDDER shall fill all holes, clean up and restore the site to its former condition upon completion of such explorations.
- 3.7 The lands upon which the Work is to be performed, rights-of-way and easements for access thereto and other lands designated for use by CONTRACTOR in performing the Work are identified in the Contract Documents. All additional lands and access thereto required for temporary construction facilities or storage of materials and equipment are to be provided by CONTRACTOR. Easements for permanent structures or permanent changes in existing structures are to be obtained and paid for by OWNER unless otherwise provided in the Contract Documents.
- 3.8 The submission of a Bid will constitute an incontrovertible representation by BIDDER that BIDDER has complied with every requirement of this Article 3, that without exception the Bid is premised upon performing and furnishing the Work required by the Contract Documents and such means, methods, techniques, sequences or procedures of construction as may be indicated in or required by the Contract Documents, and that the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

#### **4. INTERPRETATIONS AND ADDENDA**

- 4.1 All questions about the meaning or intent of the Contract Documents are to be made in writing, and directed to ENGINEER. Interpretations or clarifications considered necessary by ENGINEER in response to such questions will be issued with an Addenda by email, fax or mailed or to all parties recorded by ENGINEER as having received the Bidding Documents. Questions received less than two days prior to the date for opening of Bids



may not be answered. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

- 4.2 Addenda may also be issued to modify the Bidding Documents as deemed advisable by OWNER or ENGINEER.

## **5. BID SECURITY**

- 5.1 Each Bid must be accompanied by Bid security made payable to OWNER in an amount of five percent of the BIDDER'S maximum Bid price and in the form of a certified or bank check or a Bid Bond (on form attached, if a form is prescribed) issued by a surety meeting the requirements of Paragraph 5.1 of the General Conditions.
- 5.2 The Bid security of the Successful BIDDER will be retained until such BIDDER has executed the Agreement and furnished the required contract security, whereupon the Bid security will be returned. If the Successful BIDDER fails to execute and deliver the Agreement and furnish the required contract security within fifteen days after the Notice of Award, OWNER may annul the Notice of Award and the Bid security of that BIDDER will be forfeited. The Bid security of the three lowest BIDDERS may be retained by the OWNER until the Agreement is signed and submitted with the bonds as set forth in Paragraph 2 of the Bid Form. Bid security of other BIDDERS will be returned within seven days after award of the contract.

## **6. CONTRACT TIME**

The number of days within which, or the dates by which, the Work is to be substantially completed and also completed and ready for final payment (the Contract Time) are set forth in the Bid Form and the Agreement.

## **7. LIQUIDATED DAMAGES**

Provisions for liquidated damages are set forth in the Agreement.

## **8. SUBSTITUTE OR "OR-EQUAL" ITEMS**

The Contract, if awarded, will be on the basis of materials and equipment described in the Drawings or specified in the Specifications without consideration of possible substitute or "or-equal" items. Whenever it is indicated in the Drawings or specified in the Specifications that a substitute or "or-equal" item of material or equipment may be furnished or used by CONTRACTOR if acceptable to ENGINEER, application for such acceptance will not be considered by ENGINEER until after the Effective Date of the Agreement. The procedure for submissions of any such application by CONTRACTOR and considerations by ENGINEER is set forth in Paragraphs 6.7.1, 6.7.2 and 6.7.3 of the General Conditions and may be supplemented in the General Requirements.

## **9. SUBCONTRACTORS, SUPPLIERS AND OTHERS**

- 9.1 No CONTRACTOR shall be required to employ any Subcontractor, Supplier, other person or organization against whom CONTRACTOR has reasonable objection.

## **10. BID FORM**

- 10.1 The Bid Form is included with the Bidding Documents; additional copies may be obtained from ENGINEER.



- 10.2 All blanks on the Bid Form must be completed in ink or by typewriter.
- 10.3 Bids by corporations must be executed in the corporate name by the president or a vice-president (or other corporate officer accompanied by evidence of authority to sign) and the corporate seal must be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation must be shown below the signature.
- 10.4 Bids by partnerships must be executed in the partnership name and signed by a partner, whose title must appear under the signature and the official address of the partnership must be shown below the signature.
- 10.5 All names must be typed or printed in ink below the signature.
- 10.6 The Bid shall contain an acknowledgment of receipt of all Addenda (the numbers of which must be filled in on the Bid Form).
- 10.7 The address and telephone number for communications regarding the Bid must be shown.
- 10.8 This project's BID FORM contains two sections; SCHEDULE A & SCHEDULE B. Schedule A and Schedule B are required to be an acceptable bid for the project. Bids will be evaluated by the OWNER based on a combination of Schedule A & B.

## **11. SUBMISSION OF BIDS**

Bids shall be submitted at the time and place indicated in the Advertisement or Invitation to Bid and shall be enclosed in an opaque sealed envelope, marked with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted) and name and address of the BIDDER and accompanied by the Bid security and other required documents. If the Bid is sent through the mail or other delivery system, the sealed envelope shall be enclosed in a separate envelope with the notation "BID ENCLOSED" on the face of it.

## **12. MODIFICATION AND WITHDRAWAL OF BIDS**

- 12.1 Bids may be modified or withdrawn by an appropriate document duly executed (in the manner that a Bid must be executed) and delivered to the place where Bids are to be submitted at any time prior to the opening of Bids.
- 12.2 If, within twenty-four hours after Bids are opened, any BIDDER files a duly signed, written notice with OWNER and promptly thereafter demonstrates to the reasonable satisfaction of OWNER that there was a material and substantial mistake in the preparation of its Bid, that BIDDER may withdraw its Bid and the Bid security will be returned. Thereafter, that BIDDER will be disqualified from further bidding on the Work to be provided under the Contract Documents.

## **13. OPENING OF BIDS**

Bids will be opened and (unless obviously non-responsive) read aloud publicly. An abstract of the amounts of the Bids will be made available to BIDDERS after the opening of Bids.

## **14. BIDS TO REMAIN SUBJECT TO ACCEPTANCE**

All bids will remain subject to acceptance as set forth in Paragraph 2 of the Bid Form, but OWNER may, in its sole discretion, release any Bid and return the Bid security prior to that date.



## 15. RESPONSIBLE BIDDER EVALUATION

The City will review the qualifications and experience of bidders for construction, alteration, repair, or maintenance of real or personal property after bids are opened and before a contract is awarded, to determine if the bidder is "responsible." A "responsible" bidder is a bidder qualified to do the work. This will be determined by assessing the bidder's skill, resources, experience, successful performance of similar contracts (on time and on budget), and all other matters bearing upon the likelihood that the contract will be successfully completed. In all cases where a bidder is unknown or where there are any questions about the qualifications of the bidder, the following information will be required of the apparent low bidder:

You are required to complete and return this questionnaire before the City Council considers awarding you the contract.

- 15.1 Identify all similar public projects in which you were the contractor. If you have had more than five such contracts, list only the last five contracts, and as to each contract identified provide the following information:

Project Description:

Date:

Contact Person at City/County/State:

Were change orders in excess of 5% requested? If yes, explain the circumstances.

Were liquidated damages assessed? If yes, explain the circumstances.

Was the project completed on schedule? If no, explain the circumstances.

- 15.2 Describe all construction arbitration claims and any construction or project litigation in which you have been a party in the last five years.
- 15.3 Identify all public projects you have had with the City of Plymouth in the last five years.
- 15.4 In the last five years has a bonding company ever refused to issue you a performance bond? If yes, explain the circumstances.
- 15.5 In the last five years have any claims been filed against a performance or payment bond that you have provided a public entity? If yes, explain the circumstances.
- 15.6 In the last five years, has your firm or any of its owners or employees been fined by a federal or state agency for a contract or workplace matter (such as wage or hour or safety violations), or debarred under Part 29, Title 49 CFR or any other law from submitting bids on public projects? If yes, explain the circumstances.



- 15.7 In the last five years, has your firm or any of its owners or employees been charged or convicted of a crime involving the awarding, bidding or performance of a government contract? If yes, provide full details.

Contractor Verification of Compliance

The undersigned, being first duly sworn, as a responding contractor on the Project, represents and swears as follows:

Now, and at all times during the duration of the Project, the undersigned complies with each of the minimum criteria in Minn. Stat. § 16C.285, Subd. 3, the Responsible Contractor Statute.

The undersigned understands that a failure to meet or verify compliance with the minimum criteria established for a "responsible contractor" as defined in Minn. Stat. § 16C.285, Subd. 3, renders a bidder ineligible to be awarded a construction contract for the Project or to perform work on the Project.

Upon request, the undersigned will submit copies of the signed verifications of compliance from all subcontractors.

The undersigned understands that a false statement under oath verifying compliance with any of the minimum criteria shall make the undersigned, or its subcontractor that makes the false statement, ineligible to be awarded a constructed project and may result in termination of a contract awarded to the undersigned or its subcontractor that submits a false statement.

Certified as true and correct this \_\_\_\_\_ day of \_\_\_\_\_.

\_\_\_\_\_  
(name)

\_\_\_\_\_  
(name)

*Resolution No. 2015-016, January 13, 2015  
(Supersedes Resolution No. 2004-024, January 13, 2004)*



## **16. AWARD OF CONTRACT**

- 16.1 OWNER reserves the right to reject any and all Bids, to waive any and all informalities not involving price, time or changes in the Work and to negotiate contract terms with the Successful BIDDER, and the right to disregard all nonconforming, nonresponsive, unbalanced or conditional Bids. Also, OWNER reserves the right to reject the Bid of any BIDDER if OWNER believes that it would not be in the best interest of the Project to make an award to that BIDDER, whether because the Bid is not responsive or the BIDDER is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by OWNER. Discrepancies in the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.
- 16.2 In evaluating Bids, OWNER will consider the qualifications of the BIDDERS, whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices and other data, as may be requested in the Bid Form or prior to the Notice of Award.
- 16.3 OWNER may consider the qualifications and experience of Subcontractors, Suppliers, and other persons and organizations proposed for those portions of the Work as to which the identity of Subcontractors, Suppliers, and other persons and organizations must be submitted as provided in the Supplementary Conditions. OWNER also may consider the operating costs, maintenance requirements, performance data and guarantees of major items of materials and equipment proposed for incorporation in the Work when such data is required to be submitted prior to the Notice of Award.
- 16.4 OWNER may conduct such investigations as OWNER deems necessary to assist in the evaluation of any Bid and to establish the responsibility, qualifications and financial ability of BIDDERS, proposed Subcontractors, Suppliers and other persons and organizations to perform and furnish the Work in accordance with the Contract Documents to OWNER'S satisfaction within the prescribed time.
- 16.5 If the contract is to be awarded, it will be awarded to the lowest BIDDER whose evaluation by OWNER indicates to OWNER that the award will be in the best interests of the Project.
- 16.6 If the Contract is to be awarded, OWNER will give the Successful BIDDER a Notice of Award within five days after the day of the award.
- 16.7 OWNER reserves the right to determine the successful BIDDER based on a combination of the Base Bid and Alternate Bid. The OWNER will consider the best interest of the project in making this determination.

## **17. CONTRACT SECURITY**

Paragraph 6.01 of the General Conditions and the Supplementary Conditions set forth OWNER'S requirements as to Performance and Payment Bonds. When the Successful BIDDER delivers the executed Agreement to OWNER, it must be accompanied by the required performance and payment Bonds.

## **18. SIGNING OF AGREEMENT**

When OWNER gives a Notice of Award to the Successful BIDDER, it will be accompanied by the required number of unsigned counterparts of the Agreement with all other written Contract Documents attached. Within fifteen days thereafter CONTRACTOR shall sign and deliver the



required number of counterparts of the Agreement and attached documents to OWNER with the required Bonds. Within ten days thereafter OWNER shall deliver one fully signed counterpart to CONTRACTOR. Each counterpart is to be accompanied by a complete set of the Drawings with appropriate identification.



**BID FORM**

**PROJECT IDENTIFICATION:**                      **PLYMOUTH CREEK STREAMBANK RESTORATION  
PROJECT  
PLYMOUTH, MINNESOTA  
CITY PROJECT NO. 16007**

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<b>BIDS TO BE OPENED:</b>	<b>FRIDAY, OCTOBER 6, 2017</b>	<b>12:00 p.m.</b>
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**THIS BID IS SUBMITTED TO:**                      **CITY OF PLYMOUTH  
3400 PLYMOUTH BOULEVARD  
PLYMOUTH, MINNESOTA 55447**

**BID SUBMITTED BY:** \_\_\_\_\_

1.     The undersigned BIDDER proposes and agrees, if this Bid is accepted, to enter into an agreement with OWNER in the form included in the Contract Documents to perform and furnish all Work as specified or indicated in the Contract Documents for the Contract Price and within the Contract Time indicated in this Bid and in accordance with the other terms and conditions of the Contract Documents.
2.     BIDDER accepts all of the terms and conditions of the Advertisement for Bids and Instructions to BIDDERS, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for sixty (60) days after the day of Bid opening. BIDDER will sign and submit the Agreement with the Bonds and other documents required by the Bidding Requirements within fifteen days after the date of OWNER'S Notice of Award.
3.     In submitting this Bid, BIDDER represents, as more fully set forth in the Agreement, that:

- (a)     BIDDER has examined copies of all the Bidding Documents and of the following Addenda (receipt of all which is hereby acknowledged):

Date	Number
_____	_____
_____	_____

- (b)     BIDDER has familiarized itself with the nature and extent of the Contract Documents, Work, site, locality, and all local conditions and Laws and Regulations that in any manner may affect cost, progress, performance or furnishing of the Work.
    - (c)     BIDDER has studied carefully all reports and drawings of subsurface conditions and drawings of physical conditions which are identified in the Supplementary Conditions as provided in Paragraph 4.2 of the General Conditions, and accepts the determination set forth in Paragraph S.C. 4.2 of the Supplementary Conditions of the extent of the technical data contained in such reports and drawings upon which BIDDER is entitled to rely.
    - (d)     BIDDER has obtained and carefully studied (or assumes responsibility for obtaining and carefully studying) all such examinations, investigations, explorations, tests and studies (in addition to or to supplement those referred to in (c) above) which pertain to the subsurface or physical conditions at the site or otherwise may affect the cost, progress, performance



or furnishing of the Work as BIDDER considers necessary for the performance or furnishing of the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents, including specifically the provisions of Paragraph 4.2 of the General Conditions; and no additional examinations, investigations, explorations, tests, reports or similar information or data are or will be required by BIDDER for such purposes.

- (e) BIDDER has reviewed and checked all information and data shown or indicated on the Contract Documents with respect to existing Underground Facilities at or contiguous to the site and assumes responsibility for the accurate location of said Underground Facilities. No additional examinations, investigations, explorations, tests, reports or similar information or data in respect of said Underground Facilities are or will be required by BIDDER in order to perform and furnish the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents, including specifically the provisions of Paragraph 4.3 of the General Conditions.
- (f) BIDDER has correlated the results of all such observations, examinations, investigations, explorations, tests, reports and studies with the terms and conditions of the Contract Documents.
- (g) BIDDER has given ENGINEER written notice of all conflicts, errors or discrepancies that it has discovered in the Contract Documents and the written resolution thereof by ENGINEER is acceptable to BIDDER.
- (h) This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; BIDDER has not directly or indirectly induced or solicited any other BIDDER to submit a false or sham Bid; BIDDER has not solicited or induced any person, firm or corporation to refrain from bidding; and BIDDER has not sought by collusion to obtain for itself any advantage over any other BIDDER or over OWNER.
- (i) (Any other representation required by Laws and Regulations.)

4. BIDDER will complete the Work for the following prices:



## Schedule A

ITEM NO	ITEM	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL ESTIMATED COST
	<b>BASE BID - Reach 1 &amp; 2 2017/2018 Construction</b>				
1	Fall/Winter Mobilization and Demobilization	LS	1	\$	\$
2	Tree Clearing & Harvesting	LS	1	\$	\$
3	Chip Onsite and Spread Woodchips on Existing Trails & Course Greens	LS	1	\$	\$
4	Construct, Maintain, & Restore Site Access and Staging Areas	LS	1	\$	\$
5	Woven ECB, Rolanka BioD-Mat 40	SY	1255	\$	\$
6	Non-Woven ECB Cat 3 Type Straw 2S (No Poly Netting)	SY	2025	\$	\$
7	Footer Log & Log Vanes	EA	21	\$	\$
8	Root Wad	EA	17	\$	\$
9	Seating Log	EA	4	\$	\$
10	Silt Fence, Type MS - Maintained	LF	200	\$	\$
11	Flotation Silt Curtain Type Moving Water - Maintained	LF	25	\$	\$
12	Sediment Control Log Type Straw (Or Bioroll) - Maintained	LF	3000	\$	\$
13	Inlet Protection - Maintained	EA	2	\$	\$
14	Temporary Construction Entrance - Maintained	EA	2	\$	\$
15	Street Sweeper (With Pickup Broom)	HR	10	\$	\$
16	Temporary Sedimentation Basin - Maintained	LS	1	\$	\$
17	Class II Riprap, No Limestone (Veg Riprap Toe, Grade Control Structure, Swales & Brush Mattress)	TON	436	\$	\$
18	24" to 36" Fieldstone Boulders (Cross Vanes, Rootwads, Course Greens)	TON	130	\$	\$
19	MN DOT Type V, Non-Woven Geotextile Fabric	SY	1100	\$	\$
20	Brush Mattress	SY	30	\$	\$
21	CU Structural Soils	TON	70	\$	\$
22	Common Excavation - On-site (EV)	CY	200	\$	\$
23	Subgrade Preparation	SY	100	\$	\$
24	Granite Charcoal Stepper	EA	8	\$	\$
25	Trap Rock Step	EA	68	\$	\$
26	Aggregate Base CL 5	TON	50	\$	\$
27	Aggregate Base CL 2	TON	45	\$	\$
28	Grass Pave2	SY	100	\$	\$
29	Timber Edge Path	LF	335	\$	\$
30	Woodchip or Gravel, If not reusing from tree removal	CY	110	\$	\$
31	Boardwalk	LF	155	\$	\$



32	4" Drain Tile Pipe	LF	155	\$	\$
33	Seeding - Dormant	AC	0.25	\$	\$
34	Native Seed Mix	LB	5	\$	\$
35	Fescue Seed Mix	LB	200	\$	\$
36	Spring Mobilization and Demobilization	LS	1	\$	\$
37	Tree Planting	EA	2	\$	\$
38	Shrub Planting (#5 POT)	EA	560	\$	\$
39	Shrub Planting (#10 POT)	EA	60	\$	\$
40	Perennial Planting Enhancement of Seeded Areas	EA	432	\$	\$
41	Bare Root Shrubs	EA	240	\$	\$
42	Live stakes	EA	50	\$	\$
43	Seeding	AC	0.38	\$	\$
44	Native Seed Mix	LB	8	\$	\$
45	Fescue Seed Mix	LB	50	\$	\$
46	Hydraulic Matrix, Type Mulch	LB	760	\$	\$
47	Vegetation Establishment and Maintenance	LS	1	\$	\$
<b>Total Reach 1 &amp; 2 Base Bid</b>					<b>\$</b>

Total Written Amount for  
Reach 1 & 2 Base Bid \_\_\_\_\_



Schedule B

ITEM NO	ITEM	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL ESTIMATED COST
	<b>BASE BID - Reach 3 2017/2018 Construction</b>				
49	Fall/Winter Mobilization and Demobilization	LS	1	\$	\$
50	Tree Clearing & Harvesting	LS	1	\$	\$
51	Haul and Dispose Offsite All Unchipped Wood	LS	1	\$	\$
52	Remove and Dispose of 12" RCP Flared End Section	EA	1	\$	\$
53	Remove 12" RCP Pipe	LF	40	\$	\$
54	Furnish and Install 12" RCP Flared End Section	EA	1	\$	\$
55	New Tie Rod Installation	LS	1	\$	\$
56	Construct, Maintain, & Restore Site Access and Staging Areas	LS	1	\$	\$
57	Woven ECB, Rolanka BioD-Mat 40	SY	2130	\$	\$
58	Non-Woven ECB Cat 3 Type Straw 2S (No Poly Netting)	SY	2910	\$	\$
59	Footer Log & Log Vanes	EA	33	\$	\$
60	Root Wad	EA	37	\$	\$
61	Silt Fence, Type MS - Maintained	LF	200	\$	\$
62	Flotation Silt Curtain Type Moving Water - Maintained	LF	25	\$	\$
63	Sediment Control Log Type Straw (Or Bioroll) - Maintained	LF	1000	\$	\$
64	Inlet Protection - Maintained	EA	3	\$	\$
65	Temporary Construction Entrance - Maintained	EA	2	\$	\$
66	Street Sweeper (With Pickup Broom)	HR	10	\$	\$
67	Temporary Sedimentation Basin - Maintained	LS	1	\$	\$
68	Class II Riprap, No Limestone (Veg Riprap Toe, Grade Control Structure, Swales & Brush Mattress)	TON	334	\$	\$
69	Class III Riprap, No Limestone (Channel Overflow & Plunge Pools)	TON	200	\$	\$
70	Class IV Riprap, No Limestone (Downstream of Fernbrook)	TON	65	\$	\$
71	24" to 36" Fieldstone Boulders (Cross Vanes, Rootwads, Course Greens)	TON	110	\$	\$
72	MN DOT Type V, Non-Woven Geotextile Fabric	SY	1020	\$	\$
73	Seeding - Dormant	AC	0.44	\$	\$
74	Native Seed Mix	LB	10	\$	\$
75	Fescue Seed Mix	LB	75	\$	\$
76	Spring Mobilization and Demobilization	LS	1	\$	\$
77	Seeding	AC	0.42	\$	\$
78	Native Seed Mix	LB	9	\$	\$
79	Fescue Seed Mix	LB	75	\$	\$



80	Hydraulic Matrix, Type Mulch	LB	840	\$	\$
81	Vegetation Establishment and Maintenance	LS	1	\$	\$
<b>Total Reach 3 Base Bid</b>					<b>\$</b>

Total Written Amount for  
Reach 3 Base Bid \_\_\_\_\_

Total Written Amount for  
all Base Bids \_\_\_\_\_

Quantities are not guaranteed. Final payment will be based on actual quantities.

5. BIDDER agrees that the Work will be substantially complete and completed and ready for final payment in accordance with Paragraph 14.07.B.1 of the General Conditions on or before the dates indicated in the Agreement.

BIDDER accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work on time.

6. The following documents are attached to and made a condition of this BID:

- (a) Required Bid Security in the form of (Bidder's Bond) (Certified Check).
- (b) A tabulation of Subcontractors, Suppliers and other persons and organizations required to be identified in this Bid.
- (c) Affidavit of Non-Collusion.
- (d) (Add other documents as pertinent).

7. Communications concerning this Bid shall be addressed to the address of BIDDER indicated below.

8. The terms used in this Bid which are defined in the General Conditions of the Construction Contract included as part of the Contract Documents have the meanings assigned to them in the General Conditions.

SUBMITTED on \_\_\_\_\_, **2017**.



### *An Individual*

### *An Individual*

By \_\_\_\_\_ (Individual's Name) (SEAL)

doing business as \_\_\_\_\_

Phone No: \_\_\_\_\_

### *A Partnership*

By \_\_\_\_\_ (Firm Name) (SEAL)

(General Partner)

Business Address: \_\_\_\_\_

Phone No: \_\_\_\_\_

*A Corporation*

By \_\_\_\_\_  
(Corporation Name)

(State of Incorporation)

By \_\_\_\_\_  
(Name of Person Authorized to Sign)

(Title)

(Corporate Seal)

Attest \_\_\_\_\_  
(Secretary)

Business Address: \_\_\_\_\_

Phone No: \_\_\_\_\_

*A Joint Venture*



By \_\_\_\_\_  
(Name)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(Phone Number)

By \_\_\_\_\_  
(Name)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(Phone Number)

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

STATE OF \_\_\_\_\_

COUNTY OF \_\_\_\_\_



### AFFIDAVIT OF NON-COLLUSION

I hereby swear (or affirm) under the penalty of perjury:

- 1) That I am the BIDDER (if the BIDDER is an individual), a partner in the BIDDER (if the BIDDER is a partnership) or an officer or employee of the BIDDER corporation having authority to sign on its behalf (if the BIDDER is a corporation);
- 2) That the attached Bid or Bids have been arrived at by the BIDDER individually and have been submitted without collusion with, and without any agreement, understanding or planned common course of action with any other vendor of materials, supplies, equipment or services described in the invitation to Bid designed to limit individual bidding or competition;
- 3) That the contents of the Bid or Bids have not been communicated by the BIDDER or its employees or agents to any person not an employee or agent of the BIDDER or its surety on any bond furnished with the Bid or Bids, and will not be communicated to any such person, prior to any official opening of the Bid or Bids; and
- 4) That I have fully informed myself regarding the accuracy of the statements made in this affidavit.

Subscribed and sworn to before me \_\_\_\_\_  
(Bidder)

this \_\_\_\_ day of \_\_\_\_\_, 2017 \_\_\_\_\_  
(Firm making Bid or Bids)

\_\_\_\_\_  
OFFICIAL TITLE: \_\_\_\_\_



**EJCDC**  
**FORM OF AGREEMENT**  
**BETWEEN OWNER AND CONTRACTOR FOR**  
**CONSTRUCTION CONTRACT (STIPULATED PRICE)**

THIS AGREEMENT is dated as of the \_\_\_\_ day of \_\_\_\_\_ in the year 2017 by and between the **CITY OF PLYMOUTH, MINNESOTA** (hereinafter called OWNER) and \_\_\_\_\_ (hereinafter called CONTRACTOR).

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

**ARTICLE 1 - WORK**

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

**A. Bank stabilization, buffer establishment and park improvements in the Plymouth Creek Streambank Restoration Project.**

**ARTICLE 2 - THE PROJECT**

2.01 The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows:

**PLYMOUTH CREEK STREAMBANK RESTORATION PROJECT**  
**CITY OF PLYMOUTH, MINNESOTA**  
**CITY PROJECT NO. 16007**

**ARTICLE 3 - ENGINEER**

3.01 The Project has been designed by the City Engineering Department who is hereinafter called ENGINEER and who is to act as OWNER'S representative, assume all duties and responsibilities and have the rights and authority assigned to ENGINEER in the Contract Documents in connection with completion of the Work in accordance with the Contract Documents.

**ARTICLE 4 - CONTRACT TIMES**

4.01 Time of the Essence

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

4.02 Dates for beginning construction, Substantial Completion and Final Payment

A. Construction operations shall be started within 14 calendar days after the date of contract approval.

B. The Work will be substantially completed on or before June 15, 2018. Substantial completion includes all work including restoration. Final completion shall be completed by June 29, 2018.



#### 4.03 Liquidated Damages

- A. CONTRACTOR and OWNER recognize that time is of the essence of this Agreement and that OWNER will suffer financial loss if the Work is not completed within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by OWNER if the Work is not completed on time. Accordingly, instead of requiring any such proof, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty), CONTRACTOR shall pay OWNER THREE THOUSAND dollars (\$3000.00) for each day that expires after the time specified in Paragraph 4.02 for Substantial Completion until the Work is substantially complete. After Substantial Completion, if CONTRACTOR shall neglect, refuse, or fail to complete the remaining Work within the Contract Time or any proper extension thereof granted by OWNER, CONTRACTOR shall pay OWNER THREE THOUSAND dollars (\$3000.00) for each day that expires after the time specified in Paragraph 4.02 for completion and readiness for final payment until the Work is completed and ready for final payment.

#### **ARTICLE 5 - CONTRACT PRICE**

- 5.01 OWNER shall pay CONTRACTOR for completion of the Work in accordance with the Contract Documents an amount in current funds at the unit prices as shown on the attached CONTRACTOR'S Bid multiplied by the final quantities. As provided in Paragraph 11.03 of the [General Conditions](#), estimated quantities are not guaranteed and determination of actual quantities and classifications are to be made by the ENGINEER in accordance with Paragraph 9.07 of the General Conditions.

#### **ARTICLE 6 - PAYMENT PROCEDURES**

##### 6.01 Submittal and Processing of Payments

- A. CONTRACTOR shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by ENGINEER as provided in the General Conditions.

##### 6.02 Progress Payments; Retainage

- A. OWNER shall make progress payments on account of the Contract Price on the basis of CONTRACTOR'S Applications for Payment on or about the first day of each month during performance of the Work as provided in Paragraphs 6.02.A.1 and 6.02.A.2 below. All such payments will be measured by the schedule of values established as provided in Paragraph 2.07.A of the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in the General Requirements:
1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as ENGINEER may determine or OWNER may withhold, including but not limited to liquidated damages, in accordance with Paragraph 14.02 of the General Conditions:
    - a. 95% percent of work completed (with the balance being retainage). If the Work has been 50 percent completed as determined by ENGINEER, and if the character and progress of the Work have been satisfactory to OWNER and ENGINEER, OWNER, on recommendation of ENGINEER, may determine that as long as the character and progress of the Work remain satisfactory to them, there will be no additional retainage; and



- b. 95% percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).

#### 6.03 Final Payment

- A. Upon final completion and acceptance of the Work in accordance with Paragraph 14.07 of the General Conditions, OWNER shall pay the remainder of the Contract Price as recommended by ENGINEER as provided in said Paragraph 14.07.
- B. Form IC-134 required from Minn. Stat. § 290.92 requires that the City of Plymouth obtain Withholding Affidavit for Contractors, Form IC-134, before making final payment to contractors. This form needs to be submitted by the CONTRACTOR to the MN Department of Revenue for approval.

This form is used to receive certification from the state that the vendor has complied with the requirement to withhold and remit state withholding taxes for employee paid salaries.

#### 6.04 Prompt Payment To Subcontractors

- A. Pursuant to Minn. Stat. § 471.425, Subd. 4a, the CONTRACTOR must pay any subcontractor within ten (10) days of the CONTRACTOR'S receipt of payment from the City for undisputed services provided by the subcontractor. The CONTRACTOR must pay interest of 1½ percent per month or any part of a month to the subcontractor on any undisputed amount not paid on time to the subcontractor. The minimum monthly interest penalty payment for an unpaid balance of \$100.00 or more is \$10.00. For an unpaid balance of less than \$100.00, the CONTRACTOR shall pay the actual penalty due to the subcontractor.

### **ARTICLE 7 - INTEREST**

- 7.01 All moneys not paid when due as provided in Article 14 of the General Conditions shall bear interest at the maximum rate allowed by the law at the place of the Project.

### **ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS**

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

- A. CONTRACTOR has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.
- B. CONTRACTOR has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. CONTRACTOR is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. CONTRACTOR has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in Paragraph 4.02 of the General Conditions and (2) reports and drawings of a Hazardous Environmental Condition, if any, at the Site which has been identified in the Supplementary Conditions as provided in Paragraph 4.06 of the General Conditions.



- E. CONTRACTOR has obtained and carefully studied (or assumes responsibility for doing so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by CONTRACTOR, including any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents, and safety precautions and programs incident thereto.
- F. CONTRACTOR does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.
- G. CONTRACTOR is aware of the general nature of work to be performed by OWNER and others at the Site that relates to the Work as indicated in the Contract Documents.
- H. CONTRACTOR has correlated the information known to CONTRACTOR, information and observations obtained from visits to the Site, reports and drawings identified in the Contract Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Contract Documents.
- I. CONTRACTOR has given ENGINEER written notice of all conflicts, errors, ambiguities, or discrepancies that CONTRACTOR has discovered in the Contract Documents, and the written resolution thereof by ENGINEER is acceptable to CONTRACTOR.
- J. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

## **ARTICLE 9 - CONTRACT DOCUMENTS**

### **9.01 Contents**

- A. The Contract Documents consist of the following:
  - 1. This Agreement (pages 1 to 7, inclusive).
  - 2. Performance and other bonds, identified as exhibits A and consisting of 6 pages.
  - 3. Notice of Award.
  - 4. General Conditions (pages 1 to 62, inclusive).
  - 5. Supplementary Conditions (pages 1 to 8, inclusive).
  - 6. Specifications as listed in the table of contents of the Project Manual.
  - 7. Drawings consisting of a cover sheet and sheets numbered 1 through 23, inclusive with each sheet bearing the following general title: **PLYMOUTH CREEK STREAMBANK RESTORATION PROJECT, C.P. 16007.**
  - 8. Addenda (numbers \_\_\_\_\_ to \_\_\_\_\_, inclusive).
  - 9. Exhibits to this Agreement (enumerated as follows):
    - a. CONTRACTOR'S Bid (pages 1 to 9, inclusive).



- b. Documentation submitted by CONTRACTOR prior to Notice of Award (pages \_\_\_\_\_ to \_\_\_\_\_, inclusive).
  - c. Certificate of Insurance
- 10. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:
  - a. Written Amendments.
  - b. Work Change Directives.
  - c. Change Order(s).

- B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 9.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in Article 3 of the General Conditions.

## **ARTICLE 10 - MISCELLANEOUS**

### 10.01 Terms

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

### 10.02 Assignment of Contract

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

### 10.03 Successors and Assigns

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

### 10.04 Severability

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



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

This Agreement will be effective on \_\_\_\_\_, **2017**.

OWNER CITY OF PLYMOUTH CONTRACTOR \_\_\_\_\_

By \_\_\_\_\_ By \_\_\_\_\_

Title: MAYOR Title \_\_\_\_\_

By \_\_\_\_\_ By \_\_\_\_\_

Title: CITY MANAGER Title \_\_\_\_\_

(CORPORATE SEAL)

(CORPORATE SEAL)

Attest \_\_\_\_\_ Attest \_\_\_\_\_

Address for giving notices:

3400 Plymouth Boulevard

Plymouth, MN 55447

Address for giving notices:

\_\_\_\_\_

\_\_\_\_\_

(If OWNER is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of Agreement.)

License

No. \_\_\_\_\_

(If CONTRACTOR is a corporation, attach evidence of authority to sign.)

Agent for service of process \_\_\_\_\_

\_\_\_\_\_



**NOTICE TO PROCEED**  
**PLYMOUTH, MINNESOTA**  
**PLYMOUTH CREEK STREAMBANK RESTORATION PROJECT**  
**CITY PROJECT NO. 16007**

TO: \_\_\_\_\_

ADDRESS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

You are hereby notified to proceed with the Work on the above project. The Contract Times, as described in Article 4 of the Agreement, will commence to run on \_\_\_\_\_.

Prior to starting any work on the site, the following must be completed:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

GIVEN BY:

ACCEPTED BY:

\_\_\_\_\_  
CITY OF PLYMOUTH  
Owner

\_\_\_\_\_  
Contractor

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date



## CONTRACTOR'S PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, that \_\_\_\_\_ as Principal, hereinafter called CONTRACTOR, and \_\_\_\_\_ as Surety, hereinafter called Surety, are held and firmly bound onto the City of Plymouth as Obligee, hereinafter called OWNER, in the amount of \_\_\_\_\_ Dollars (written), (\$ \_\_\_\_\_), for the payment whereof CONTRACTOR and Surety bind themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally firmly by these presents.

WHEREAS,

CONTRACTOR has by written Agreement dated \_\_\_\_\_, **2017**, entered into a Contract with OWNER for construction of the Plymouth Creek Streambank Restoration Project No. 16007 in accordance with Contract Documents prepared by The City's Engineering Department which Contract is by reference made a part hereof, and is hereinafter referred to as the Agreement.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if CONTRACTOR shall promptly and faithfully perform said Agreement, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

The Surety hereby waives notice of any alteration or extension of time by OWNER.

Whenever CONTRACTOR shall be, and declared by OWNER to be, in default under the Agreement, the OWNER, having performed OWNER'S obligations there under, the Surety may promptly remedy the default, or shall promptly:

1. Complete the contract in accordance with its terms and conditions, or
2. Obtain a Bid or Bids for completing the Contract in accordance with its terms and conditions, and upon determination by Surety of the lowest responsible Bidder, or if OWNER elects, upon determination by OWNER and the Surety jointly of the lowest responsible Bidder, arrange for a Contract between such Bidder and OWNER, and make available as Work progresses (even though there should be a default or a succession of defaults under the Contract or Contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the Contract Price," but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "balance of the Contract Price", as used in this paragraph, shall mean the total amount payable by OWNER to CONTRACTOR under the Contract and any amendments thereto, less the amount properly paid by the OWNER to CONTRACTOR.

No right of action shall accrue on this bond to or for the use of any person or corporation other than OWNER named herein or the heirs, executors, administrators or successors of OWNER.

IN WITNESS WHEREFORE, the above-bounded parties have executed this instrument in \_\_\_\_\_ original counterparts, under their several seals this day of \_\_\_\_\_, **2017**, the names 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.

(Affix Corporate Seal)

\_\_\_\_\_  
(Contractor)



Attest: \_\_\_\_\_  
(Business Address)

\_\_\_\_\_  
(Title) By: \_\_\_\_\_  
(Title)

(Affix Corporate Seal) \_\_\_\_\_  
(Surety)

Attest: \_\_\_\_\_  
(Business Address)

\_\_\_\_\_  
(Attorney in Fact)



**CERTIFICATE OF ACKNOWLEDGMENT BY PRINCIPAL**

(For use where Contractor is Individual or Partnership)

STATE OF MINNESOTA \_\_\_\_\_)  
COUNTY OF \_\_\_\_\_)SS

On this \_\_\_\_\_ day of \_\_\_\_\_, **2017**, before me personally appeared \_\_\_\_\_, to me known to be the person \_\_\_\_\_ described in and who executed the foregoing conditions, and acknowledged that he/she \_\_\_\_\_ executed the same as \_\_\_\_\_ free act and deed.

\_\_\_\_\_  
Notary Public

(Notarial Seal)

**CERTIFICATE OF ACKNOWLEDGMENT**

(For use where Contractor is a Corporation)

STATE OF MINNESOTA \_\_\_\_\_)  
COUNTY OF \_\_\_\_\_)SS

On this \_\_\_\_\_ day of \_\_\_\_\_, **2017**, before me personally appeared \_\_\_\_\_ and \_\_\_\_\_ to me personally know, who being by me duly sworn, did say that they are respectively the \_\_\_\_\_ that the seal affixed to the foregoing instrument is the corporate seal of said corporation, and that said instrument was executed in behalf of the corporation by authority of its \_\_\_\_\_ Board of \_\_\_\_\_ Directors, and said \_\_\_\_\_ and \_\_\_\_\_ acknowledged the instrument to be the free act and deed of said corporation.

\_\_\_\_\_  
Notary Public

(Notarial Seal)

\_\_\_\_\_  
Full Name of Surety Company

\_\_\_\_\_  
Home Office Address

\_\_\_\_\_  
Name of Attorney-in-Fact

\_\_\_\_\_  
Name of Local Agency

\_\_\_\_\_  
Address of Local Agency

\_\_\_\_\_  
Name of Agency Affixing Countersignature

\_\_\_\_\_  
Address

MEMORANDUM: Affix here Power of Attorney and Acknowledgment of Corporate Surety.



**CONTRACTOR'S PAYMENT BOND**  
**(PUBLIC IMPROVEMENT)**

KNOW ALL MEN BY THESE PRESENTS that \_\_\_\_\_ as Principal,  
hereinafter called CONTRACTOR, and

\_\_\_\_\_ duly authorized and licensed to do business  
in the State of Minnesota, as Surety, hereinafter called Surety, are held and firmly bound onto the City of Plymouth as Obligee, hereinafter called OWNER, for the use and benefit of claimants as hereinafter provided in the amount of \_\_\_\_\_ Dollars (written), (\$  
) , for the payment whereof CONTRACTOR and Surety bind themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS,

CONTRACTOR has by written Agreement dated \_\_\_\_\_, **2017**, entered into a Contract with OWNER for construction of the Plymouth Creek Streambank Restoration Project, City Project No. 16007 in accordance with Contract Documents prepared by The City's Engineering Department which Contract is by reference made a part hereof, and is to contain in substance the following provisions:

CONTRACTOR shall pay all claims for labor performed and materials furnished, used or consumed in making the public improvement or performing the public Work, including, without limitation because of specific enumeration, fuel, lumber, building materials, machinery, vehicles, tractors, equipment, fixtures, apparatus, tools, appliances, supplies, electric energy, gasoline, motor oil, lubricating oil, greases, premiums for worker's compensation insurance, and contributions for unemployment compensation.

The said written agreement, drawings, specifications, and amendments are hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if CONTRACTOR shall faithfully perform the said Contract and pay every person entitled thereto for all the claims for labor performed and materials furnished under the Contract to be used or consumed in making the public improvement or performing the public Work as provided in the Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect, subject, however, to the following conditions:

1. No assignment, modification or change of the Agreement, or change in the Work covered thereby, or any extension of time for completion of the Contract shall release the Sureties on the bond.
2. Not later than one year after the completion of Work under this Contract or such longer period of time as may be prescribed by law, or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any party in interest may maintain an action in his own name against CONTRACTOR and the Surety upon this bond for the recovery of any damages he may have sustained by reason of the failure of CONTRACTOR to comply with the Contract or with the Contract between CONTRACTOR and his Subcontractors. If the amount realized on this bond is insufficient to satisfy all claims of the parties in full, it shall be distributed among the parties pro rata.

IN WITNESS WHEREOF, the above-bounded parties have executed this instrument in original counterparts, under their several seals this \_\_\_\_\_ day of \_\_\_\_\_, **2017**, the names 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.

(Affix Corporate Seal)

\_\_\_\_\_  
(Contractor)



Attest: \_\_\_\_\_  
(Business Address)

\_\_\_\_\_  
(Title) By: \_\_\_\_\_  
(Title)

(Affix Corporate Seal) \_\_\_\_\_  
(Surety)

Attest: \_\_\_\_\_  
(Business Address)

\_\_\_\_\_  
(Attorney in Fact)



**CERTIFICATE OF ACKNOWLEDGMENT BY PRINCIPAL**

(For use where Contractor is Individual or Partnership)

STATE OF MINNESOTA \_\_\_\_\_)  
COUNTY OF \_\_\_\_\_)SS

On this \_\_\_\_\_ day of \_\_\_\_\_, **2017**, before me personally appeared \_\_\_\_\_, to me known to be the person \_\_\_\_\_ described in and who executed the foregoing conditions, and acknowledged that he/she \_\_\_\_\_ executed the same as \_\_\_\_\_ free act and deed.

\_\_\_\_\_  
Notary Public

(Notarial Seal)

**CERTIFICATE OF ACKNOWLEDGMENT**

(For use where Contractor is a Corporation)

STATE OF MINNESOTA \_\_\_\_\_)  
COUNTY OF \_\_\_\_\_)SS

On this \_\_\_\_\_ day of \_\_\_\_\_, **2017**, before me personally appeared \_\_\_\_\_ and \_\_\_\_\_ to me personally know, who being by me duly sworn, did say that they are respectively the \_\_\_\_\_ that the seal affixed to the foregoing instrument is the corporate seal of said corporation, and that said instrument was executed in behalf of the corporation by authority of its \_\_\_\_\_ Board \_\_\_\_\_ of \_\_\_\_\_ Directors, \_\_\_\_\_ and said \_\_\_\_\_ and \_\_\_\_\_ acknowledged the instrument to be the free act and deed of said corporation.

\_\_\_\_\_  
Notary Public

(Notarial Seal)

\_\_\_\_\_  
Full Name of Surety Company

\_\_\_\_\_  
Home Office Address

\_\_\_\_\_  
Name of Attorney-in-Fact

\_\_\_\_\_  
Name of Local Agency

\_\_\_\_\_  
Address of Local Agency

\_\_\_\_\_  
Name of Agency Affixing Countersignature

\_\_\_\_\_  
Address

MEMORANDUM: Affix here Power of Attorney and Acknowledgment of Corporate Surety



## **SUMMARY OF WORK & SUPPLEMENTARY CONDITIONS**

### **SUMMARY OF WORK**

The work done under this contract shall include the furnishing of all labor, materials, tools and equipment to construct complete in place the following items:

1. Tree clearing, harvest for reuse, and chipping for reuse or disposal.
2. Streambank stabilizing including grading, placement of riprap, boulders, and harvested tree root wads and logs.
3. Native vegetation establishment including seeding, shrubs, and trees.
4. Erosion control including blankets, mulch, and/or hydromulch.
5. Park improvements including trails, boardwalks, landscape timbers, and drainage.

### **SUPPLEMENTARY CONDITIONS**

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract (No. C-700, 2013 Edition) and other provisions of the Contract Documents as indicated below. All provisions which are not so amended or supplemented remain in full force and effect.

The terms used in these Supplementary Conditions which are defined in the Standard General Conditions of the Construction Contract (No. C-700, 2013 Edition) have the meanings assigned to them in the General Conditions.

#### **S.C. 2 - Subsurface and Physical Conditions**

In the preparation of Drawings and Specifications, ENGINEER or ENGINEER'S consultant have relied upon:

.2.A The following reports of explorations and tests of subsurface conditions at the site of the Work:

.2.A.1 City As-Built records.

.2.A.2 Topographic & Tree Survey information from a site visit by Wenck staff.

#### **S.C. 3 – Builder's Risk Insurance**

Builder's Risk Insurance as specified in 6.05 of the Standard General Conditions shall not be required for this project.

#### **S.C. 4 – Coordination with Private Utilities**

It shall be the responsibility of the CONTRACTOR to coordinate work with private utility owners. The CONTRACTOR shall not be entitled to an adjustment in Contract time for project delays due to relocation or protection of in place private utilities resulting from inadequate coordination as determined by the ENGINEER.



## **S.C. 5 – Regulatory Agencies**

In addition to the regulator agencies listed in the Standard General Conditions of the Construction Contract, the Specification, and elsewhere in this Contract, the following regulatory agencies have jurisdiction:

1. Bassett Creek Watershed Management Commission
2. MN Department of Natural Resources
3. US Army Corps of Engineers

## **S.C. 6 – Supervision and Superintendence**

The following shall be in addition to 7.01 of the Standard General Conditions.

1. If the CONTRACTOR is not in compliance with this section he shall be assessed at a rate of \$500.00 per day, to be deducted from the Mobilization bid item, that the Engineer determines the CONTRACTOR has not complied.

## **S.C. 7– Specifications**

The following additions, removals, or modifications to the Specifications shall apply:

01025	MEASUREMENT & PAYMENT
01040	COORDINATION
01050	FIELD ENGINEERING
01095	DEFINITIONS & STANDARDS
01155	HEALTH & SAFETY
01200	PROJECT MEETINGS
01300	SUBMITTALS
01410	TESTING LABORATORY SERVICES
01505	MOBILIZATION & DEMOBILIZATION
01530	PROTECTION OF EXISTING FACILITIES
01550	SITE ACCESS & STORAGE
01560	PROTECTION OF ENVIRONMENT
01568	AIR LAND AND WATER POLLUTION CONTROL
01570	EROSION CONTROL
01590	TEMPORARY CONSTRUCTION FACILITIES & UTILITIES
01600	MATERIAL & EQUIPMENT
01630	SUBSTITUTIONS
01700	PROJECT CLOSEOUT
01711	MAINTENANCE AND FINAL CLEANUP
01720	PROJECT RECORD DOCUMENTS
02102	CLEARING, GRUBBING, AND HARVESTING
02211	SITE PREPARATION
02225	REMOVALS
02315	EXCAVATION AND FILL
02316	BANK RESLOPING
02320	TRENCH EXCAVATION AND BACKFILL
02350	STRUCTURAL SOILS
02370	RIPRAP
02372	FIELDSTONE BOULDERS
02373	GEOTEXTILE
02630	STORM DRAINAGE
02720	AGGREGATE BASE COURSE



02920	GRASS PAVE2
02924	TIMBER EDGE PATH
02926	BOARDWALK
02930	TURF RESTORATION
02931	PLANTS
02955	NATIVE SEEDING
02960	LIVE CUT BRANCH MATERIALS FOR SOIL BIOENGINEERING TECHNIQUES
02963	LIVE STAKES
02966	LOGS AND ROOTWADS
02980	VEGETATION ESTABLISHMENT AND MAINTENANCE

## **S.C. 8 – Summary of Work**

### **1.01 PERMITS**

- A. The OWNER will secure permits listed below. The CONTRACTOR is responsible to comply with the terms and provisions of these permits.
  - 1. USACOE General permit.
  - 2. MPCA Stormwater Discharges Associated With Construction Activities NPDES General Permit.
  - 3. MN DNR Public Waters.
  - 4. Bassett Creek Watershed Management Commission Approval
- B. The CONTRACTOR shall apply for, obtain, and comply with stipulations of the following permits:
  - 1. DNR Water Appropriation Permit.
- C. The CONTRACTOR shall apply for, obtain, and comply with other permits, licenses, and approvals which may be required for the Project.
- D. The CONTRACTOR shall conduct their operations in accordance with the provisions of all permits, whether obtained by the Contractor or provided by the Owner. Any violations or fines will be the sole responsibility of the Contractor.

### **1.02 CONTRACTOR USE OF PREMISES**

- A. Definition of Site: The Site is defined as the area within the property lines and construction limits shown on the Contract Documents. Contractor shall limit operations, including material and equipment storage to within construction limits.
- B. CONTRACTOR shall keep driveways, roads, and entrances serving the site clear and available to OWNER and OWNER'S employees at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on site.
- C. Hours of Operation:
  - 1. CONTRACTOR'S operations shall be limited to Monday through Friday between the hours of 7:00 AM and sunset and Saturday between the hours of 8:00 AM and 6:00 PM. No Work shall be done on Sundays or legal holidays without written permission of OWNER. However, emergency Work may be done without prior permission.



2. CONTRACTOR shall reimburse the OWNER for additional engineering and/or inspection costs incurred as a result of overtime work in excess of the regular working hours stipulated herein. At OWNER'S option, overtime costs may either be deducted from the CONTRACTOR'S monthly payment request or deducted from the CONTRACTOR'S retention prior to release of final payment. Overtime costs for the OWNER'S personnel shall be based on the individual's current overtime wage rate. Overtime costs for personnel employed by the ENGINEER or OWNER'S independent testing laboratory shall be calculated in accordance with the terms of their respective contracts with the OWNER.
- D. Protection and Repair of Existing Facilities and Utilities: CONTRACTOR shall perform operations carefully and in such a manner as to protect existing facilities and utilities. Obstructions not shown on the Drawings may exist and shall be exposed by Contractor without damage. CONTRACTOR shall be responsible for damage to existing facilities and utilities resulting from CONTRACTOR'S operations, and shall repair or replace damaged items to OWNER'S satisfaction. Groundwater monitoring wells shall be protected during construction.
- E. Unfavorable Construction Conditions: When unfavorable weather, soil, drainage, or other unsuitable construction conditions exist, CONTRACTOR shall confine operations to work which will not be adversely affected by such conditions. No portion of the Work shall be constructed under conditions which would adversely affect the quality of the Work, unless special means or precautions are taken to perform the Work in a proper and satisfactory manner.
- F. OWNER will occupy site and existing buildings during entire period of construction for conduct of normal operations. Cooperate with OWNER during construction operations to minimize conflict and facilitate OWNER'S operations.
- G. CONTRACTOR shall, at all times, conduct operations to ensure least inconvenience to OWNER, other contractors, and general public.
- H. Coordinate use of premises under direction of OWNER.
- I. Assume full responsibility for protection and safekeeping of materials and equipment under this Contract.
- J. Obtain and pay for use of additional storage or Work areas needed for operations at no additional cost to OWNER.

#### 1.03 SEQUENCE OF WORK

- A. CONTRACTOR shall determine the sequence of Work to meet the requirement of these Contract Documents.

#### 1.04 RESPONSIBILITY OF THE CONTRACTOR

- A. The CONTRACTOR shall be responsible for the scheduling and general management of the work of the Project and for the acts and omissions of all of their employees; all SUBCONTRACTORS, their agents and employees; and all other persons performing any of the Work under a contract with the CONTRACTOR either above or below ground or water.



- B. The CONTRACTOR shall supervise and direct the Work, using its best skills and attention. It shall be solely responsible for all construction means, methods, techniques and procedures and for coordinating all portions of the Work under this Contract.
- C. The CONTRACTOR shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work.
- D. A CONTRACTOR representative who speaks English shall be on-site at all times.

1.05 COMMENCING WORK

- A. The CONTRACTOR shall not commence work nor allow any SUBCONTRACTOR to commence work until the OWNER has issued a Notice to Proceed.
- B. Work shall not commence without the approval of the Engineer, acting on behalf of the OWNER.
- C. Work shall not commence until all utility companies have been contacted and any and all buried utility lines have been marked.

1.06 SURVEYING AND CONSTRUCTION OBSERVATION

- A. Provide ENGINEER a minimum of 48-hour notice in advance of the need for establishing lines, grades, measurements, grade checks, and observation of Work.
- B. CONTRACTOR shall conduct operations so as to preserve benchmarks, survey reference points, and stakes existing or established by OWNER for the construction. CONTRACTOR will be charged the expense of repairing or replacing survey markers and shall be responsible for mistakes or lost time that result due to damage or destruction of survey markers due to CONTRACTOR'S operations.
- C. CONTRACTOR shall verify all grades, lines, levels, elevations and dimensions shown on the drawings. CONTRACTOR shall report errors and inconsistencies to the Engineer prior to commencing work.

1.07 PROJECT MANUAL

- A. CONTRACTOR shall have a complete Project Manual on site for the duration of the project. If CONTRACTOR does not have a complete Project Manual on site, a fine of \$1,000 per occurrence shall be deducted from the CONTRACTOR'S next invoice.



# STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by



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CONSTRUCTION CONTRACT**

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***Note:***

***Some sections in this document have been revised. Revisions are shown as red, italicized text.***



## ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

### 1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
  2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.
  3. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
  4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
  5. *Bidder*—An individual or entity that submits a Bid to Owner.
  6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.
  7. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.
  8. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.
  9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
  10. *Claim*—(a) A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein: seeking an adjustment of Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract; or (b) a demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal; or seeking resolution of a contractual issue that Engineer has declined to address. A demand for money or services by a third party is not a Claim.
  11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. ("CERCLA");



(b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5501 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. ("RCRA"); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, state, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.

12. *Contract*—The entire and integrated written contract between the Owner and Contractor concerning the Work.
13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.
14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents. .
15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.
16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.
17. *Cost of the Work*—See Paragraph 13.01 for definition.
18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.
20. *Engineer*—The individual or entity named as such in the Agreement.
21. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
22. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated in the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, does not establish a Hazardous Environmental Condition.
23. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
24. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
25. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date or by a time prior to Substantial Completion of all the Work.
26. *Notice of Award*—The written notice by Owner to a Bidder of Owner's acceptance of the Bid.
27. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.



28. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.
29. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor’s plan to accomplish the Work within the Contract Times.
30. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.
31. *Project Manual*—The written documents prepared for, or made available for, procuring and constructing the Work, including but not limited to the Bidding Documents or other construction procurement documents, geotechnical and existing conditions information, the Agreement, bond forms, General Conditions, Supplementary Conditions, and Specifications. The contents of the Project Manual may be bound in one or more volumes.
32. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative or “RPR” includes any assistants or field staff of Resident Project Representative.
33. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.
34. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer’s review of the submittals and the performance of related construction activities.
35. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor’s Applications for Payment.
36. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.
37. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands furnished by Owner which are designated for the use of Contractor.
38. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.
39. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.
40. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.



41. *Successful Bidder*—The Bidder whose Bid the Owner accepts, and to which the Owner makes an award of contract, subject to stated conditions.
42. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.
43. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.
44. *Technical Data*—Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (a) subsurface conditions at the Site, or physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) or (b) Hazardous Environmental Conditions at the Site. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then the data contained in boring logs, recorded measurements of subsurface water levels, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical or environmental report prepared for the Project and made available to Contractor are hereby defined as Technical Data with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06.
45. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including but not limited to those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, fiber optic transmissions, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
46. *Unit Price Work*—Work to be paid for on the basis of unit prices.
47. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.
48. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

## 1.02 Terminology

- A. The words and terms discussed in the following paragraphs are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives:*
  1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and



shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.

C. *Day:*

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

D. *Defective:*

1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
  - a. does not conform to the Contract Documents; or
  - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
  - c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or 15.04).

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

1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words “furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.

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

## ARTICLE 2 – PRELIMINARY MATTERS

### 2.01 *Delivery of Bonds and Evidence of Insurance*

- A. *Bonds:* When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.
- B. *Evidence of Contractor’s Insurance:* When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract), the certificates and other evidence of insurance required to be provided by Contractor in accordance with Article 6.
- C. *Evidence of Owner’s Insurance:* After receipt of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies



to each named insured and additional insured (as identified in the Supplementary Conditions or otherwise), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

## 2.02 *Copies of Documents*

- A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully executed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.
- B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

## 2.03 *Before Starting Construction*

- A. *Preliminary Schedules:* Within 10 days after the Effective Date of the Contract (or as otherwise specifically required by the Contract Documents), Contractor shall submit to Engineer for timely review:
  - 1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;
  - 2. a preliminary Schedule of Submittals; and
  - 3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

## 2.04 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

## 2.05 *Initial Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.03.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.
  - 1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.



2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.

2.06 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may transmit, and shall accept, Project-related correspondence, text, data, documents, drawings, information, and graphics, including but not limited to Shop Drawings and other submittals, in electronic media or digital format, either directly, or through access to a secure Project website.
- B. If the Contract does not establish protocols for electronic or digital transmittals, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. When transmitting items in electronic media or digital format, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the items, or from those established in applicable transmittal protocols.

**ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE**

3.01 *Intent*

- A. The Contract Documents are complementary; what is required by one is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic or digital versions of the Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version shall govern.
- D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.
- E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.

3.02 *Reference Standards*

- A. Standards Specifications, Codes, Laws and Regulations
  1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
  2. No provision of any such standard specification, manual, reference standard, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to



undertake responsibility inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

- a. The work shall be performed in accordance with the Minnesota Department of Transportation “Standard Specification for Highway Construction”, current edition, and any supplements or amendments thereto issued prior to the date of these Contract Documents, except as modified or supplemented in these General Conditions, Supplementary General Conditions, the current City of Plymouth Engineering Guidelines, Specifications, or other Contract Documents.

### 3.03 *Reporting and Resolving Discrepancies*

#### A. *Reporting Discrepancies:*

1. *Contractor’s Verification of Figures and Field Measurements:* Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.
2. *Contractor’s Review of Contract Documents:* If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.
3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

#### B. *Resolving Discrepancies:*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:
  - a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); or
  - b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

### 3.04 *Requirements of the Contract Documents*

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



Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work thereunder.

- B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.
- C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Owner and Contractor that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

#### 3.05 *Reuse of Documents*

- A. Contractor and its Subcontractors and Suppliers shall not:
  - 1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or
  - 2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.
- B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

### **ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK**

#### 4.01 *Commencement of Contract Times; Notice to Proceed*

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

#### 4.02 *Starting the Work*

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

#### 4.03 *Reference Points*

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



or property monuments by professionally qualified personnel. **CONTRACTOR shall notify the Resident Project Representative a minimum of 48 hours in advance of the need for construction stakes on the project.**

#### 4.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.
  - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.
  - 2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 11.
- B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

#### 4.05 *Delays in Contractor's Progress*

- A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Times and Contract Price. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:
  - 1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
  - 2. abnormal weather conditions;
  - 3. acts or failures to act of utility owners (other than those performing other work at or adjacent to the Site by arrangement with the Owner, as contemplated in Article 8); and
  - 4. acts of war or terrorism.
- D. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5.



- E. Paragraph 8.03 governs delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.
- F. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor.
- G. Contractor must submit any Change Proposal seeking an adjustment in Contract Price or Contract Times under this paragraph within 30 days of the commencement of the delaying, disrupting, or interfering event.

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

### **5.01 *Availability of Lands***

- A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.
- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

### **5.02 *Use of Site and Other Areas***

- A. *Limitation on Use of Site and Other Areas:*
  - 1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.
  - 2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.12, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or at law; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent



caused directly or indirectly, in whole or in part by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.

- B. *Removal of Debris During Performance of the Work:* During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.
- C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.
- D. *Loading of Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent structures or land to stresses or pressures that will endanger them.

#### 5.03 *Subsurface and Physical Conditions*

- A. *Reports and Drawings:* The Supplementary Conditions identify:
  - 1. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site;
  - 2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities); and
  - 3. Technical Data contained in such reports and drawings.
- B. *Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:
  - 1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
  - 2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
  - 3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

#### 5.04 *Differing Subsurface or Physical Conditions*

- A. *Notice by Contractor:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site either:
  - 1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate; or
  - 2. is of such a nature as to require a change in the Drawings or Specifications; or



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

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

- B. *Engineer's Review:* After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine the necessity of Owner's obtaining additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A above; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- C. *Owner's Statement to Contractor Regarding Site Condition:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.
- D. *Possible Price and Times Adjustments:*
  1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, or both, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
    - a. such condition must fall within any one or more of the categories described in Paragraph 5.04.A;
    - b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,
    - c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
  2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
    - a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise; or
    - b. the existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or



- c. Contractor failed to give the written notice as required by Paragraph 5.04.A.
- 3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
- 4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.

#### 5.05 *Underground Facilities*

- A. *Contractor's Responsibilities:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or adjacent to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:
  - 1. Owner and Engineer do not warrant or guarantee the accuracy or completeness of any such information or data provided by others; and
  - 2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
    - a. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
    - b. locating all Underground Facilities shown or indicated in the Contract Documents as being at the Site;
    - c. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
    - d. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.
- B. *Notice by Contractor:* If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, then Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer.
- C. *Engineer's Review:* Engineer will promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the Underground Facility in question; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and advise Owner in writing of Engineer's findings, conclusions, and recommendations. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
- D. *Owner's Statement to Contractor Regarding Underground Facility:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question, addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings



or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.

E. *Possible Price and Times Adjustments:*

1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, or both, to the extent that any existing Underground Facility at the Site that was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
  - a. Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated the existence or actual location of the Underground Facility in question;
  - b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;
  - c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times; and
  - d. Contractor gave the notice required in Paragraph 5.05.B.
2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.

5.06 *Hazardous Environmental Conditions at Site*

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

1. those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and
2. Technical Data contained in such reports and drawings.

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

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or
2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or



3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.
- C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.
- D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.
- E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.
- F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.
- G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off.
- H. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.
- I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2)



was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.H shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

- J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

## **ARTICLE 6 – BONDS AND INSURANCE**

### **6.01     *Performance, Payment, and Other Bonds***

- A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of all of Contractor's obligations under the Contract. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the Supplementary Conditions, or other specific provisions of the Contract. Contractor shall also furnish such other bonds as are required by the Supplementary Conditions or other specific provisions of the Contract.
- B. All bonds shall be in the form prescribed by the Contract except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (as amended and supplemented) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.
- C. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds in the required amounts.
- D. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or its right to do business is terminated in any state or jurisdiction where any part of the Project is located, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the bond and surety requirements above.
- E. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner's termination rights under Article 16.
- F. Upon request, Owner shall provide a copy of the payment bond to any Subcontractor, Supplier, or other person or entity claiming to have furnished labor or materials used in the performance of the Work.



6.02 *Insurance—General Provisions*

- A. Owner and Contractor shall obtain and maintain insurance as required in this Article and in the Supplementary Conditions.
- B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.
- C. Contractor shall deliver to Owner, with copies to each named insured and additional insured (as identified in this Article, in the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Contractor has obtained and is maintaining the policies, coverages, and endorsements required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- D. Owner shall deliver to Contractor, with copies to each named insured and additional insured (as identified in this Article, the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Owner has obtained and is maintaining the policies, coverages, and endorsements required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- E. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, shall not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.
- F. If either party does not purchase or maintain all of the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.
- G. If Contractor has failed to obtain and maintain required insurance, Owner may exclude the Contractor from the Site, impose an appropriate set-off against payment, and exercise Owner's termination rights under Article 16.
- H. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price shall be adjusted accordingly.
- I. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests.
- J. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner and other individuals and entities in the Contract.



6.03 *Contractor's Insurance*

- A. *Workers' Compensation*: Contractor shall purchase and maintain workers' compensation and employer's liability insurance for:
1. claims under workers' compensation, disability benefits, and other similar employee benefit acts. The limits of liability for the insurance shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:
    - a. State: Statutory
    - b. Applicable Federal (e.g. Longshoreman's): Statutory
    - c. Employer's Liability: \$2,000,000
  2. United States Longshoreman and Harbor Workers' Compensation Act and Jones Act coverage (if applicable).
  3. Claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees (by stop-gap endorsement in monopolist worker's compensation states). The limits of liability for the insurance shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:
    - a. State: Statutory
    - b. Applicable Federal (e.g. Longshoreman's): Statutory
    - c. Employer's Liability: \$2,000,000
  4. Foreign voluntary worker compensation (if applicable).
- B. *Commercial General Liability—Claims Covered*: Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against:
1. Claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees. The limits of liability for the insurance shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:
    - a. (1) General Aggregate (Except Products – Completed Operations)  
\$2,000,000
    - b. (2) Products – Completed (Operations Aggregate) \$2,000,000
    - c. (3) Personal and Advertising Injury (Per Personal/Organization) \$2,000,000
    - d. (4) Each Occurrence (Bodily Injury and Property Damage)  
\$2,000,000
    - e. (5) Property Damage Liability Insurance will provide Explosion, Collapse and Underground coverage's where applicable \$2,000,000
    - f. (6) Excess Liability
    - g. General Aggregate \$2,000,000
    - h. Each Occurrence \$2,000,000



2. Claims for damages insured by reasonably available personal injury liability coverage. The limits of liability for the insurance shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:
  - a. (1) General Aggregate (Except Products – Completed Operations)  
\$2,000,000
  - b. (2) Products – Completed (Operations Aggregate) \$2,000,000
  - c. (3) Personal and Advertising Injury (Per Personal/Organization) \$2,000,000
  - d. (4) Each Occurrence (Bodily Injury and Property Damage)  
\$2,000,000
  - e. (5) Property Damage Liability Insurance will provide Explosion, Collapse and Underground coverage's where applicable \$2,000,000
  - f. (6) Excess Liability
  - g. General Aggregate \$2,000,000
  - h. Each Occurrence \$2,000,000
3. Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom. The limits of liability for the insurance shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:
  - a. (1) General Aggregate (Except Products – Completed Operations)  
\$2,000,000
  - b. (2) Products – Completed (Operations Aggregate) \$2,000,000
  - c. (3) Personal and Advertising Injury (Per Personal/Organization) \$2,000,000
  - d. (4) Each Occurrence (Bodily Injury and Property Damage)  
\$2,000,000
  - e. 5) Property Damage Liability Insurance will provide Explosion, Collapse and Underground coverage's where applicable \$2,000,000
  - f. (6) Excess Liability
  - g. General Aggregate \$2,000,000
  - h. Each Occurrence \$2,000,000
- C. *Commercial General Liability—Form and Content:* Contractor's commercial liability policy shall be written on a 1996 (or later) ISO commercial general liability form (occurrence form) and include the following coverages and endorsements:
  1. Products and completed operations coverage:
    - a. Such insurance shall be maintained for three years after final payment.
    - b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.
  2. Blanket contractual liability coverage, to the extent permitted by law, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.



3. Broad form property damage coverage.
  4. Severability of interest.
  5. Underground, explosion, and collapse coverage.
  6. Personal injury coverage.
  7. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together); or CG 20 10 07 04 and CG 20 37 07 04 (together); or their equivalent.
  8. For design professional additional insureds, ISO Endorsement CG 20 32 07 04, "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.
- D. *Automobile liability:* Contractor shall purchase and maintain automobile liability insurance against claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy shall be written on an occurrence basis. **The limits of liability for the insurance shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:**
1. **(1) Bodily Injury:**
  2. **Each Person                      \$2,000,000**
  3. **Each Accident                      \$2,000,000**
  4. **(2) Property Damage:**
  5. **Each Accident                      \$2,000,000**
- OR**
6. **(3) Combined Single Limit**
  7. **Each Accident    \$2,000,000**
- E. *Umbrella or excess liability:* Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer's liability, commercial general liability, and automobile liability insurance described in the paragraphs above. Subject to industry-standard exclusions, the coverage afforded shall follow form as to each and every one of the underlying policies.
- F. *Contractor's pollution liability insurance:* Contractor shall purchase and maintain a policy covering third-party injury and property damage claims, including clean-up costs, as a result of pollution conditions arising from Contractor's operations and completed operations. This insurance shall be maintained for no less than three years after final completion.
- G. *Additional insureds:* The Contractor's commercial general liability, automobile liability, umbrella or excess, and pollution liability policies shall include and list as additional insureds Owner and Engineer, and any individuals or entities identified in the Supplementary Conditions; include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds; and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis. Contractor shall obtain all necessary endorsements to support these requirements.
- H. *Contractor's professional liability insurance:* If Contractor will provide or furnish professional services under this Contract, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance shall provide protection against claims arising out of performance of



professional design or related services, and caused by a negligent error, omission, or act for which the insured party is legally liable. It shall be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. If such professional design services are performed by a Subcontractor, and not by Contractor itself, then the requirements of this paragraph may be satisfied through the purchasing and maintenance of such insurance by such Subcontractor.

- I. *General provisions:* The policies of insurance required by this Paragraph 6.03 shall:
1. include at least the specific coverages provided in this Article. **The limits of liability for the insurance shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:**
    - a. **(1) Bodily Injury:**
      - b. Each Accident \$2,000,000
      - c. Annual Aggregate \$2,000,000
    - d. **2) Property Damage:**
      - e. Each Accident \$2,000,000
      - f. **(3) Annual Aggregate \$2,000,000**
    - g. **(4) The Owner shall be named as an additional insured, on a primary basis.**
  2. be written for not less than the limits of liability provided in this Article and in the Supplementary Conditions, or required by Laws or Regulations, whichever is greater.
  3. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least 10 days prior written notice has been given to Contractor. Within three days of receipt of any such written notice, Contractor shall provide a copy of the notice to Owner, Engineer, and each other insured under the policy.
  4. remain in effect at least until final payment (and longer if expressly required in this Article) and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract Documents.
  5. be appropriate for the Work being performed and provide protection from claims that may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable.
- J. The coverage requirements for specific policies of insurance must be met by such policies, and not by reference to excess or umbrella insurance provided in other policies.

6.04 *Owner's Liability Insurance*

- A. In addition to the insurance required to be provided by Contractor under Paragraph 6.03, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.
- B. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.



6.05 *Property Insurance*

- A. *Builder's Risk*: Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the full insurable replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:
1. include the Owner and Contractor as named insureds, and all Subcontractors, and any individuals or entities required by the Supplementary Conditions to be insured under such builder's risk policy, as insureds or named insureds. For purposes of the remainder of this Paragraph 6.05, Paragraphs 6.06 and 6.07, and any corresponding Supplementary Conditions, the parties required to be insured shall collectively be referred to as "insureds."
  2. be written on a builder's risk "all risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire; lightning; windstorm; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; flood; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; water damage (other than that caused by flood); and such other perils or causes of loss as may be specifically required by the Supplementary Conditions. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; or flood, are not commercially available under builder's risk policies, by endorsement or otherwise, such insurance may be provided through other insurance policies acceptable to Owner and Contractor.
  3. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.
  4. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects).
  5. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).
  6. extend to cover damage or loss to insured property while in transit.
  7. allow for partial occupation or use of the Work by Owner, such that those portions of the Work that are not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
  8. allow for the waiver of the insurer's subrogation rights, as set forth below.
  9. provide primary coverage for all losses and damages caused by the perils or causes of loss covered.
  10. not include a co-insurance clause.
  11. include an exception for ensuing losses from physical damage or loss with respect to any defective workmanship, design, or materials exclusions.



12. include performance/hot testing and start-up.
  13. be maintained in effect, subject to the provisions herein regarding Substantial Completion and partial occupancy or use of the Work by Owner, until the Work is complete.
- B. *Notice of Cancellation or Change:* All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 6.05 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured.
  - C. *Deductibles:* The purchaser of any required builder's risk or property insurance shall pay for costs not covered because of the application of a policy deductible.
  - D. *Partial Occupancy or Use by Owner:* If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide notice of such occupancy or use to the builder's risk insurer. The builder's risk insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy; rather, those portions of the Work that are occupied or used by Owner may come off the builder's risk policy, while those portions of the Work not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
  - E. *Additional Insurance:* If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.05, it may do so at Contractor's expense.
  - F. *Insurance of Other Property:* If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, such as tools, construction equipment, or other personal property owned by Contractor, a Subcontractor, or an employee of Contractor or a Subcontractor, then the entity or individual owning such property item will be responsible for deciding whether to insure it, and if so in what amount.

#### 6.06 *Waiver of Rights*

- A. All policies purchased in accordance with Paragraph 6.05, expressly including the builder's risk policy, shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any insureds thereunder, or against Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all Subcontractors, all individuals or entities identified in the Supplementary Conditions as insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.
- B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for:
  1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and



2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 6.06.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them.
- D. Contractor shall be responsible for assuring that the agreement under which a Subcontractor performs a portion of the Work contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by builder's risk insurance and any other property insurance applicable to the Work.

**6.07**     *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of insurance required by Paragraph 6.05 will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.
- B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.05 shall distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.
- C. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the money so received applied on account thereof, and the Work and the cost thereof covered by Change Order, if needed.

**ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES**

**7.01**     *Supervision and Superintendence*

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.
  1. The CONTRACTOR shall provide a superintendent in charge of the overall project. He shall be a competent individual who is fully authorized and capable of managing, directing and coordinating the project; who is fully experienced in the type of work being performed; who is capable of reading and thoroughly understanding the plans and specifications and who is authorized to receive instructions from the ENGINEER and his representatives. He must be on the Project a minimum of eight (8) hours each day from beginning until completion and shall not



have responsibility for any other project. He must have worked as a superintendent on previous projects.

- B. The CONTRACTOR shall assume the responsibility for supervision of the project regardless of the amount of the work sublet and shall give the project the necessary attention to facilitate satisfactory progress and assure completion in accordance with the terms of the Contract.
- C. The Superintendent shall maintain complete records of the work as it progresses and submit the records with each request for payment.
- D. The Superintendent shall have authority to act on behalf of the CONTRACTOR. All communications given to the Superintendent shall be as binding as if given to the CONTRACTOR.
- E. The Superintendent shall not be a working foreman, but rather a full-time supervisory position to manage the construction of this project.
- F. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

#### 7.02 *Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.
- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

#### 7.03 *Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.
- B. All materials and equipment incorporated into the Work shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.
- C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

#### 7.04 *"Or Equals"*

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or



equal" item is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment, or items from other proposed suppliers under the circumstances described below.

1. If Engineer in its sole discretion determines that an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer shall deem it an "or equal" item. For the purposes of this paragraph, a proposed item of material or equipment will be considered functionally equal to an item so named if:
  - a. in the exercise of reasonable judgment Engineer determines that:
    - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
    - 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
    - 3) it has a proven record of performance and availability of responsive service; and
    - 4) it is not objectionable to Owner.
  - b. Contractor certifies that, if approved and incorporated into the Work:
    - 1) there will be no increase in cost to the Owner or increase in Contract Times; and
    - 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.
- B. *Contractor's Expense:* Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.
- C. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal", which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.
- D. *Effect of Engineer's Determination:* Neither approval nor denial of an "or-equal" request shall result in any change in Contract Price. The Engineer's denial of an "or-equal" request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents.
- E. *Treatment as a Substitution Request:* If Engineer determines that an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer considered the proposed item as a substitute pursuant to Paragraph 7.05.

#### 7.05 Substitutes

- A. Unless the specification or description of an item of material or equipment required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment under the circumstances described below. To the extent possible such requests shall be made before commencement of related construction at the Site.
  1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of material or equipment from anyone other than Contractor.



2. The requirements for review by Engineer will be as set forth in Paragraph 7.05.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.
3. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:
  - a. shall certify that the proposed substitute item will:
    - 1) perform adequately the functions and achieve the results called for by the general design,
    - 2) be similar in substance to that specified, and
    - 3) be suited to the same use as that specified.
  - b. will state:
    - 1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times,
    - 2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and
    - 3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.
  - c. will identify:
    - 1) all variations of the proposed substitute item from that specified, and
    - 2) available engineering, sales, maintenance, repair, and replacement services.
  - d. shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.
- B. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.
- C. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- D. *Reimbursement of Engineer's Cost:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.



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

7.06 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner.
- B. Contractor shall retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of designated parts of the Work if required by the Contract to do so.
- C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against which Contractor has reasonable objection.
- D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable, during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within five days.
- E. Owner may require the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors, Suppliers, or other individuals or entities for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor, Supplier, or other individual or entity so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity.
- F. If Owner requires the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, or both, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.
- G. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.
- H. On a monthly basis Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.
- I. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions.
- J. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors, Suppliers, and all other individuals or entities performing or furnishing any of the Work.



- K. Contractor shall restrict all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed herein.
- L. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
- M. All Work performed for Contractor by a Subcontractor or Supplier shall be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer.
- N. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor on account of Work performed for Contractor by the particular Subcontractor or Supplier.
- O. Nothing in the Contract Documents:
  - 1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier, or other individual or entity; nor
  - 2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.
- P. The CONTRACTOR shall perform work amounting to not less than 50% of the total contract cost. A CONTRACTOR that cannot demonstrate meeting this criteria will be deemed unqualified to perform the work.

#### 7.07 *Patent Fees and Royalties*

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.
- C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or



resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

**7.08 Permits**

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

**7.09 Taxes**

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

**7.10 Laws and Regulations**

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work or other action. It shall not be Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.
- C. Owner or Contractor may give notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.
- D. **CONTRACTOR shall specifically comply with Equal Opportunity Requirements as listed in Minnesota Rules 5000.3535 Standard State Equal Employment Opportunity Construction Contract Specifications.**
- E. **CONTRACTOR shall specifically comply with Minnesota Rules 5000.3550, Disabled Individuals Affirmative Action Clause.**

**7.11 Record Documents**

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



#### 7.12 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:
  - 1. all persons on the Site or who may be affected by the Work;
  - 2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
  - 3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify Owner; the owners of adjacent property, Underground Facilities, and other utilities; and other contractors and utility owners performing work at or adjacent to the Site, when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.
- C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.
- D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.
- E. All damage, injury, or loss to any property referred to in Paragraph 7.12.A.2 or 7.12.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
- F. Contractor's duties and responsibilities for safety and protection shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 15.06.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).
- G. Contractor's duties and responsibilities for safety and protection shall resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

#### 7.13 *Safety Representative*

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



7.14 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

7.15 *Emergencies*

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

7.16 *Shop Drawings, Samples, and Other Submittals*

A. *Shop Drawing and Sample Submittal Requirements:*

1. Before submitting a Shop Drawing or Sample, Contractor shall have:
  - a. reviewed and coordinated the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
  - b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
  - c. determined and verified the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
  - d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.
2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that submittal, and that Contractor approves the submittal.
3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be set forth in a written communication separate from the Shop Drawings or Sample submittal; and, in addition, in the case of Shop Drawings by a specific notation made on each Shop Drawing submitted to Engineer for review and approval of each such variation.

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

1. *Shop Drawings:*

- a. Contractor shall submit the number of copies required in the Specifications.
- b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.D.



2. *Samples:*
  - a. Contractor shall submit the number of Samples required in the Specifications.
  - b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 7.16.D.
3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.
- C. *Other Submittals:* Contractor shall submit other submittals to Engineer in accordance with the accepted Schedule of Submittals, and pursuant to the applicable terms of the Specifications.
- D. *Engineer's Review:*
  1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
  2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions or programs incident thereto.
  3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
  4. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Contract Documents in a Field Order.
  5. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 7.16.A and B.
  6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, shall not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.
  7. Neither Engineer's receipt, review, acceptance or approval of a Shop Drawing, Sample, or other submittal shall result in such item becoming a Contract Document.
  8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.D.4.
- E. *Resubmittal Procedures:*
  1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.
  2. Contractor shall furnish required submittals with sufficient information and accuracy to obtain required approval of an item with no more than three submittals. Engineer will record Engineer's



time for reviewing a fourth or subsequent submittal of a Shop Drawings, sample, or other item requiring approval, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges.

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

#### **7.17 Contractor's General Warranty and Guarantee**

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on Contractor's warranty and guarantee.
- B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
  1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
  2. normal wear and tear under normal usage.
- C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:
  1. observations by Engineer;
  2. recommendation by Engineer or payment by Owner of any progress or final payment;
  3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
  4. use or occupancy of the Work or any part thereof by Owner;
  5. any review and approval of a Shop Drawing or Sample submittal;
  6. the issuance of a notice of acceptability by Engineer;
  7. any inspection, test, or approval by others; or
  8. any correction of defective Work by Owner.
- D. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract shall govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

#### **7.18 Indemnification**

- A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to



bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable.

- B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.
- C. The indemnification obligations of Contractor under Paragraph 7.18.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:
  - 1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
  - 2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

**7.19 Delegation of Professional Design Services**

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable Laws and Regulations.
- B. If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.
- C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.
- D. Pursuant to this paragraph, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 7.16.D.1.
- E. Contractor shall not be responsible for the adequacy of the performance or design criteria specified by Owner or Engineer.



## ARTICLE 8 – OTHER WORK AT THE SITE

### 8.01 *Other Work*

- A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.
- B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any utility work at or adjacent to the Site, Owner shall provide such information to Contractor.
- C. Contractor shall afford each other contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.
- D. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 8, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

### 8.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:
  - 1. the identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;
  - 2. an itemization of the specific matters to be covered by such authority and responsibility; and
  - 3. the extent of such authority and responsibilities.
- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

### 8.03 *Legal Relationships*

- A. If, in the course of performing other work at or adjacent to the Site for Owner, the Owner's employees, any other contractor working for Owner, or any utility owner causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment shall take into account information



(if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract. When applicable, any such equitable adjustment in Contract Price shall be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

- B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due to Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this paragraph.
- C. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due to Contractor.
- D. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

## **ARTICLE 9 – OWNER'S RESPONSIBILITIES**

### **9.01     *Communications to Contractor***

- A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

### **9.02     *Replacement of Engineer***

- A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer's status under the Contract Documents shall be that of the former Engineer.

### **9.03     *Furnish Data***

- A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

### **9.04     *Pay When Due***

- A. Owner shall make payments to Contractor when they are due as provided in the Agreement.



9.05 *Lands and Easements; Reports, Tests, and Drawings*

- A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.
- B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.
- C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

9.06 *Insurance*

- A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.

9.07 *Change Orders*

- A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.

9.08 *Inspections, Tests, and Approvals*

- A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.

9.09 *Limitations on Owner's Responsibilities*

- A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

9.10 *Undisclosed Hazardous Environmental Condition*

- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.

9.11 *Evidence of Financial Arrangements*

- A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents (including obligations under proposed changes in the Work).

9.12 *Safety Programs*

- A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.
- B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

**ARTICLE 10 – ENGINEER'S STATUS DURING CONSTRUCTION**

10.01 *Owner's Representative*

- A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract.

10.02 *Visits to Site*

- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the



progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 10.08. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 *Project Representative*

- A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 10.08. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent, or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

10.04 *Rejecting Defective Work*

- A. Engineer has the authority to reject Work in accordance with Article 14.

10.05 *Shop Drawings, Change Orders and Payments*

- A. Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, are set forth in Paragraph 7.16.
- B. Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, are set forth in Paragraph 7.19.
- C. Engineer's authority as to Change Orders is set forth in Article 11.
- D. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.06 *Determinations for Unit Price Work*

- A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

10.07 *Decisions on Requirements of Contract Documents and Acceptability of Work*

- A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.



10.08 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.
- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 15.06.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.
- E. The limitations upon authority and responsibility set forth in this Paragraph 10.08 shall also apply to the Resident Project Representative, if any.

10.09 *Compliance with Safety Program*

- A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs (if any) of which Engineer has been informed.

**ARTICLE 11 – AMENDING THE CONTRACT DOCUMENTS; CHANGES IN THE WORK**

11.01 *Amending and Supplementing Contract Documents*

- A. The Contract Documents may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
  - 1. *Change Orders:*
    - a. If an amendment or supplement to the Contract Documents includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order. A Change Order also may be used to establish amendments and supplements of the Contract Documents that do not affect the Contract Price or Contract Times.
    - b. Owner and Contractor may amend those terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, without the recommendation of the Engineer. Such an amendment shall be set forth in a Change Order.
  - 2. *Work Change Directives:* A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change



Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.04 regarding change of Contract Price. Contractor must submit any Change Proposal seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 30 days after the completion of the Work set out in the Work Change Directive. Owner must submit any Claim seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 60 days after issuance of the Work Change Directive.

3. *Field Orders:* Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

#### 11.02 *Owner-Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Such changes shall be supported by Engineer's recommendation, to the extent the change involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters. Such changes may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work shall be performed under the applicable conditions of the Contract Documents. Nothing in this paragraph shall obligate Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

#### 11.03 *Unauthorized Changes in the Work*

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.

#### 11.04 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment of Contract Price shall comply with the provisions of Article 12.
- B. An adjustment in the Contract Price will be determined as follows:
  1. where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03); or
  2. where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.04.C.2); or



3. where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.04.C).
- C. *Contractor's Fee:* When applicable, the Contractor's fee for overhead and profit shall be determined as follows:
1. a mutually acceptable fixed fee; or
  2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
    - a. for costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee shall be 15 percent;
    - b. for costs incurred under Paragraph 13.01.B.3, the Contractor's fee shall be five percent;
    - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.01.C.2.a and 11.01.C.2.b is that the Contractor's fee shall be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.A.1 and 13.01.A.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of five percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted work the maximum total fee to be paid by Owner shall be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the work;
    - d. no fee shall be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;
    - e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and
    - f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 11.04.C.2.a through 11.04.C.2.e, inclusive.

#### 11.05 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment in the Contract Times shall comply with the provisions of Article 12.
- B. An adjustment of the Contract Times shall be subject to the limitations set forth in Paragraph 4.05, concerning delays in Contractor's progress.

#### 11.06 *Change Proposals*

- A. Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; appeal an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; contest a set-off against payment due; or seek other relief under the Contract. The Change Proposal shall specify any proposed change in Contract Times or Contract Price, or both, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents.



1. *Procedures:* Contractor shall submit each Change Proposal to Engineer promptly (but in no event later than 30 days) after the start of the event giving rise thereto, or after such initial decision. The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal. The supporting data shall be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event. Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal.
  2. *Engineer's Action:* Engineer will review each Change Proposal and, within 30 days after receipt of the Contractor's supporting data, either deny the Change Proposal in whole, approve it in whole, or deny it in part and approve it in part. Such actions shall be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.
  3. *Binding Decision:* Engineer's decision will be final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.
- B. *Resolution of Certain Change Proposals:* If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice shall be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.

#### 11.07 *Execution of Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders covering:
1. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;
  2. changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;
  3. changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.02, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters; and
  4. changes in the Contract Price or Contract Times, or other changes, which embody the substance of any final and binding results under Paragraph 11.06, or Article 12.
- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of this Paragraph 11.07, it shall be deemed to be of full force and effect, as if fully executed.

#### 11.08 *Notification to Surety*

- A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.



## ARTICLE 12 – CLAIMS

### 12.01 *Claims*

- A. *Claims Process:* The following disputes between Owner and Contractor shall be submitted to the Claims process set forth in this Article:
  - 1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;
  - 2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents; and
  - 3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters.
- B. *Submittal of Claim:* The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 10 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim shall rest with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, or both, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.
- C. *Review and Resolution:* The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim shall be stated in writing and submitted to the other party, with a copy to Engineer.
- D. *Mediation:*
  - 1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate shall stay the Claim submittal and response process.
  - 2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process shall resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal and decision process shall resume as of the date of the conclusion of the mediation, as determined by the mediator.
  - 3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.
- E. *Partial Approval:* If the party receiving a Claim approves the Claim in part and denies it in part, such action shall be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.
- F. *Denial of Claim:* If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim shall be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.



- G. *Final and Binding Results*: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim shall be incorporated in a Change Order to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

## **ARTICLE 13 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK**

### **13.01 Cost of the Work**

- A. *Purposes for Determination of Cost of the Work*: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:
1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or
  2. To determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.
- B. *Costs Included*: Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 13.01.C, and shall include only the following items:
1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, and vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.
  2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.
  3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.
  4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.



5. Supplemental costs including the following:
  - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
  - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
  - c. Rentals of all construction equipment and machinery, and the parts thereof, whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
  - d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
  - e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
  - f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 6.05), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.
  - g. The cost of utilities, fuel, and sanitary facilities at the Site.
  - h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.
  - i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.
- C. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:
  1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.
  2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.



3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
  4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
  5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.
- D. *Contractor's Fee:* When the Work as a whole is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 11.04.C.
- E. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

#### 13.02 Allowances

- A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.
- B. *Cash Allowances:* Contractor agrees that:
1. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
  2. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.
- C. *Contingency Allowance:* Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.
- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

#### 13.03 Unit Price Work

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.



- D. There will be no adjustments in unit price bid for increased or decreased quantities under this contract.

Quantities for items listed on the Contractor's Proposal shall be measured during construction and the final measured quantities shall be used to determine the Contract Price. In order to complete the project in accordance with the intent of the plans and specifications, it is anticipated that quantities of several items will be more or less than estimated on the Contractor's Proposal.

- E. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of the following paragraph.
- F. Within 30 days of Engineer's written decision under the preceding paragraph, Contractor may submit a Change Proposal, or Owner may file a Claim, seeking an adjustment in the Contract Price if:
1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement;
  2. there is no corresponding adjustment with respect to any other item of Work; and
  3. Contractor believes that it is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price, and the parties are unable to agree as to the amount of any such increase or decrease.

#### **ARTICLE 14 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK**

##### **14.01 Access to Work**

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction will have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply therewith as applicable.

##### **14.02 Tests, Inspections, and Approvals**

- A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.
- B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work shall be governed by the provisions of Paragraph 14.05.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.



- D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:
1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;
  2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;
  3. by manufacturers of equipment furnished under the Contract Documents;
  4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
  5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.
- Such inspections and tests shall be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.
- E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.
- F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering shall be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to cover the same and Engineer had not acted with reasonable promptness in response to such notice.

#### 14.03 *Defective Work*

- A. *Contractor's Obligation:* It is Contractor's obligation to assure that the Work is not defective.
- B. *Engineer's Authority:* Engineer has the authority to determine whether Work is defective, and to reject defective Work.
- C. *Notice of Defects:* Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.
- D. *Correction, or Removal and Replacement:* Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.
- E. *Preservation of Warranties:* When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.
- F. *Costs and Damages:* In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs, losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.
- G. *Correction Period* If within two years after the date of Final Completion or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any Work



is found to be defective, CONTRACTOR shall promptly, without cost to OWNER and in accordance with OWNER'S written instructions: (i) correct such defective Work, or, if it has been rejected by OWNER, remove it from the site and replace it with Work that is not defective, and (ii) satisfactorily correct or remove and replace any damage to other Work or the work of others resulting therefrom.

#### 14.04 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work shall be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

#### 14.05 *Uncovering Work*

- A. Engineer has the authority to require special inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.
- B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.
- C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.
  - 1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.
  - 2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

#### 14.06 *Owner May Stop the Work*

- A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.



#### 14.07 *Owner May Correct Defective Work*

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, then Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.
- C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.
- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

### **ARTICLE 15 – PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD**

#### 15.01 *Progress Payments*

- A. *Basis for Progress Payments:* The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.
- B. *Applications for Payments:*
  - 1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens, and evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.
  - 2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.



3. The amount of retainage with respect to progress payments will be as follows:
  - a. Minnesota Contractor's -5%
  - b. Exempt Non-Minnesota Contractors -5%
  - c. Non-Exempt Non-Minnesota Contractors -5% + 8%=13%
  - d. \*State Surety Deposit
    - 1) Non-Minnesota Contractors are advised to file Form SD-3 with the Minnesota Department of Revenue to determine their exemption status.

C. Review of Applications:

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:
  - a. the Work has progressed to the point indicated;
  - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and
  - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
  - a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or
  - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.
4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
  - a. to supervise, direct, or control the Work, or
  - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
  - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or



- d. to make any examination to ascertain how or for what purposes Contractor has used the money paid on account of the Contract Price, or
  - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
- 5. Engineer may refuse to recommend the whole or any part of any payment **if the established Contract Time for Substantial Completion has expired or**, if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.
- 6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:
  - a. the Work is defective, requiring correction or replacement;
  - b. the Contract Price has been reduced by Change Orders;
  - c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
  - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or
  - e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.
- D. *Payment Becomes Due:*
  - 1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.
- E. *Reductions in Payment by Owner:*
  - 1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
    - a. claims have been made against Owner on account of Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages on account of Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;
    - b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
    - c. Contractor has failed to provide and maintain required bonds or insurance;
    - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;
    - e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
    - f. the Work is defective, requiring correction or replacement;
    - g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;



- h. the Contract Price has been reduced by Change Orders;
  - i. an event that would constitute a default by Contractor and therefore justify a termination for cause has occurred;
  - j. liquidated damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;
  - k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
  - l. there are other items entitling Owner to a set off against the amount recommended.
2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed shall be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.
  3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 15.01.C.1 and subject to interest as provided in the Agreement.

#### 15.02 *Contractor's Warranty of Title*

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than seven days after the time of payment by Owner.

#### 15.03 *Substantial Completion*

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.
- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which shall fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.



- D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.
- E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.
- F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

#### 15.04 *Partial Use or Occupancy*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:
  - 1. At any time Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through E for that part of the Work.
  - 2. At any time Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
  - 3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
  - 4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.05 regarding builder's risk or other property insurance.

#### 15.05 *Final Inspection*

- A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.



## 15.06 Final Payment

### A. Application for Payment:

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, annotated record documents (as provided in Paragraph 7.11), and other documents, Contractor may make application for final payment.
2. The final Application for Payment shall be accompanied (except as previously delivered) by:
  - a. all documentation called for in the Contract Documents;
  - b. consent of the surety, if any, to final payment;
  - c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.
  - d. a list of all disputes that Contractor believes are unsettled; and
  - e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.
4. Before final application for payment is made for the work, CONTRACTOR must make satisfactory showing of compliance with M.S.A. §290.92 which requires the withholding of state income taxes for wages paid employees on this project. Submittal of Certificate of Compliance from the Commissioner of Taxation to the OWNER will satisfy this requirement. CONTRACTOR is advised that before such certificate can be issued, he must first place on file with the Commissioner of Taxation an affidavit that he has complied with the provisions of M.S.A. §290.92. The required affidavit form will be supplied by the Commissioner of Taxation, Centennial Building, St. Paul, Minnesota, on request.

### B. Engineer's Review of Application and Acceptance:

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the Application for Payment to Owner for payment. Such recommendation shall account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to the provisions of Paragraph 15.07.



Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

- C. *Completion of Work*: The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment.
- D. *Payment Becomes Due*: Thirty days after the presentation to Owner of the final Application for Payment and accompanying documentation, the amount recommended by Engineer (less any further sum Owner is entitled to set off against Engineer's recommendation, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions above with respect to progress payments) will become due and shall be paid by Owner to Contractor.

#### 15.07 *Waiver of Claims*

- A. The making of final payment will not constitute a waiver by Owner of claims or rights against Contractor. Owner expressly reserves claims and rights arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 15.05, from Contractor's failure to comply with the Contract Documents or the terms of any special guarantees specified therein, from outstanding Claims by Owner, or from Contractor's continuing obligations under the Contract Documents.
- B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted or appealed under the provisions of Article 17.

#### 15.08 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents, or by any specific provision of the Contract Documents), any Work is found to be defective, or if the repair of any damages to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas used by Contractor as permitted by Laws and Regulations, is found to be defective, then Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
  - 1. correct the defective repairs to the Site or such other adjacent areas;
  - 2. correct such defective Work;
  - 3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
  - 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting therefrom.
- B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others).
- C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.



- D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.
- E. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

## **ARTICLE 16 – SUSPENSION OF WORK AND TERMINATION**

### **16.01    *Owner May Suspend Work***

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension. Any Change Proposal seeking such adjustments shall be submitted no later than 30 days after the date fixed for resumption of Work.

### **16.02    *Owner May Terminate for Cause***

- A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:
  - 1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule);
  - 2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
  - 3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or
  - 4. Contractor's repeated disregard of the authority of Owner or Engineer.
- B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) ten days written notice that Owner is considering a declaration that Contractor is in default and termination of the contract, Owner may proceed to:
  - 1. Declare Contractor to be in default, and give Contractor (and any surety) notice that the Contract is terminated; and
  - 2. Enforce the rights available to Owner under any applicable performance bond.
- C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.
- D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within seven days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such



related claims, costs, losses, and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

- F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.
- G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond shall govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

**16.03 Owner May Terminate For Convenience**

- A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
  - 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
  - 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and
  - 3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.
- B. Contractor shall not be paid on account of loss of anticipated overhead, profits, or revenue, or other economic loss arising out of or resulting from such termination.

**16.04 Contractor May Stop Work or Terminate**

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.
- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.



## ARTICLE 17 – FINAL RESOLUTION OF DISPUTES

### 17.01 *Methods and Procedures*

- A. *Disputes Subject to Final Resolution:* The following disputed matters are subject to final resolution under the provisions of this Article:
  - 1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full; and
  - 2. Disputes between Owner and Contractor concerning the Work or obligations under the Contract Documents, and arising after final payment has been made.
- B. *Final Resolution of Disputes:* For any dispute subject to resolution under this Article, Owner or Contractor may:
  - 1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions; or
  - 2. agree with the other party to submit the dispute to another dispute resolution process; or
  - 3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

## ARTICLE 18 – MISCELLANEOUS

### 18.01 *Giving Notice*

- A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:
  - 1. delivered in person, by a commercial courier service or otherwise, to the individual or to a member of the firm or to an officer of the corporation for which it is intended; or
  - 2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the sender of the notice.

### 18.02 *Computation of Times*

- A. When any period of time is referred to in the Contract by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

### 18.03 *Cumulative Remedies*

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

### 18.04 *Limitation of Damages*

- A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.



18.05 *No Waiver*

- A. A party's non-enforcement of any provision shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Contract.

18.06 *Survival of Obligations*

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract, as well as all continuing obligations indicated in the Contract, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

18.07 *Controlling Law*

- A. This Contract is to be governed by the law of the state in which the Project is located.

18.08 *Headings*

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions



# **DIVISION 1**

## **General Requirements**



## **SECTION 01025**

### **MEASUREMENT AND PAYMENT**

#### **PART 1 - GENERAL**

##### **1.01 SUMMARY**

- A. Work under this section includes descriptions of the measurement and payment methods for each bid item including directing the CONTRACTOR which work items shall have their prices merged and which are considered incidental to the project.

##### **1.02 MEASUREMENT AND PAYMENT**

###### **A. General**

1. Work under the following specification sections are considered incidental to the project, and no further compensation will be made.
  - a. Section 01040 – Coordination
  - b. Section 01050 – Field Engineering
  - c. Section 01095 – Definitions & Standards
  - d. Section 01155 – Health and Safety
  - e. Section 01200 – Project Meetings
  - f. Section 01300 – Submittals
  - g. Section 01410 – Testing Laboratory Services
  - h. Section 01505 – Mobilization & Demobilization
  - i. Section 01530 – Protection of Existing Facilities
  - j. Section 01550 – Site Access & Storage
  - k. Section 01560 – Protection of Environment
  - l. Section 01568 – Air, Land, and Water Pollution Control
  - m. Section 01570 – Erosion Control
  - n. Section 01590 – Temporary Construction Facilities and Utilities
  - o. Section 01600 – Material and Equipment
  - p. Section 01630 - Substitutions
  - q. Section 01700 – Project Closeout
  - r. Section 01711 – Maintenance and Final Cleanup
  - s. Section 01720 – Project Record Documents
2. Measurement and payment criteria applicable to portions of the work performed.
3. Defect assessment and non-payment for rejected work.
4. Unit Quantities Specified:
  - a. Quantities and measurements indicated in the Bid Form are for bidding and contract purposes.
  - b. A Change Order may be submitted if the scope of work changes. Change Order approval will be required from the OWNER.
5. Measurement and Quantities:
  - a. Measurement of quantities expressed as volume are based upon a neat plan line protection to the work limits as determined on the Bid Form for each item with no additional allowances for shrinkage, swelling, or creep.
  - b. Measurements of quantities expressed as area shall be based upon square dimensions using mean length and width or radius.



- c. Measurement of quantities expressed as linear foot shall be based on the length projected in plan view based on survey points (i.e., slopes projected flat).
  - d. Lump Sum/Price Measurement: Items measured by volume, area, or linear means or combinations, as appropriate, as a completed item or unit of work.
6. Payment:
- a. Payment for each lump sum and unit price stated in the itemized bill shall constitute full compensation for all required labor, products, tools, equipment, plant, transportation, services, and incidentals: erections, application on installation of an item of the work required to complete all work specified under that particular item including cleanup, and all costs for doing related work as set forth in these specifications and/or on the Drawings or implied in carrying out their intent.
    - i. The price bid sum stated in the itemized bid shall be deemed to include an allowance for overhead and profit.
  - b. Final payment for work governed will be made on the basis of bid quantities accepted by OWNER.
  - c. Requests for payment shall be in accordance with the General Conditions of the Construction Agreement.
  - d. Payment will be made to the limits as specified in the Contract Documents and as shown on the Drawings. The payment for quantities that exceed the contract quantities can only be obtained through an approved Change Order before contract quantities are exceeded. Change Orders shall only be approved in the scope of work specified in the Contract Documents and Drawings.
  - e. No partial payments shall be made for the installation of items which have not been tested and approved.
  - f. No partial payment shall be made for material delivered to the site and stored until installation.
  - g. Payment for unit price items will be made monthly until completion of each unit price based on quantity estimated by CONTACTOR, and verified by OWNER. Final payment will be based on actual field measured quantities.
7. Defect Assessment:
- a. Replace the work, or portions of the work, not conforming to specified requirements.
  - b. If, in the opinion of OWNER, it is not practical to remove and replace the work, OWNER will direct one of the following remedies:
    - i. The defective work may remain, but the unit/price will be adjusted to a new sum/price at the discretion of OWNER.
    - ii. The defective work will be partially repaired to the instructions of OWNER, and the unit/sum price will be adjusted to a new sum/price at the discretion of the OWNER.
  - c. The individual specification sections may modify these options or may identify a specific formula or percentage sum/price reduction.
  - d. The authority of OWNER to assess the defect and identify payment adjustment is final.
8. Non-Payment for Rejected Products:
- a. Payment will not be made for any of the following:
    - i. Products wasted or disposed of in a manner that is not acceptable.
    - ii. Products determined as unacceptable before or after placement.
    - iii. Products not completely unloaded from the transporting vehicle.
    - iv. Products placed beyond the lines and levels of the required work.



- v. Products remaining on hand after completion of the work.
- vi. Loading, hauling, and disposing of rejected products.

B. Bid items:

1. & 49. Mobilization and Demobilization – Section 01505

- a. Basis of Measurement: By lump sum.
- b. Basis of Payment: According to the unit price as stated on the bid form. Work includes preparatory work, all personnel, equipment, supplies and incidentals, including but not limited to, those necessary for the movement to and from the project site. Included in the CONTRACTOR’S Lump Sum Contract for mobilization as stated on the bid form. The amount of Lump Sum Bid shall not exceed 5 percent of the Total Base Bid.

Partial payment of the Lump Sum Bid Item “Mobilization and Demobilization” will be made using a percentage based on the following:

	<u>Cumulative Percent</u>
First Partial Payment	50
Percent of original contract earned – 25	70
Percent of original contract earned – 50	90
Percent of original contract earned – 100	100

2. & 50. Tree Clearing & Harvesting – Section 02102

- a. Basis of Measurement: By Lump Sum.
- b. Basis of Payment: According to the unit price as stated on the bid form. Includes equipment, labor, and materials required to limb, log, and remove root mass of trees to be harvested for installation as footer logs, root wads, and seating logs. Work also includes clearing of trees designated for removal but not intended for reuse.

3. Chip Onsite and Spread Woodchips on Existing Trails – Section 02102

- a. Basis of Measurement: By Lump Sum.
- b. Basis of Payment: According to the unit price as stated on the bid form. Includes equipment, labor, and materials required for chipping and spreading of unused trees and brush on existing nearby trails.
  - i. Amount of trees to be chipped onsite is at contractor’s option.

4. & 56 Construct, Maintain, & Restore Site Access and Staging Areas – Section 02211

- a. Basis of Measurement: By Lump Sum.
- b. Basis of Payment: According to the unit price as stated on the bid form. Includes preparatory work, all personnel, equipment, supplies and incidentals, including but not limited to, those necessary for Owner, furnishing, installing, maintaining, and restoring site access and staging areas as required for the entire project.

Partial payment of the Lump Sum Bid Item “Construct, Maintain, & Restore Site Access and Staging Areas” will be made using a percentage based on the following:



	<u>Cumulative Percent</u>
First Partial Payment	50
Percent of original contract earned – 100	100

5. & 57 Woven ECB, Rolanka BioD-Mat 40 – Section 01570

- a. Basis of Measurement: By Square Yard.
- b. Basis of Payment: According to the unit price as stated on the bid form. Includes equipment, labor, and materials required to install the woven erosion control blanket as specified. 2' hardwood stakes to anchor the erosion control blanket are incidental to this bid item.

6. & 58. Non-Woven ECB Type 3 Straw Cat 2S (No Poly Netting) – Section 01570

- a. Basis of Measurement: By Square Yard.
- b. Basis of Payment: According to the unit price as stated on the bid form. Includes equipment, labor, and materials required to install the non-woven erosion control blanket as specified. 2' hardwood stakes to anchor the erosion control blanket are incidental to this bid item.

7. & 59. Footer Log & Log Vanes – Section 02966

- a. Basis of Measurement: By Each.
- b. Basis of Payment: According to the unit price as stated on the bid form. Includes equipment, labor, and materials required to install footer log for log toe with root wads and log vanes as detailed and noted on the Drawings.
  - i. Trees harvested for footer logs shall be measured and compensated per bid items 2&50.

8. & 60. Root Wads – Section 02966

- a. Basis of Measurement: By Each installed.
- b. Basis of Payment: According to the unit price as stated on the bid form. Includes equipment, labor, and materials required to install Root Wads for log toe as detailed and noted on the Drawings.
  - i. Trees harvested for Root Wads shall be measured and compensated per bid item 2&50.

9. Seating Log – Drawings

- a. Basis of Measurement: By Each.
- b. Basis of Payment: According to the unit price as stated on the bid form. Includes equipment, labor, and materials required to install seating logs as specified and as shown on the Drawings.
  - i. Trees harvested for seating logs shall be measured and compensated per bid item 2&50.
  - ii. Trees used for seating logs shall be limited to straight sections of maple, elm, or basswood.

10. & 61. Silt Fence, Type MS – Maintained – Section 01570

- a. Basis of Measurement: By Lineal Foot.
- b. Basis of Payment: According to the unit price as stated on the bid form. Includes equipment, labor, and materials required to install and maintain silt fence for the duration of the project as specified. 80-percent payment will be made upon installation and 20-percent will be made upon removal and restoration.



11. & 62. Flotation Silt Curtain Type Moving Water – Maintained – Section 01570
- a. Basis of Measurement: By Lineal Foot.
  - b. Basis of Payment: According to the unit price as stated on the bid form. Includes equipment, labor, and materials required to install and maintain flotation silt curtain for the duration of the project as specified. 80-percent payment will be made upon installation and 20-percent will be made upon removal and restoration.
    - i. Flotation silt curtain required for bank resloping shall be considered incidental to bid item 7.
12. & 63. Sediment Control Log Type Straw (Or Bioroll) – Maintained – Section 01570
- a. Basis of Measurement: By Lineal Foot.
  - b. Basis of Payment: According to the unit price as stated on the bid form. Includes equipment, labor, and materials required to install and maintain sediment control log for the duration of the project as specified. 80-percent payment will be made upon installation and 20-percent will be made upon removal and restoration. Maintenance will require shifting control logs away from access road in use prior to starting work each day and shifting them back over access roads after operations have concluded each day.
13. & 64. Inlet Protection - Maintained – Section 01570
- a. Basis of Measurement: By Each.
  - b. Basis of Payment: According to the unit price as stated on the bid form. Includes equipment, labor, and materials required to install and maintain inlet protection for the duration of the project as specified. 80-percent payment will be made upon installation and 20-percent will be made upon removal and restoration. Inlet protection locations shall be as directed by the Engineer.
14. & 65. Temporary Construction Entrance – Maintained – Drawings
- a. Basis of Measurement: By Each.
  - b. Basis of Payment: According to the unit price as stated on the bid form. Includes work and materials required to install and maintain temporary construction entrance for the duration of the project as specified. 80-percent payment will be made upon installation and 20-percent will be made upon removal and restoration as determined by subcontractor invoice delivered to the Engineer.
15. & 66. Street Sweeper (With Pickup Broom) – Section 01568
- a. Basis of Measurement: By the Hour for a Sweeper and Operator.
  - b. Basis of Payment: According to the unit price as stated on the bid form. Includes furnishing all equipment and labor necessary to perform the sweeping operation and disposal of the material as specified.
16. & 67. Temporary Sedimentation Basin – Maintained – Section 01570
- a. Basis of Measurement: By Lump Sum.
  - b. Basis of Payment: According to the unit price as stated on the bid form. Includes equipment, labor, and materials required to install and maintain temporary sedimentation basin for the duration of the project as specified. 80-percent payment will be made upon installation and 20-percent will be made upon removal and restoration.



- 17 & 68. Class II Riprap, No Limestone (Veg Riprap Toe, Grade Control Structures, Swales & Brush Mattress)– Section 02370
- a. Basis of Measurement: By the Ton of riprap placed according to class as determined from weight tickets delivered to the Engineer.
  - b. Basis of Payment: According to the unit price as stated on the bid form. Includes equipment, labor, and materials required for installing riprap as shown on the Drawings.
18. & 71. 24” to 36” Fieldstone Boulders – Section 02372
- a. Basis of Measurement: By Ton of boulders placed as determined from weight tickets delivered to the Engineer.
  - b. Basis of Payment: According to the unit price as stated on the bid form. Includes equipment, labor, and materials required to install fieldstone boulders as directed in the field.
19. & 72.MN DOT Type V, Non-Woven Geotextile Fabric – Section 02373
- a. Basis of Measurement: By the Square Yard.
  - b. Basis of Payment: According to the unit price as stated on the bid form. Includes equipment, labor, and materials required to install the geotextile below boulder vanes, vegetated riprap, and riprap overflow.
20. Brush Mattress
- a. Basis of Measurement: By Square Yard.
  - b. Basis of Payment: According to the unit price as stated on the bid form. Includes equipment, labor, and materials required to install the brush mattress.
21. CU Structural Soil– Section 02350
- a. Basis of Measurement: By Ton of CU Structural Soil placed as determined from weight tickets delivered to the Engineer.
  - b. Basis of Payment: According to the unit price as stated on the bid form. Includes equipment, labor, and materials required to install CU Structural Soil as directed by Engineer.
22. Common Excavation On-site (EV) – Section 02315
- a. Basis of Measurement: By the volume of material (cubic yard) based on pre-construction survey information and the design grading grade shown on the Drawings. Quantity paid shall be Drawing quantity with no adjustment to the volume unless the scope of the soil moved has changed from that shown on the Drawings.
  - b. Basis of Payment: According to the unit price as stated on the bid form. Includes equipment, labor, and materials required for excavating, loading, and hauling materials onsite at location as directed by Engineer.
23. Subgrade Preparation – Section 02315
- a. Basis of Measurement: By the volume of material (cubic yard) based on pre-construction survey information and the design grading grade shown on the Drawings. Quantity paid shall be Drawing quantity with no adjustment to the volume unless the scope of the soil moved has changed from that shown on the Drawings.
  - b. Basis of Payment: According to the unit price as stated on the bid form. Includes equipment, labor, and materials required for excavating, loading, and hauling materials onsite at location as directed by Engineer.



24. Granite Charcoal Stepper – Drawings
- a. Basis of Measurement: By Each.
  - b. Basis of Payment: According to the unit price as stated on the bid form. Includes equipment, labor, and materials required to install Stepper as specified and as shown on the Drawings and directed by Engineer.
25. Trap Rock Step – Drawings
- a. Basis of Measurement: By Each.
  - b. Basis of Payment: According to the unit price as stated on the bid form. Includes equipment, labor, and materials required to install Stepper as specified and as shown on the Drawings and directed by Engineer.
26. Aggregate Base CL 5 – Section 02720
- a. Basis of Measurement: By the volume of material (cubic yard) based on pre-construction survey information and the design grading grade shown on the Drawings. Quantity paid shall be Drawing quantity with no adjustment to the volume unless the scope of the has changed from that shown on the Drawings.
  - b. Basis of Payment: According to the unit price as stated on the bid form. Includes equipment, labor, and materials required for excavating, loading, and hauling materials onsite at location as directed by Engineer.
27. Aggregate Base CL 2 – Section 02720
- a. Basis of Measurement: By the volume of material (cubic yard) based on pre-construction survey information and the design grading grade shown on the Drawings. Quantity paid shall be Drawing quantity with no adjustment to the volume unless the scope of the has changed from that shown on the Drawings.
  - b. Basis of Payment: According to the unit price as stated on the bid form. Includes equipment, labor, and materials required to install the Aggregate below Grass Pave2 as directed by Engineer.
28. Grass Pave 2 – Section 02920
- a. Basis of Measurement: By the Square Yard.
  - b. Basis of Payment: According to the unit price as stated on the bid form. Includes equipment, labor, and materials required to install the Grass Pave 2 as directed by Engineer.
29. Timber Edge Path – Section 02924
- a. Basis of Measurement: By Linear Foot.
  - b. Basis of Payment: According to the unit price as stated on the bid form. Includes equipment, labor, and materials required to install the Timber Edge Path as directed by Engineer.



30. Woodchip/Gravel – Section 02924

- a. Basis of Measurement: By the volume of material (cubic yard) based on pre-construction survey information and the design grading grade shown on the Drawings.
- b. Basis of Payment: According to the unit price as stated on the bid form. Includes equipment, labor, and materials required to install the Timber Edge Path as directed by Engineer.

31. Boardwalk – 02926

- a. Basis of Measurement: By Linear Foot.
- b. Basis of Payment: According to the unit price as stated on the bid form. Includes equipment, labor, and materials required to install the Boardwalk as directed by Engineer.

32. 4" Drain Tile Pipe – Section 02630

- a. Basis of Measurement: The Work required for this item will be measured in the field by the linear foot installed.
- b. Basis of Payment: Work and materials required under this section shall be paid according to the unit bid price. Includes furnishing and installing 4" Pipe as shown on Plans. All other work and costs for this bid item shall be incidental.

33,43,73, & 77. Seeding – Section 02955

- a. Basis of Measurement: By the Acre regardless of the seed mixture or quantity of seed used.
- b. Basis of Payment: According to the unit bid price as stated on the bid form. Includes equipment, labor, and materials required for preparation of seedbed and all correlated activity specified. Leaf blowing to expose soil for installing seed shall be considered incidental to this bid item.

34,44,74,&78. Native Seed Mix – Section 02955

- a. Basis of Measurement: By weight in pounds of pure live seed (PLS).
- b. Basis of Payment: According to the unit price as stated on the bid form. Includes equipment, labor, and materials required for supplying and installing the seed mixture.
  - i. Quantities are based on seeding rate of 106.8 lbs/acre.

35,45,75,&79. Fescue Seed Mix – Section 02955

- a. Basis of Measurement: By weight in pounds of pure live seed (PLS).
- b. Basis of Payment: According to the unit price as stated on the bid form. Includes equipment, labor, and materials required for supplying and installing the seed mixture.
  - i. Quantities are based on seeding rate of 100.0 lbs/acre.

36. & 76. Spring Mobilization and Demobilization – Section 01505

- a. Basis of Measurement: By lump sum.
- b. Basis of Payment: According to the unit price as stated on the bid form. Work includes preparatory work, all personnel, equipment, supplies and incidentals, including but not limited to, those necessary for the movement to and from the project site. Included in the CONTRACTOR'S Lump Sum Contract for mobilization



as stated on the bid form. The amount of Lump Sum Bid shall not exceed 5 percent of the Total Base Bid.

Partial payment of the Lump Sum Bid Item “Mobilization and Demobilization” will be made using a percentage based on the following:

	<u>Cumulative Percent</u>
First Partial Payment	50
Percent of original contract earned – 25	70
Percent of original contract earned – 50	90
Percent of original contract earned – 100	100

37. Tree Planting – Section 02931

- a. Basis of Measurement: By the unit for each type planted and accepted.
- b. Basis of Payment: According to the unit price as stated by the bid form. The contract unit price includes all costs of labor and materials required to furnish and install.

38. Shrub Planting (#5 Pot)– Section 02931

- a. Basis of Measurement: By the unit for each type planted and accepted.
- b. Basis of Payment: According to the unit price as stated by the bid form. The contract unit price includes all costs of labor and materials required to furnish and install.

39. Shrub Planting (#10 Pot)– Section 02931

- a. Basis of Measurement: By the unit for each type planted and accepted.
- b. Basis of Payment: According to the unit price as stated by the bid form. The contract unit price includes all costs of labor and materials required to furnish and install.

40. Perennial Planting Enhancement of Seeded Areas – Section 0293

- a. Basis of Measurement: By the unit for each type planted and accepted.
- b. Basis of Payment: According to the unit price as stated by the bid form. The contract unit price includes all costs of labor and materials required to furnish and install.

41. Bare Root Shrubs – Section 02931

- a. Basis of Measurement: By each.
- b. Basis of Payment: According to the unit price as stated on the bid form. Includes all labor, material, and equipment necessary to furnish and install the bare root shrubs as shown on the Plans.

42. Live Stakes – Section 02960/02963

- a. Basis of Measurement: By each.
- b. Basis of Payment: According to the unit price as stated on the bid form. Includes all labor, material, and equipment necessary to furnish and install the Live Stakes as shown on the Plans.

46. & 80. Hydraulic Matrix, Type Mulch – Section 02955

- a. Basis of Measurement: By weight in pounds of material.



- b. Basis of Payment: According to the unit price as stated on the bid form. Includes equipment, labor, and materials required for installing hydromulch. Leaf blowing to expose soil for installing hydromulch shall be considered incidental to this bid item.
- i. Quantities are based on application rate of 2000 lbs/acre.

47. & 81. Vegetation Establishment and Maintenance – Section 02980

- a. Basis of Measurement: By Lump Sum.
- b. Basis of Payment: According to the unit price as stated on the bid form. Includes equipment, labor, and materials required to provide vegetation establishment and maintenance as specified.

Partial payment of the Lump Sum Bid Item “Vegetation Establishment and Maintenance” will be made using a percentage based on the following:

	<u>Cumulative Percent</u>
September 30, 2017	20
June 30, 2018	40
October 30, 2018	60
June 30, 2019	80
October 30, 2019	100

51. Haul and Dispose Offsite All Unchipped Wood – Section 02102

- a. Basis of Measurement: By Lump Sum.
- b. Basis of Payment: According to the unit price as stated on the bid form. Includes equipment, labor, and materials required for hauling and disposing of all unchipped trees and brush offsite.

52. Remove and Dispose of 12” RCP Flared End Section – 02225

- a. Basis of Measurement: By Each
- b. Basis of Payment: According to the unit price as stated on the bid form. Includes equipment, labor, and materials required to remove and dispose of 12” RCP flared end section as specified and as shown on the Drawings.

53. Remove 12” RCP Pipe – Section 02225

- a. Basis of Measurement – By Lineal Foot.
- b. Basis of Payment: According to the unit price as stated on the bid form. Includes equipment, labor, and materials required to remove 12” RCP pipe.

54. Furnish and Install 12” RCP Flared End Section – Section 02630

- a. Basis of Measurement – By Each.
- b. Basis of Payment: According to the unit price as stated on the bid form. Includes equipment, labor, and materials required to install 12” RCP pipe.

55. New Tie Rod Installation – Section Drawings

- a. Basis of Measurement: By Lump Sum.
- b. Basis of Payment: According to the unit price as stated on the bid form. Includes equipment, labor, and materials required to install tie rods.

69. Class III Riprap, No Limestone (Channel Overflow & Plunge Pools) – Section 02370



- a. Basis of Measurement: By the Ton of riprap placed according to class as determined from weight tickets delivered to the Engineer.
  - b. Basis of Payment: According to the unit price as stated on the bid form. Includes equipment, labor, and materials required for installing riprap as shown on the Drawings.
70. Class IV Riprap, No limestone (Downstream of Fernbrook)
- a. Basis of Measurement: By the Ton of riprap placed according to class as determined from weight tickets delivered to the Engineer.
  - b. Basis of Payment: According to the unit price as stated on the bid form. Includes equipment, labor, and materials required for installing riprap as shown on the Drawings.

## PART 2 - PRODUCTS

Not Used

## PART 3 - EXECUTION

Not Used

\*\*\*END OF SECTION\*\*\*



## **SECTION 01040**

### **COORDINATION**

#### **PART 1 – GENERAL**

##### **1.01 DESCRIPTION OF WORK**

- A. The CONTRACTOR shall coordinate material supply, material delivery/unloading, construction, and inspection to assure efficient and orderly completion of the Work.
- B. The CONTRACTOR shall notify the OWNER, in writing, when coordination of the OWNER'S or other CONTRACTOR'S activities are required.

##### **1.02 PROJECT PERSONNEL**

- A. The OWNER is:  
  
City of Plymouth  
3400 Plymouth Boulevard  
Plymouth, MN 55447  
Office (763)-509-5526  
Fax (763) 509-5510
- B. The ENGINEER is:  
  
Mr. Ed Matthiesen, P.E.  
Wenck Associates, Inc.  
7500 Olsen Memorial Highway, Suite 300  
Golden Valley, MN 55427  
Phone: (763) 252-6800  
Fax: (763) 831-1268

#### **PART 2 – PRODUCTS (Not Applicable)**

#### **PART 3 – EXECUTION (Not Applicable)**

\*\*\*END OF SECTION\*\*\*



## **SECTION 01050**

### **FIELD ENGINEERING**

#### **PART 1 - GENERAL**

##### **1.01 PRIMARY CONTROL MONUMENT**

- A. Benchmarks will be provided by OWNER to establish primary vertical control.
- B. Monuments or references for primary horizontal control will be provided by OWNER for construction of Work.
- C. CONTRACTOR shall preserve and maintain primary control monuments.

##### **1.02 PRIMARY LINE AND GRADE**

- A. Primary line and grade will be provided and established by ENGINEER.
- B. CONTRACTOR shall:
  - 1. Arrange operations to avoid interference with primary lines and grades.
  - 2. Check accuracy of line and grade by visual inspection, checks between stakes, and periodic checks (with surveying equipment) between primary control monuments and stakes.
  - 3. Responsible for protection and preservation of stakes.

##### **1.03 CONSTRUCTION LINE AND GRADE**

- A. CONTRACTOR shall bear sole responsibility for correct transfer of construction lines and grades from primary line and grade points and for correct alignment and grade of completed Work based upon lines and grades.
- B. CONTRACTOR shall transfer line and grade for open cut construction of utilities from primary line and grade stakes to Work by means of grade boards, laser beam or other approved methods.

##### **1.04 LOT CORNERS AND SURVEY MONUMENTS**

- A. Provide services of registered land surveyor to replace lot corners and survey monument disturbed by construction operations.

##### **1.05 SUBMITTALS**

- A. When requested by ENGINEER, CONTRACTOR shall submit a statement certifying elevations and locations of work are in conformance with Contract Documents, explain all deviations.



## PART 2

Not Used

## PART 3 – EXECUTION

### 3.01 GENERAL

- A. The CONTRACTOR shall make no changes or relocations to control points without prior written approval from the OWNER.
- B. The CONTRACTOR shall report to the OWNER when any reference point is lost or destroyed, or requires relocation because of necessary changes in grades or locations.
- C. The CONTRACTOR shall replace Project control points, which are lost or destroyed at no additional cost to OWNER. Replacement shall be re-established based on original survey control.
- D. The CONTRACTOR shall establish and maintain all lines and levels, located and laid out, by instrumentation and similar appropriate means, as required to efficiently complete all Work indicated by the Drawings and Specifications.
- E. As construction proceeds, the CONTRACTOR shall check every element for line, level, and plumb.
- F. Locations of existing sewers, culverts, and other utilities shown on the Drawings are approximate and shall be field-verified by the CONTRACTOR, prior to construction, as required to complete the Work.

\*\*\*END OF SECTION\*\*\*



## **SECTION 01095**

### **DEFINITIONS AND STANDARDS**

#### **PART 1 - GENERAL**

##### **1.01 DESCRIPTION**

- A. Basic definitions are provided in the General Conditions.
- B. Additional technical definitions are provided in appropriate sections of these Specifications.
- C. Abbreviations and acronyms are sometimes used in the Specifications to identify reference standards. Implied words and meanings shall be interpreted as appropriate.
- D. When a standard is specified by reference, the CONTRACTOR shall comply with requirements and recommendations stated in that standard, except when requirements are modified by the Contract Documents, or when applicable codes established more strict standards.
- E. When published standards are referenced, the publication in effect on the date of issue of Contract Documents shall apply, unless specified otherwise.

##### **1.02 ABBREVIATIONS, NAMES, AND ADDRESSES OF ORGANIZATIONS**

The CONTRACTOR shall obtain copies of referenced standards, direct from the publication source, when needed for proper performance of Work, or when required for submittal by Contract Documents.

AASHTO      American Association of State Highway and Transportation Officials  
44 North Capital Street, NW  
Washington, DC 20001

ASTM      American Society for Testing and Materials  
1916 Race Street  
Philadelphia, PA 19103

GRI      Geosynthetic Research Institute  
475 Kedron Avenue  
Folsom, PA 19033-1208

MN/DOT      Minnesota Department of Transportation  
395 John Ireland Blvd  
St. Paul, MN 55155-1899



### 1.03 OTHER DEFINITIONS

- A. Furnish: Supply and deliver to the Project Site, ready for unloading, unpacking, assembly, installation, and similar operations.
- B. Install: Operations at the Project Site, including unloading, unpacking, assembly, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
- C. Provide: To furnish and install in-place, complete and ready for the intended use.
- D. Installer: The CONTRACTOR or another entity engaged by the CONTRACTOR, either as an employee, subcontractor, or contractor of lower tier, to perform a particular construction activity, including installation, erection, application, and similar operations. Installers are required to be experienced in the operations they are engaged to perform.

The term experienced, when used with the term Installer, means having a minimum of five previous projects similar in size and scope to this Project, being familiar with the special requirements indicated, and having complied with requirements of the authorities having jurisdiction.

- E. Project Site: Is the space available for performing construction activities, either exclusively or in conjunction, with others performing work as part of the Project. The extent of the Project Site is shown on the Drawings and may or may not be identical with the description of the land on which the Project is to be built.
- F. Standard Specifications: Minnesota Department of Transportation "Standard Specifications for Construction" 2014 edition with revisions and supplements.
- G. OWNER & ENGINEER: as discussed in Section 01040.

### PART 2 – PRODUCTS

(Not Applicable)

### PART 3 – EXECUTION

(Not Applicable)

\*\*\*END OF SECTION\*\*\*



## **SECTION 01155**

### **HEALTH AND SAFETY**

#### **PART 1 - GENERAL**

##### **1.01 DESCRIPTION OF WORK**

- A. CONTRACTOR shall be responsible for implementation and enforcement of safe Work practices, including, but not limited to personnel monitoring, use of trenching, sheeting, and shoring, scaffolding; materials handling and drilling; operation of equipment; and safety of public during progress of Work.

##### **1.02 QUALITY ASSURANCE**

- A. Requirements of Regulatory Agencies:
  - 1. CONTRACTOR shall plan for and ensure personnel comply with basic provisions of OSHA Safety and Health Standards (29 CFR 1910) and General Construction Standards (29 CFR 1926) as appropriate.
  - 2. CONTRACTOR shall comply with all applicable Laws and Regulations of any public body having jurisdiction for safety of persons or property.

##### **1.03 OPERATIONS AND EQUIPMENT SAFETY**

- A. CONTRACTOR shall be responsible for initiating, maintaining, and supervising safety precautions and programs in connection with Work. CONTRACTOR shall take necessary precautions for safety of employees on project site and other persons and organizations who may be affected by the project.
- B. CONTRACTOR'S duties and responsibilities for safety in connection with Work shall continue until such time as all Work is completed and ENGINEER has issued notice to CONTRACTOR that Work is complete.

##### **1.04 HEALTH AND SAFETY**

- A. CONTRACTOR is responsible for implementation and enforcement of health and safety requirements and shall take necessary precautions and provide protection for:
  - 1. All personnel working on or visiting project site, irrespective of employer.
  - 2. Work and materials or equipment to be incorporated in Work area whether on- or off-site.
  - 3. Other property at or adjacent to project site.
  - 4. Public exposed to job-related operations or potential release of toxic or hazardous materials.
- B. CONTRACTOR shall prepare a site-specific Health And Safety Plan (HASP). If CONTRACTOR does not have the capability to prepare HASP, CONTRACTOR shall employ consultants with appropriate capability. CONTRACTOR is solely



responsible for the adequacy of the HASP's preparation, monitoring, management, and enforcement. At a minimum, CONTRACTOR'S HASP shall address the following:

1. Site description
  2. Project activities and coordination with other CONTRACTORS.
  3. Hazard evaluation.
  4. On-site safety responsibilities.
  5. Work zones.
  6. Personnel training.
  7. Personal protection, clothing, and equipment.
  8. Emergency procedures.
- C. If OWNER contracts with others for Work on the site, CONTRACTOR shall amend the HASP to include provisions for Work of others. CONTRACTOR shall also manage, enforce, and monitor the health and safety activities of other CONTRACTORS during duration of other CONTRACTORS' Work.

#### 1.05 ENGINEER RESPONSIBILITIES

- A. The ENGINEER is anticipated to be present on Project Site during construction activities. The ENGINEER will comply with CONTRACTOR'S safety plans, programs, and procedures.
- B. If ENGINEER determines CONTRACTOR'S safety plans, programs, and procedures do not provide adequate protection for ENGINEER, ENGINEER may direct its employees to leave Project Site or implement additional safeguards for ENGINEER protection. If taken, these actions will be in furtherance of ENGINEER responsibility to its employees only, and ENGINEER will not assume responsibility for protection of any other persons affected by Work.
- C. If ENGINEER observes situations that appear to have potential for immediate and serious injury to persons, ENGINEER may warn persons who appear to be affected by such situations. Such warnings, if issued, shall be given based on general humanitarian concerns, and ENGINEER will not, by issuance of any such warning, assume any responsibility to issue future warnings or any general responsibility for protection of persons affected by Work.

#### 1.06 SUBMITTALS

- A. Submit copies of HASP to OWNER and ENGINEER.
1. Submit HASP to OWNER and ENGINEER within 7 days after Notice to Proceed. Work on-site shall not proceed until the HASP has been submitted to ENGINEER.
    - a. Submittal of CONTRACTOR'S Health and Safety Plan to ENGINEER is to inform ENGINEER and OWNER so they can comply with HASP during performance of their on-site responsibilities as described in Contract Documents.



- b. Submittal of CONTRACTOR'S Health and Safety Plan shall neither impose on ENGINEER'S responsibility for adequacy of HASP nor relieve CONTRACTOR from full responsibility therefore.

\*\*\*END OF SECTION\*\*\*



## **SECTION 01200**

### **PROJECT MEETINGS**

#### **PART 1 - GENERAL**

##### **1.01 SUMMARY**

- A. Section includes requirements for project meetings on site.

##### **1.02 PRECONSTRUCTION MEETING**

- A. ENGINEER will schedule and conduct a preconstruction meeting to be held prior to beginning Work.

##### **1.03 WEEKLY PROGRESS MEETINGS**

- A. Weekly progress meetings to be held as needed on an agreed upon day by OWNER, ENGINEER AND CONTRACTOR.
- B. Weekly progress meetings to be held at the construction field office.
- C. The meeting will be attended by the CONTRACTOR's superintendent and representatives from all subcontractors currently working on the project.
- D. The CONTRACTOR and subcontractors will be prepared to discuss project progress and scheduling and will outline the exact work to be performed in the following week.

#### **PART 2 – PRODUCTS**

Not Used

#### **PART 3 – EXECUTION**

- 3.01 Notice of preconstruction meeting received by attendees a minimum of five (5) calendar days prior to meeting date.

- A. Attendees at the preconstruction meeting.
  - 1. OWNER
  - 2. ENGINEER
  - 3. CONTRACTOR'S superintendent and foreman.

- B. Notice to include

- 1. Date
- 2. Time
- 3. Agenda



- a. Safety programs.
- b. Review submittals.
- c. Review the responsibilities of each party.
- d. Address CONTRACTORS' questions.
- e. Review lines of authority and communication.
- f. Review principal features of Work.
- g. Review methods for documenting and reporting, and for distributing documents and reports.
- h. Establish protocols for testing.
- i. Establish protocols for handling deficiencies, repairs, and retesting.
- j. Review the time schedule for construction.
- k. Review progress schedules.
- l. Payrolls and labor relations.
- m. Environmental protection.
- n. Payment and procurement of materials.
- o. Establish soil stockpiling locations (if any).

C. Attendance:

- 1. CONTRACTOR'S superintendent.
- 2. Quality control supervisor.
- 3. Safety personnel.
- 4. Major subcontractors' job superintendents.
- 5. OWNER
- 6. Contractor's Health and Safety Manager
- 7. ENGINEER

- D. Specifics of CONTRACTOR'S health, safety, and emergency plan shall be discussed so emergency procedures and safety requirements are understood by those directly related to site Work.

### 3.02 PROGRESS MEETINGS

- A. ENGINEER shall schedule and administer progress meetings as needed or as requested by OWNER.

B. Attendance:

- 1. OWNER or ENGINEER
- 2. CONTRACTOR'S superintendent
- 3. CONTRACTOR'S quality control supervisor
- 4. CONTRACTOR'S safety and emergency coordinator
- 5. Subcontractors as appropriate to agenda
- 6. Suppliers as appropriate to agenda

C. General Meeting Requirements:

- 1. ENGINEER shall administer following general requirements for progress meetings.
  - a. Prepare agenda for meetings
  - b. Make physical arrangements for meetings



- c. Preside at meetings
  - d. Record significant proceedings and decisions of meeting
2. The ENGINEER will reproduce and distribute copies of meeting record within three (3) days after each meeting to participants in meeting and to parties affected by decisions made at meeting. Furnish three (3) copies of minutes to OWNER, two (2) copies to OWNER'S site representative.

D. Typical Agenda:

- 1. Review of Work progress since previous meeting
- 2. Field observations, problems, and conflicts
- 3. Problems impeding Work schedule
- 4. Review of off-site delivery schedules
- 5. Corrective measures and procedures to regain projected schedule
- 6. Planned progress during Work period
- 7. Coordination of schedule
- 8. Review submittal schedules; expedite as required
- 9. Maintenance of quality and safety standards
- 10. Pending changes and substitutions
- 11. Other business

\*\*\*END OF SECTION\*\*\*



## **SECTION 01300**

### **SUBMITTALS**

#### **PART 1 - GENERAL**

##### **1.01 DESCRIPTION**

- A. This section contains requirements for submittals of construction progress schedules, Shop Drawings, test results, construction photographs, and other submittals required by Contract Documents.
- B. Health and Safety Plan (HASP), Erosion Control Plan, and Request for Determination of Approved Equivalent submittal requirements are discussed in Sections 01155, 01570 and 01630 respectively.
- C. Submittal for Review:
  - 1. Submit required materials for ENGINEER'S review in accordance with requirements of Contract Documents.
- D. Submittal for Record:
  - 1. Submit required materials for inclusion into OWNER'S records. Submittal materials may or may not be reviewed by ENGINEER or OWNER.

##### **1.02 CONSTRUCTION PROGRESS SCHEDULES**

- A. Prepare and submit construction progress schedule in accordance with requirements of General Conditions.
- B. Prepare schedules in form of horizontal bar chart, and submit within 1 week of notice to proceed or at the pre-construction meeting.
  - 1. Provide separate horizontal bar for each operation.
  - 2. Horizontal Time Scale: Identify first Work day of each week.
  - 3. Scale and spacings to allow space for notations and future revisions.
  - 4. Arrange listings in order of start of each item of Work.
- C. Construction Progress Schedule:
  - 1. Show complete sequence of construction by activity.
  - 2. Show dates for beginning and completion of each major element of construction and installation dates for major items. Elements shall include, but not be limited to, the following:
    - a. Site preparation.
    - b. Shop Drawing receipt from supplier/manufacturer, submittal to ENGINEER, review and return to supplier/manufacturer.
    - c. Material and equipment order, manufacturer, delivery.
    - d. Performance tests and supervisory services activity.



- e. Each Bid Item.
  - f. Subcontractor's items of Work.
  - g. Final cleanup
  - h. Allowance for inclement weather.
  - i. Miscellaneous items.
3. Show projected percentage of completion for each item as of first day of each month.

D. Schedule Revisions:

- 1. Every 30 days to reflect changes in progress of Work.
- 2. Indicate progress of each activity at date of submittal.
- 3. Show changes occurring since previous submittal of schedule.
  - a. Major changes in scope.
  - b. Activities modified since previous submittals.
  - c. Revised projections of progress and completion.
  - d. Other identifiable changes.
- 4. Provide narrative report as needed to define:
  - a. Problem areas, anticipated delays, and impact on schedule.
  - b. Corrective action recommended and its effect.
  - c. Effect of changes on schedule of other CONTRACTORS.

### 1.03 SHOP DRAWINGS AND SAMPLES

A. Submit Shop Drawings and samples required in individual specification sections.

B. CONTRACTOR'S responsibilities shall include:

- 1. Review Shop Drawings and samples prior to submittal.
- 2. Determine and verify:
  - a. Field measurements.
  - b. Field construction criteria.
  - c. Catalog numbers and similar data.
  - d. Conformance with specifications
- 3. Coordinate each submittal with requirements of Work and of Contract Documents.
- 4. Notify ENGINEER in writing, at time of submittal, of deviations in submittals from requirements of Contract Documents.
- 5. Begin no fabrication or Work that requires submittals until return of submittals with ENGINEER approval.
- 6. Designate in construction progress schedule, dates for submittal and receipt of reviewed shop Drawings and samples.

C. Submittals shall contain:

- 1. Date of submittal and dates of previous submittals.
- 2. Project title and number.
- 3. Contract identification.
- 4. Names of:
  - a. CONTRACTOR



- b. Supplier
- c. Manufacturer
- 5. Identification of product, with identification numbers, and Drawings and specification section numbers.
- 6. Field dimensions, clearly identified.
- 7. Identify details required on Drawings and in specifications.
- 8. Show manufacturer and model number, give dimensions, and provide clearances.
- 9. Relation to adjacent or critical features of Work or materials.
- 10. Applicable standards, such as ASTM or Federal Specification numbers.
- 11. Identification of deviations from Contract Documents.
- 12. Identification of revisions on resubmittals.
- 13. 8-inch by 3-inch blank space for CONTRACTOR or ENGINEER stamps.
- 14. CONTRACTOR'S stamp, signed, certifying to review of submittal, verification of products, field measurement, field construction criteria, and coordination of information within submittal with requirements of Work and Contract Documents.

D. Resubmittal requirements shall include:

- 1. Corrections or changes in submittals required by ENGINEER. Resubmittals are required until approved.
- 2. Shop Drawings and product data:
  - a. Revise initial Drawings or data and resubmit as specified for initial submittal.
  - b. Indicate changes which have been made other than those requested by ENGINEER.
- 3. Submit new samples as required for initial submittal.

E. Distribute reproductions of Shop Drawings and copies of product data which carry ENGINEER'S stamp approval to:

- 1. Record documents file.
- 2. Subcontractors.
- 3. Supplier or fabricator.

F. ENGINEER'S duties include:

- 1. Review submittals with reasonable promptness and in accordance with schedule.
- 2. Affix stamp and signature, and indicate requirements for resubmittal, if required.
- 3. Return submittals to CONTRACTOR for distribution or for resubmittal.

## PART 2 - PRODUCTS

(Not Applicable)



## PART 3 - EXECUTION

### 3.01 SUBMITTAL REQUIREMENTS

A. Provide complete copies of required submittals as follows:

1. Construction progress schedule:
  - a. Two copies of initial schedule
  - b. Two copies of each revision
2. Shop Drawings: Six (6) copies
3. Test results: Three (3) copies
4. Other required submittals:
  - a. Six (6) copies if required for review
  - b. Three (3) copies if required for record

B. Deliver required copies of submittals to ENGINEER.

\*\*\*END OF SECTION\*\*\*



## SECTION 01410

### TESTING LABORATORY SERVICES

#### PART 1 - GENERAL

##### 1.01 REQUIREMENTS INCLUDED

- A. OWNER will employ and pay for services of an independent testing laboratory to perform specified **in place** testing as described in respective sections of specifications.
  - 1. CONTRACTOR shall cooperate to facilitate execution of its required services.
- B. CONTRACTOR shall employ and pay for services on an independent testing laboratory to perform specified **SOURCE TESTING** as described in respective sections.
- C. Related requirements in other parts of project Manual:
  - 1. Inspections and testing required by laws, ordinances, rules, regulations, orders or approvals of public authorities: Conditions of Contract.

##### 1.02 CONTRACTOR RESPONSIBILITIES

- A. Cooperate with laboratory personnel and provide access to Work.
- B. Provide to laboratory preliminary design mix proposed to be used for concrete and other material mixes which require control by testing laboratory.
- C. Furnish copies of product test reports.
- D. Furnish Labor and Facilities:
  - 1. To provide access to Work to be tested.
  - 2. To assist in obtaining samples at project site
  - 3. To facilitate inspections and tests.
  - 4. For storage and curing of test samples.
- E. Notify laboratory and ENGINEER sufficiently in advance of operations to allow for laboratory assignment of personnel and scheduling of tests.
  - 1. When tests or inspections cannot be performed after such notice, reimburse OWNER for laboratory personnel and travel expenses incurred due to CONTRACTOR'S negligence.
- F. Make arrangements with laboratory and pay for additional samples and tests required for CONTRACTOR'S convenience.

\*\*\*END OF SECTION\*\*\*



## **SECTION 01505**

### **MOBILIZATION AND DEMOBILIZATION**

#### **PART 1 - GENERAL**

##### **1.01 SUMMARY**

- A. Section includes preparatory work and operations, including, but not limited to, those necessary for the movement, to and from the project site, of personnel, equipment, supplies, and incidentals; for the establishment of all CONTRACTOR offices and buildings or other facilities necessary for work on the Project.

##### **1.02 SUBMITTALS**

- A. CONTRACTOR shall submit staging plan for approval by OWNER.

#### **PART 2 - PRODUCTS**

Not Used.

#### **PART 3 - EXECUTION**

##### **3.01 GENERAL**

- A. CONTRACTOR is responsible to restore the grounds, staging areas, and access roads/trails to the pre-construction condition prior to demobilization.
- B. Stage equipment and materials in OWNER approved location(s).

\*\*\*END OF SECTION\*\*\*



## **SECTION 01530**

### **PROTECTION OF EXISTING FACILITIES**

#### **PART 1 - GENERAL**

##### **1.01 GENERAL**

- A. The CONTRACTOR shall protect all existing utilities and improvements not designated for removal and shall restore, at CONTRACTOR'S expense, damaged or temporarily relocated utilities and improvements to a condition equal to or better than they were prior to such damage or temporary relocation.
- B. The CONTRACTOR shall verify the exact locations and depths of all utilities that may interfere with the WORK and, if necessary, shall make exploratory excavations of the interfering utilities. All such exploratory excavations shall be performed as soon as practicable after award of the contract and, in any event, a sufficient time in advance of construction to avoid delays of the CONTRACTOR'S work. When such exploratory excavations shall show the utility location as shown to be in error, the CONTRACTOR shall so notify the ENGINEER.

##### **1.02 PROTECTION OF SURVEY MARKERS AND STREET OR ROADWAY MARKERS**

- A. The CONTRACTOR shall not destroy, remove, or otherwise disturb any existing private or public survey markers, or existing street or roadway markers, without proper authorization. No excavation shall be started until all survey or other permanent marker points that may be disturbed by the construction operations have been properly referenced. All survey markers disturbed by the CONTRACTOR shall be restored by a land surveyor, registered in the state in which the project is located, at CONTRACTOR'S expense. All street or roadway markers and other public or private signage disturbed by the CONTRACTOR shall be restored at CONTRACTOR'S expense.

##### **1.03 EXISTING UTILITY OPERATIONS**

- A. Existing utilities shall not be disrupted during construction.

##### **1.04 RESTORATION OF PAVEMENT**

- A. General: Utility crossings under roads or driveways that are shown on the Drawings as jacking or boring locations must be installed by the CONTRACTOR without disturbing the pavement/shouldering of such roads/driveways. All paved areas that are specified to be open cut, or that are damaged by the CONTRACTOR during construction, shall be replaced with similar materials and of equal thickness to match the existing adjacent undisturbed areas, except where specific resurfacing requirements have been called for in these Contract Documents or in the requirements of the agency issuing the permit. CONTRACTOR shall assist the ENGINEER in coordinating the Work with the affected pavement owner. The joint between new pavement and existing pavement shall be saw cut in straight lines.



- B. Temporary Resurfacing: The CONTRACTOR shall place temporary surfacing promptly after backfilling trenches located in streets, drives, or roadways and shall maintain such surfacing for the period of time fixed by the owner of said streets, drives, or roadways before proceeding with the final restoration of improvements.
- C. Permanent Resurfacing: In order to obtain a satisfactory junction with adjacent surfaces, the CONTRACTOR shall saw cut the existing surface so as to provide a clean, sound, vertical joint before permanent replacement of an excavated or damaged portion of pavement. Damaged edges of pavement along excavations and elsewhere shall be trimmed back by saw cutting in straight lines. All pavement restoration and other facilities restoration shall be constructed to finish grades compatible with adjacent undisturbed pavement.
- D. Restoration of Sidewalks or Private Driveways: Wherever private roads, driveways, or field entrances have been removed or damaged for purposes of construction, the CONTRACTOR shall place suitable temporary replacements after trench backfilling and shall maintain them in satisfactory condition until the final restoration thereof has been made.

#### 1.05 NOTIFICATION BY THE CONTRACTOR

- A. Prior to any excavation in the vicinity of any existing **underground** facilities, including all water, sewer, storm drain, gas, petroleum products, or other pipelines; all buried electric power, communications, or television cables; all traffic signal and street lighting facilities; and all roadway and state highway rights-of-way, the CONTRACTOR shall notify the owner's or agencies responsible for such facilities not less than 3 days nor more than 7 days prior to excavation so that a representative of said owner's or agencies can be present during such work if they so desire. The CONTRACTOR shall also contact Gopher State One Call (1-800-252-1166) for locations and physically locate utilities before any excavation is initiated.
- B. Prior to any excavation in the vicinity of any existing **aboveground** facilities, including all electric power, communications, lines, poles, or television cables; all traffic signal and street lighting facilities; public and private signs, structures, and property; the CONTRACTOR shall notify the respective authorities representing the owner's or agencies responsible for such facilities not less than 3 days nor more than 7 days prior to excavation so that a representative of said owner's or agencies can present during such work if they so desire.

#### 1.06 RESTORATION OF VEGETATION AND LANDSCAPING

- A. The CONTRACTOR shall not destroy, remove, or otherwise disturb any vegetation or landscaping without proper authorization and shall minimize such disturbances to only as much as is reasonably required for completion of the Work. All vegetation and landscaping disturbed by the CONTRACTOR shall be restored at CONTRACTOR'S expense and shall be completed in accordance with the Drawings and Specifications and with the CONTRACTOR'S erosion control plan. Where requirements for restoration are not specifically stated in these Contract Documents, CONTRACTOR shall restore to pre-existing conditions or better.



## 1.07 PROTECTION OF CONSTRUCTION IN PROGRESS

- A. Clean and protect construction in progress and adjoining materials in place, during handling and installation. Apply protective covering where required to assure protection from damage and deterioration when project is complete.
- B. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to assure operability without damaging effects.
- C. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging or otherwise deleterious exposure during the construction period. Where applicable, such exposures include, but are not limited to, the following:

- |   |                                   |
|---|-----------------------------------|
| 1. Excessive static or dynamic loading. | 6. Excessive weathering.          |
| 2. Heavy traffic.                       | 7. Unprotected storage.           |
| 3. Soiling, staining, and corrosion.    | 8. Improper shipping or handling. |
| 4. Unusual wear or other misuse.        | 9. Theft.                         |
| 5. Destructive testing.                 | 10. Vandalism.                    |

## PART 2 - PRODUCTS

Not Used

## PART 3 - EXECUTION

Not Used

\*\*\*END OF SECTION\*\*\*



## **SECTION 01550**

### **SITE ACCESS AND STORAGE**

#### **PART 1 - GENERAL**

##### **1.01 SITE ACCESS**

- A. During the execution of this project, all access, movement of construction equipment, and storage of materials shall be within the work limits identified in the Contract Documents. The CONTRACTOR'S material storage and parking areas shall be as approved by the OWNER and ENGINEER.
- B. The CONTRACTOR shall be solely responsible for making arrangements for any necessary off-site storage or shop areas.

##### **1.02 HIGHWAY LIMITATIONS**

- A. The CONTRACTOR shall make an investigation of the condition of available public and private roads and of clearances, restrictions, bridge load limits, and other limitations affecting transportation and ingress and egress to the project. It shall be the CONTRACTOR'S responsibility to construct, maintain, and restore any haul roads required for its construction operations in accordance with the provisions of Section 2051.4 of MN/DOT's "Standard Specifications for Construction", latest Edition with revisions and supplements. CONTRACTOR shall obtain all permits and pay all fees required for oversize loads.

##### **1.03 TRAFFIC CONTROL**

- A. In addition to the traffic control procedures required in the traffic control plan, this section of traffic control requirements is applicable to any other traffic control devices required to complete the work.
- B. For the protection of traffic in public or private streets and ways, the CONTRACTOR shall provide, place, and maintain all necessary barricades, traffic cones, warning signs, lights, and other safety devices in accordance with the requirements of the "Manual of Uniform Traffic Control Devices, Part VI - Traffic Controls for Street and Highway Construction and Maintenance Operations," published by U.S. Department of Transportation, Federal Highway Administration (ANSI D6.1).
- C. The CONTRACTOR shall take all necessary precautions for the protection of the WORK and for the safety of the public. All barricades and obstructions shall be illuminated at night, from sunset until sunrise. The CONTRACTOR shall station such guards or flag persons and shall conform to such special safety regulations relating to traffic control as may be required by the public authorities within their respective jurisdictions. All signs, signals, and barricades shall conform to the requirements of Subpart G, Part 1926, of the OSHA Safety and Health Standards for Construction.
- D. The CONTRACTOR shall remove traffic control devices when no longer needed, repair all damage caused by installation of the devices, and shall remove post settings and backfill the resulting holes to match grade.



## 1.05 TEMPORARY CROSSINGS

- A. General: The CONTRACTOR shall provide continuous, unobstructed, safe, and adequate pedestrian and vehicular access to fire hydrants; sidewalks and trails; commercial, residential, and industrial establishments; agricultural field entrances; and parking lots, as applicable. The CONTRACTOR shall cooperate with parties involved in the delivery of mail and removal of trash and garbage so as to maintain existing schedules for such services. Vehicular access to residential and agricultural driveways shall be maintained, except when necessary construction precludes such access for reasonable periods of time.
- B. Temporary Bridges: Wherever necessary, the CONTRACTOR shall provide suitable temporary bridges or steel plates over unfilled excavations, except in such cases where the CONTRACTOR has secured the written consent of the individuals or authorities of jurisdiction to omit such temporary bridges or steel plates. Such written consent shall be delivered to the ENGINEER prior to excavation. All such bridges or steel plates shall be maintained in service until access is provided across the backfilled excavation. Temporary bridges or steel plates for street and highway crossing shall conform to the requirements of the authority having jurisdiction in each case, and the CONTRACTOR shall adopt designs furnished by said authority for such bridges or steel plates, or shall submit designs to said authority for approval, as may be required.
- C. Fire Hydrants: Fire hydrants on or adjacent to the WORK shall be kept accessible to fire-fighting equipment at all times.
- D. Drainage: Temporary provisions shall be made by the CONTRACTOR to assure the proper functioning of all drainage facilities including but not limited to natural waterways, ditches, culverts, etc.

## 1.06 PARKING

- A. The CONTRACTOR shall:
  - 1. Direct its employees to park in areas that do not obstruct local traffic or sight lines.
  - 2. Maintain traffic and parking areas in a sound condition, free of excavated material, construction equipment, mud, and construction materials.
  - 3. Repair potholes, low areas that collect standing water, and other deficiencies.
  - 4. Not allow overnight parking of any vehicles or equipment on city, County, Township, or State jurisdictional roadways and streets.

## PART 2 - PRODUCTS

Not Used

## PART 3 - EXECUTION

Not Used

\*\*\*END OF SECTION\*\*\*



## **SECTION 01560**

### **PROTECTION OF ENVIRONMENT**

#### **PART 1 - GENERAL**

##### **1.01 DESCRIPTION**

- A. CONTRACTOR, in executing Work, shall maintain Work areas on- and off-site free from environmental pollution that would be in violation of any federal, state or local regulations.

##### **1.02 PROTECTION OF WATERWAYS**

- A. Observe rules and regulations of State of Minnesota and agencies of U.S. government prohibiting pollution of any lake, stream, river or wetland by dumping of refuse, rubbish, dredge material or debris therein.
- B. CONTRACTOR(S) are specifically cautioned that disposal of materials into any waters of state must conform with requirements of U.S. Army Corps of Engineers. Permits, if needed, shall be obtained by CONTRACTOR at CONTRACTOR'S cost.
- C. Provide holding ponds or approved method which will divert flows, including storm flows and flows created by construction activity, so as to prevent excessive silting of waterways or flooding damage to property.
- D. Comply with procedures outlined in U.S. EPA manuals entitled, "Guidelines for Erosion and Sedimentation Control Planning and Implementation," Manual EPA-72-015 and "Processes, Procedures, and Methods to Control Pollution Resulting from All Construction Activity," manual EPA 43019-73-007.

##### **1.03 DISPOSAL OF EXCESS EXCAVATED WASTE AND OTHER WASTE MATERIALS**

- A. Dumping of waste oil or fuel at this site will be unacceptable. Accidental fuel or oil spills will require excavation of contaminated soils and disposal at an authorized facility. CONTRACTOR shall be responsible for cleanup.

##### **1.04 PROTECTION OF AIR QUALITY**

- A. Minimize air pollution by requiring use of properly operating combustion emission control devices on construction vehicles and equipment used by CONTRACTORS, and encouraging shutdown of motorized equipment not actually in use.
- B. Trash burning will not be permitted on construction site.



#### 1.05 USE OF CHEMICALS

- A. Chemicals used during project construction or furnished for project operation, whether herbicide, pesticide, disinfectant, polymer, reactant, or of other classification, must show approval of either U.S. EPA or U.S. Department of Agriculture or any other applicable regulatory agency.
- B. Use of such chemicals and disposal of residues shall be in conformance with manufacturer's instructions.

#### 1.06 NOISE CONTROL

- A. Conduct operations to cause least annoyance to residents in vicinity of Work, and comply with applicable local ordinances.
- B. Conduct operation of dumping rock and of carrying rock away in trucks so as to cause minimum of noise and dust.
- C. Hours of operation shall comply with City Code and Ordinance.

#### 1.07 DUST CONTROL

- A. The CONTRACTOR shall provide positive methods and apply dust control water to minimize raising dust from construction operation, and provide positive means to prevent airborne dust from dispersing into the atmosphere. Chemical dust suppressant shall not be used. CONTRACTOR shall supply pumping equipment, as needed.
- B. Comply with local environmental regulations for dust control and direction of OWNER. If CONTRACTOR'S dust control measures are considered inadequate, ENGINEER will require CONTRACTOR to take additional dust control measures.

#### PART 2 - PRODUCTS

Not Used.

#### PART 3 - EXECUTION

Not Used.

\*\*\*END OF SECTION\*\*\*



## **SECTION 01568**

### **AIR, LAND AND WATER POLLUTION CONTROL**

#### **PART 1 GENERAL**

##### **1.01 SUMMARY**

**A. Section Includes:**

1. General requirements for the control of pollution from construction sites and related activities.

**B. Related Section:**

1. Section 01570 - Erosion Control.

##### **1.02 REFERENCES**

- A. MN/DOT Section 1717 - Air, Land, and Water Pollution.**

##### **1.03 QUALITY ASSURANCE**

**A. Regulatory Requirements:**

1. Conduct all operations to prevent, control and abate the pollution of air, land and water in accordance with the rules, regulations and standards adopted and established by the following agencies:
  - a. Minnesota Pollution Control Agency.
  - b. Minnesota Department of Natural Resources.
  - c. U.S. Army Corps of Engineers.

##### **1.04 SCHEDULING**

- A. Schedule and conduct all operations to minimize soil erosion and prevent siltation and the resultant turbidity of public waters.**

#### **PART 2 PRODUCTS**

Not Used

#### **PART 3 EXECUTION**

##### **3.01 PREPARATION**

- A. Review all local conditions and regulations pertaining to air and land pollution prior to commencing operations.**



### 3.02 PROTECTION OF WATERS

- A. Prevent pollution of flowing or impounded waters from particulate or liquid matter that may be harmful to fish and wildlife or detrimental to public use.
- B. Remove sediment from aggregate wash operations by filtration or settlement prior to discharge into public waters.
- C. Do not discharge wash water or waste from concrete mixing operations into live streams.
- D. Fueling operations shall be conducted in a manner to not cause any pollution.
- E. Street sweeping is required daily during trucking operations or as required by OWNER.

**\*\*END OF SECTION\*\***



## **SECTION 01570**

### **EROSION AND SEDIMENT CONTROL**

#### **PART 1 - GENERAL**

##### **1.01 SUMMARY**

- A. Managing storm water runoff and other related water discharges to minimize sediment pollution during construction.

##### **1.02 REFERENCES**

- A. Minnesota Department of Transportation, (MN/DOT), Standard Specifications for Construction, 2016 Edition with Supplements:
  - 1. 2130 – Application of Water
  - 2. 2573 – Storm Water Management
  - 3. 2575 – Controlling Erosion and Establishing Turf

##### **1.03 SUBMITTALS**

- A. Manufacturer's certificates indicating specification conformance test results of furnished material.
- B. Erosion Control Schedule and Site Plan
  - 1. Conform to MnDOT Spec. 1717.2D
  - 2. Submit when requested by Engineer.

##### **1.04 QUALITY ASSURANCE**

- A. Erosion Control Supervisor
  - 1. Responsible for directing the erosion control operations and insure compliance with all Federal, State, and Local Ordinances and regulations.
- B. Certified Installer
  - 1. Provide a certified installer to install or direct installation of erosion and sediment control practices.
  - 2. Certified by the University of Minnesota Erosion Control Inspector/Installer Certification Program or approved equal.



1.05 PERMITS

- A. Project disturbs 1 or more acres of total land area. Co-submittal with Owner of a completed NPDES application form for the MPCA's General Stormwater Permit for Construction Activity is required. Owner will pay NPDES application fee.

1.06 SEQUENCING AND SCHEDULING

- A. Install sediment control measures prior to grading activities.
- B. Coordinate construction operations so that erosion and sediment control measures (temporary or permanent) are installed and maintained concurrently with the remaining work of the project.
- C. Infiltration areas and constructed infiltration systems should not be constructed until the contributing drainage area and/or adjacent construction has been completely stabilized. When the timing of construction is not possible, the Contractor shall insure sediment from exposed soil areas does not enter into the filtration area or system.
- D. If the Contractor fails to install erosion or sediment measures, the Engineer may withhold payment from related work until the control measures are in place by the Contractor.
  - 1. If the Contractor fails to take action ordered by the Engineer to remedy erosion or sediment control problems, the Engineer shall issue a Written Order to the Contractor.
  - 2. The Contractor shall respond within 24 hours with sufficient personnel, equipment, materials, and conduct the required work or be subject to a \$1,000 per calendar day deduction for noncompliance.
- E. Establish permanent turf in accordance with Section 02930.

1.07 METHOD OF MEASUREMENT AND PAYMENT

- A. Refer to Section 01025 – Measurement & Payment.
- B. All other Work and costs of this Section shall be incidental to the Project and included in the TOTAL BASE BID.

PART 2 - PRODUCT

2.01 SILT FENCE: Conform to MnDOT Spec. 3886

- A. Machine-sliced.

2.02 TEMPORARY CONSTRUCTION ENTRANCE

- A. Conform to the details on the Drawings.



## 2.03 MULCH

- A. Conform to MnDOT Spec. 3882, Type 1.
- B. Hydraulic soil stabilizer may be used in lieu of mulch with the approval of the Engineer.
- C. Mulch shall be disked into place where applicable and as directed by Engineer.

## 2.04 EROSION CONTROL BLANKET

- A. Woven Erosion Control Blanket: Rolanka BioD-Mat 40 or approved equal.
- B. Non-Woven Erosion Control Blanket: Conform to MnDOT Spec. 3885, Category 3, Type Straw 2S, natural fiber netting only. No poly netting allowed.

## 2.05 FLOATING SILT CURTAIN

- A. Conform to MnDOT Spec. 2573, Spec 3887 and the details on the Drawings.

## 2.06 INLET PROTECTION

- A. Inlet protection for exposed surfaces and paved streets with concrete curb and gutter
  - 1. Conform to the details on the Drawings

## 2.07 SEDIMENT CONTROL LOG

- A. Conform to MnDOT Spec 3897.
  - 1. Straw or wood fiber biorolls, 12 inches in diameter.
  - 2. Compost or rock logs, 12 inches in diameter.

## 2.08 TEMPORARY SEED

- A. Fescue (Cover Crop) Seed Mix.  
Seeding rate: 100 lb/acre

SCIENTIFIC NAME	COMMON NAME	% of Mix
<i>Festuca rubra var. rubra</i>	Creeping Red Fescue	25
<i>Festuca rubra subs. fallax</i>	Chewings Fescue	25
<i>Festuca brevipila</i>	Hard Fescue	25
<i>Festuca ovina</i>	Sheep Fescue	25

## 2.09 TEMPORARY SEDIMENTATION BASIN

- A. Conform to the details on the Drawings.



## PART 3 – EXECUTION

### 3.01 GENERAL

- A. Comply with all applicable laws, ordinances, regulations, permit requirements, orders pertaining to erosion and sediment control and stormwater discharge.
- B. Take necessary precautions to prevent off-site damage resulting from work conducted on the project related to stormwater runoff.

### 3.02 INSTALLATION

- A. Install temporary stormwater management and sediment control devices in conformance with the details, typical sections, and elevations shown on the Drawings.
- B. The location of the temporary stormwater and sediment control devices may be adjusted to accommodate actual field conditions and increase the effectiveness of the installation.
- C. Silt fence: Conform to MnDOT Spec. 2573.3B
  - 1. Install at locations shown on the Drawings or as directed by the Engineer.
  - 2. Use additional measures, such as rock, placed along the base of the silt fence when the geotextile cannot be properly trenched.
- D. Temporary Rock Construction Entrance
  - 1. Install at locations shown on the Drawings or as directed by the Engineer.
  - 2. Construct construction entrance prior to beginning grading operations.
  - 3. Inspect construction entrance daily for mud accumulation to minimize tracking of sediment onto public roadways.
- E. Slope (Cat) Tracking
  - 1. Slope tracking consists of operating a dozer up and down slopes so that the cleats of the tracks create grooves perpendicular to the slope.
  - 2. Required on all slopes equal to or greater than 3:1 (H:V).
- F. Erosion Control Blanket
  - 1. Install immediately in accordance with MnDOT Spec. 2575.3G.2.
  - 2. Install blanket parallel to the direction of flow.
- G. Inlet Protection
  - 1. Provide effective storm drain inlet protection over the course of the project until all sources with potential for discharging to inlets have been stabilized.
  - 2. Place devices so the driving hazards or obstructions are minimized. The devices shall be cleaned regularly and all devices must have an emergency overflow to reduce the potential for local flooding.



### 3.03 MAINTENANCE

#### A. Conform to MnDOT Spec. 2575.3K and as follows:

1. Inspect, maintain, and repair any washouts or accumulations of sediment that occur as a result of construction.
2. Inspection of all erosion and sediment control items shall take place immediately after each runoff event and at least daily during prolonged rainfall. Any required repairs shall be made immediately.
3. The contractor shall maintain the items until they are no longer required and removed.
4. Upon final acceptance the contractor shall remove all temporary erosion control measures.

#### B. Sediment Removal: Conform to MnDOT Spec. 2573.3P

1. If an erosion control device has been reduced in capacity by 30 percent or more, the Contractor shall restore such features to their original condition.

\*\*\*END OF SECTION\*\*\*



## **SECTION 01590**

### **TEMPORARY CONSTRUCTION FACILITIES AND UTILITIES**

#### **PART 1 - GENERAL**

##### **1.01 SUMMARY**

- A. Section includes requirements for CONTRACTOR and temporary utilities.

##### **1.02 UTILITY REQUIREMENTS**

###### **A. Electrical**

- 1. Provide temporary power supply as may be required for construction activities and appurtenances.

###### **B. Water**

- 1. No water supply available at site for CONTRACTOR'S use
- 2. Obtain and supply water for usage at site
- 3. Supply potable water for personnel use at site

###### **C. Sanitary facilities**

- 1. Provide sanitary facilities for personnel at the site.

- D. Fire Protection: CONTRACTOR shall make all arrangements necessary to assure that the Site and the Work had adequate fire protection services throughout the duration of the Work. Any special fees or charges imposed by the local governmental units or other organization to provide such services shall be paid by CONTRACTOR.

- E. Lighting: CONTRACTOR shall furnish such temporary lighting as may be required to perform the Work.

##### **1.03 TRASH DISPOSAL**

- A. The CONTRACTOR shall be responsible for collecting and properly disposing of all trash and debris. Trash, debris, and waste shall not be allowed to accumulate.

#### **PART 2 - PRODUCTS**

Not Used.



## PART 3 - EXECUTION

### 3.01 GENERAL

- A. Examine and verify site acceptability to receive and construct temporary utilities.
- B. Connect to utilities provided by CONTRACTOR.
- C. Provide utilities required for project Work.
- D. Remove personnel sanitary sewer facilities upon project completion.

\*\*\*END OF SECTION\*\*\*



## **SECTION 01600**

### **MATERIAL AND EQUIPMENT**

#### **PART 1 – GENERAL**

##### **1.01 SUMMARY**

- A. Material and Equipment Incorporated into Work:
  - 1. Conform to applicable specifications and standards.
  - 2. Comply with size, make, type, and quality specified or as specifically approved.
- B. Manufactured and Fabricated Materials and Equipment:
  - 1. Design, fabricate, and assemble in accordance with engineering and shop practices standard with industry.
  - 2. Material and equipment shall be suitable for service conditions.
- C. Do not use material or equipment for purpose other than for which it is designed or specified.

##### **1.02 MANUFACTURER'S INSTRUCTIONS**

- A. Installation of materials shall comply with manufacturer's instructions. Obtain and distribute printed copies of such instructions to parties involved in installation, including 2 copies to OWNER'S REPRESENTATIVE.
  - 1. Maintain one set of complete instructions at job site during installation until completion of entire Project.
- B. Handle, store, install, connect, clean, condition, and adjust materials in accordance with manufacturer's written instructions and in conformance with Specifications.
  - 1. If job conditions or specified requirements conflict with manufacturer's instructions, consult ENGINEER for further instructions.
    - a. Do not proceed with Work without written instructions.

#### **PART 2 – PRODUCTS**

Not Used

#### **PART 3 – EXECUTION**

Not Used

\*\*\*END OF SECTION\*\*\*



## **SECTION 01630**

### **SUBSTITUTIONS**

#### **PART 1 - GENERAL**

##### **1.01 SUMMARY**

- A. Section includes basic procedures for request for consideration of proposed substitutions during and after the bidding period.

##### **1.02 SUBMITTALS**

- A. Submit enclosed Substitution request form
  - 1. Attachment 1: Prior to Bid Opening
  - 2. Attachment 2: After Contract Award
- B. Procedures for Contractors request for consideration of substitute as an “Approved Equivalent”
  - 1. To consider products of other manufacturers as “Approved Equivalent” CONTRACTOR shall demonstrate the substitution is equal to or better than the specified item. Factors to be addressed are:
    - a. Environment (ambient conditions, climate, etc.)
    - b. Quality
    - c. Dependability
    - d. Durability
    - e. Strength
    - f. Performance
    - g. Operation Efficiency
    - h. Maintenance
    - i. Warranty
    - j. Overall Cost Effectiveness
  - 2. Contractor shall submit only proposed items that duplicate the intended design or function that are currently in satisfactory use at other similar landfill sites. The CONTRACTOR may be asked to provide references to other sites where the proposed substitutions have been installed.
  - 3. Basis of Acceptance: The CONTRACTOR’S provided data as stated in paragraphs 1 and 2 above shall become the basis for accepting the proposed substitution. Substitutions shall not be accepted without the approval of the ENGINEER.

#### **PART 2 - PRODUCTS**

Not Used

#### **PART 3 - EXECUTION**

Not Used



**Attachment 1 to Section 01630**  
**REQUEST FOR DETERMINATION OF APPROVED EQUIVALENT - PRIOR TO BID OPENING**

---

Project: _____	Substitution Request Number: _____
_____	From: _____
To: _____	Date: _____
_____	_____
Re: _____	Wenck Project #: _____

---

Specification Title: _____	Description: _____
Drawing #: _____	Detail #: _____
Section: _____	Page: _____ Article/Paragraph: _____

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Proposed Substitution: \_\_\_\_\_

Manufacturer: \_\_\_\_\_ Address: \_\_\_\_\_ Phone: \_\_\_\_\_

Trade Name: \_\_\_\_\_ Model No.: \_\_\_\_\_

Installer: \_\_\_\_\_ Address: \_\_\_\_\_ Phone: \_\_\_\_\_

Differences between proposed substitution and specified product: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

☐ Point-by-point comparative data attached – REQUIRED BY SECTION 01630

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Similar Installation:

Project: _____	Engineer: _____
Address: _____	Owner: _____
_____	Date Installed: _____

Proposed substitution affects other parts of Work: ☐ No ☐ Yes, explain \_\_\_\_\_

\_\_\_\_\_

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Supporting Data Attached: ☐ Drawings ☐ Product Data ☐ Samples ☐ Tests ☐ Reports ☐ \_\_\_\_\_

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**Attachment 1 to Section 01630**  
**SUBSTITUTION REQUEST (Page 2 of 2) Prior to Bid Opening**

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The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
  - Same warranty will be furnished for proposed substitution as for specified product.
  - Same maintenance service and source of replacement parts, as applicable, is available.
  - Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
  - Cost data as stated above is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
  - Proposed substitution does not affect dimensions and functional clearances.
  - Coordination, installation, and changes in the Work as necessary for accepted substitution will be complete in all respects.
- 

Submitted by: \_\_\_\_\_

Signature: \_\_\_\_\_

Firm: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_

Attachments: \_\_\_\_\_

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**ENGINEERS REVIEW AND ACTION**

- ☐ Substitution approved – Make submittals in accordance with Specification Section 01300.
- ☐ Substitution rejected – Use specified materials.
- ☐ Substitution Request received too late – Use specified materials.

Signed by: \_\_\_\_\_ Date: \_\_\_\_\_

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Additional Comments: ☐ Contractor ☐ Subcontractor ☐ Supplier ☐ Manufacturer ☐ Engineer

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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**Attachment 2 to Section 01630**  
**REQUEST FOR DETERMINATION OF APPROVED EQUIVALENT - AFTER CONTRACT**  
**AWARD**

---

Project: _____	Substitution Request Number: _____
_____	From: _____
To: _____	Date: _____
_____	_____
Re: _____	Wenck Project #: _____

---

Specification Title: _____	Description: _____
Drawing #: _____	Detail #: _____
Section: _____	Page: _____ Article/Paragraph: _____

---

Proposed Substitution: \_\_\_\_\_

Manufacturer: \_\_\_\_\_ Address: \_\_\_\_\_ Phone: \_\_\_\_\_

Trade Name: \_\_\_\_\_ Model No.: \_\_\_\_\_

Installer: \_\_\_\_\_ Address: \_\_\_\_\_ Phone: \_\_\_\_\_

History: ☐ New Product ☐ 2-5 years old ☐ 5-10 years old ☐ More than 10 years old

Differences between proposed substitution and specified product: \_\_\_\_\_

\_\_\_\_\_

☐ Point-by-point comparative data attached – REQUIRED BY SECTION 01630

---

Reason for not providing specified item: \_\_\_\_\_

Similar Installation:

Project: _____	Engineer: _____
Address: _____	Owner: _____
_____	Date Installed: _____

Proposed substitution affects other parts of Work: ☐ No ☐ Yes, explain \_\_\_\_\_

\_\_\_\_\_

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Savings to Owner for accepting substitution: \_\_\_\_\_ (\$\_\_\_\_\_).

Proposed substitution changes Contract Time: ☐ No ☐ Yes \_\_\_\_\_ days.

---

Supporting Data Attached: ☐ Drawings ☐ Product Data ☐ Samples ☐ Tests ☐ Reports ☐ \_\_\_\_\_



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**Attachment 2 to Section 01630**  
**SUBSTITUTION REQUEST (Page 2 of 2) - After Contract Award**

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The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated above is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including engineering design, detailing, and construction costs caused by the substitution.
- Coordination, installation, and changes in the Work as necessary for accepted substitution will be complete in all respects.

---

Submitted by: \_\_\_\_\_

Signature: \_\_\_\_\_

Firm: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_

Attachments: \_\_\_\_\_

---

**ENGINEERS REVIEW AND ACTION**

- ☐ Substitution approved – Make submittals in accordance with Specification Section 01300.
- ☐ Substitution rejected – Use specified materials.
- ☐ Substitution Request received too late – Use specified materials.

Signed by: \_\_\_\_\_ Date: \_\_\_\_\_

---

Additional Comments: ☐ Contractor ☐ Subcontractor ☐ Supplier ☐ Manufacturer ☐ Engineer

---

\*\*\*END OF SECTION\*\*\*

01630-5

Substitutions



## **SECTION 01700**

### **PROJECT CLOSEOUT**

#### **PART 1 – GENERAL**

##### **1.01 FINAL CLEANUP**

- A. The CONTRACTOR shall promptly remove from the vicinity of the completed WORK, all rubbish, unused materials, concrete forms, construction equipment, and temporary facilities and erosion control used during construction. Final acceptance by the OWNER will be withheld until the CONTRACTOR has satisfactorily performed the final cleanup.

##### **1.02 FINAL SUBMITTALS**

- A. The CONTRACTOR, prior to requesting final payment, shall obtain and submit the following items to the ENGINEER for transmittal to the OWNER:
  - 1. Certificates of inspection and acceptance by any local governing agencies having jurisdiction.
  - 2. Releases from all parties who are entitled to claims against the subject project, property, or improvement pursuant to the provisions of law.
  - 3. Form IC-134 as required per Minnesota Statute §290.97.

##### **1.03 MAINTENANCE AND WARRANTY**

- A. The CONTRACTOR shall comply with the maintenance and warranty requirements contained in Article 14.03G TESS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK of the General Conditions; and also all Supplementary Conditions. The CONTRACTOR shall warrant workmanship and materials, including settling for one year following final acceptance by the OWNER. The CONTRACTOR shall warrant vegetation growth per Section 02980.
- B. Replacement of earth fill or backfill or replacement of roadway, where it has settled below the required finish elevations, shall be considered as a part of such required correction, and any repair or resurfacing constructed by the CONTRACTOR which becomes necessary by reason of such settlement shall likewise be considered as a part of such correction.
- C. The CONTRACTOR shall make all corrections promptly upon receipt of a written order from the OWNER. If the CONTRACTOR fails to make such corrections promptly, the OWNER reserves the right to do the WORK and the CONTRACTOR and its surety shall be liable to the OWNER for the cost thereof.

#### **PART 2 - PRODUCTS - Not Used**

#### **PART 3 - EXECUTION - Not Used**

**\*\*\*END OF SECTION\*\*\***



## **SECTION 01711**

### **MAINTENANCE AND FINAL CLEANUP**

#### **PART 1 - GENERAL**

##### **1.01 DESCRIPTION**

- A. The CONTRACTOR is responsible for protecting existing trees, sprinkler systems and other improvements. Any tree roots damaged shall be neatly cut perpendicular to the root.
- B. The CONTRACTOR shall report to the OWNER in writing any undesirable conditions, such as silt or sand in manholes and valve boxes, damaged castings and valve boxes, etc., prior to commencing work on any street. Once work has commenced it will be assumed that all damage to underground installations except that reported above, has been caused by the CONTRACTOR'S operations and it will be the CONTRACTOR'S responsibility to make necessary repairs.
- C. All underground utilities including manholes and valve boxes shall be maintained in a condition that allows access in case emergency use is required
- D. Underground utilities shall be maintained in an operable condition. All debris or sediment shall be removed immediately.
- E. All debris, waste materials or other remains from construction shall be removed from the site and properly disposed of before final acceptance of work.
- F. Each Contract item will not be finally accepted until it's associated clean up is performed.
- G. Until each item's clean up is completed, the OWNER may withhold partial payments or deduct the estimated clean up cost from the partial payment value.
- H. The CONTRACTOR is responsible for keeping streets and roadways clean of dust, dirt, mud and debris both inside and outside the work area.
  - 1. This may require measures to clean trucks before leaving the site and sweeping paved areas.
  - 2. Roadways shall be cleaned by a pickup sweeper within 24 hours of direction by the OWNER.
- I. The Contractor's staging, storage, and equipment parking areas shall be seeded before final acceptance of the work.



## 1.02 DURATION OF WARRANTY PERIOD

Warranty:

- A. Contractor's warranty period for all work, except vegetation, shall be for two years and begin immediately after final acceptance of project.
- B. Contractor's warranty for re-vegetation shall meet requirements of Section 02980.

## PART 2 - PRODUCTS

Not used.

## PART 3 - EXECUTION

Not used.

**\*\*END OF SECTION\*\***



## **SECTION 01720**

### **PROJECT RECORD DOCUMENTS**

#### **PART 1 - GENERAL**

##### **1.01 SUMMARY**

- A. Maintain at site one record copy of:
  - 1. Drawings.
  - 2. Specifications.
  - 3. Addenda.
  - 4. Change orders and other modifications to Contract.
  - 5. OWNER and ENGINEER field orders, written instructions or clarifications.
  - 6. Approved submittals.
  - 7. Field test records.
  - 8. Construction photographs.
  - 9. Associated permits.
  - 10. Certificates of inspection and approvals.

##### **1.02 MAINTENANCE OF DOCUMENTS AND SAMPLES**

- A. Store documents and samples in a secure location apart from documents used for construction.
  - 1. Provide files and racks for storage of documents
  - 2. Provide secure storage space for storage of samples
- B. Maintain documents in clean, dry, legible condition and in good order. Do not use record documents for construction purposes.
- C. Make documents and samples available at all times for inspection by OWNER and ENGINEER.
- D. Failure to properly maintain record documents may be reason to delay a portion of progress payments until records comply with Contract Documents.

##### **1.03 RECORD DOCUMENTS**

- A. Maintain record set of Drawings and Specifications legibly changed to transfer approved modifications in completed Work that differ from Contract Documents.
- B. Label each document "PROJECT RECORD" in neat, large printed letters.
- C. Record information concurrently with construction progress.
  - 1. Do not conceal Work until required information is recorded.
  - 2. Record changes made by Written Amendment, Field Order, Change Order, or Work Directive Change.



D. Drawings

1. General:
  - a. Horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
  - b. Location of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of structure.
  - c. Field changes.
  - d. Details not on original Drawings.
  - e. Location and identification of piping.

1.04 SUBMITTALS

A. At Substantial Completion

1. Deliver one marked up set of Drawings to OWNER for use in preparation of record drawings.
2. Provide three hard copies and three electronic PDF copies saved to a compact disk. The saved files shall be clearly identified and organized in a similar manner to the hard copy. Data saved on the disk shall be accessible and neatly organized.

B. Accompany submittals with transmittal letter in duplicate, containing following.

1. Date.
2. Project title and number.
3. CONTRACTOR's name and address.
4. Title of record document.
5. Signature of CONTRACTOR or AUTHORIZED REPRESENTATIVE.

\*\*\*END OF SECTION\*\*\*



# **DIVISION 2**

## **Site Work**



## **SECTION 02102**

### **CLEARING, GRUBBING, AND HARVESTING**

#### **PART 1 – GENERAL**

##### **1.01 SUMMARY**

- A. This section includes the clearing, grubbing, harvesting, and wood chipping trees and brush. Trees are to be used for Log Toe with Root Wads (Section 02966), Root Wads, Log Vanes, and Seating Logs with the remaining trees to be chipped onsite or removed offsite.

##### **1.02 REFERENCE SPECIFICATIONS, CODES AND STANDARDS**

- A. Minnesota Department of Transportation, (MN/DOT), Standard Specifications for Construction, 2016 Edition with Supplements:
  - 1. 2101 – Clearing and Grubbing

##### **1.03 COORDINATION**

- A. The CONTRACTOR shall coordinate work with others performing work at project site.
- B. The CONTRACTOR shall notify the OWNER prior to the start of clearing and harvesting materials.
- C. The CONTRACTOR shall notify Gopher State One Call (800-252-1166) to mark locations of utilities prior to beginning the Work.

##### **1.04 METHOD OF MEASUREMENT AND PAYMENT**

- A. Refer to Section 01025 – Measurement & Payment.
- B. All other Work and costs of this Section shall be incidental to the Project and included in the TOTAL BASE BID.

#### **PART 2 – PRODUCTS**

Not Used

#### **PART 3 – EXECUTION**

##### **3.01 APPLICABLE SPECIFICATIONS**

- A. The CONTRACTOR shall perform all WORK under this section in conformance with the provisions of Mn/DOT Spec 2101 – Clearing and Grubbing.



### 3.03 PROTECTION

The CONTRACTOR shall:

- A. Conduct all operations within the limits of construction, as indicated on the Drawings.
- B. Protect all trees and plant materials not designated for removal.
- C. Conduct operations in such a manner that does not damage protected trees and vegetation outside of limits of construction.

### 3.04 GENERAL

- A. Clearing and grubbing consists of cutting and disposing of trees, brush, windfalls, logs, and other vegetation, and removing and disposing of roots, stumps, stubs, grubs, logs, and other timber.
- B. Harvesting consists of cutting trees to size on site for use as indicated on drawings (i.e. log toe with root wads, nursery logs, or seating logs) and piling unused materials in a central pile for later disposal or wood chipping.
- C. Cleared trees remaining not used for log toe with root wads, nursery logs, or seating logs shall be either wood chipped onsite and spread over existing trails nearby (south side of creek, within approximately 200 feet of work area) or hauled offsite and disposed.
- D. Do not remove, cut down, or pull out trees unless clearly marked, and then only after approved by OWNER.
- E. Protect all trees and plant materials that do not need to be removed to complete the Work.

### 3.05 TREE REMOVAL

The CONTRACTOR shall:

- A. Tree removal shall be completed by qualified personnel/businesses and according to accepted horticulture practices.

### 3.06 CLEARING

The CONTRACTOR shall:

- A. Cut and remove trees, brush, shrubs, windfalls, logs, stumps, roots, fallen timber, and other vegetation.
- B. Prune and remove any low hanging or unsafe branches.
- C. When grubbing not required, the cutoff point shall be 6" above the ground.
- D. When using trees for Root Wads as part of Log Toe with Root Wad, root wad shall remain as indicated in Section 02966 and as detailed on the Drawings.



### 3.07 GRUBBING

The CONTRACTOR shall:

- A. Root wads to remain intact for Root Wads. All other stumps to remain in ground and cut flush at ground level.
- B. Backfill or smooth out depressions with native soils as directed by the ENGINEER.

### 3.08 DISPOSAL

The CONTRACTOR shall:

- A. Dispose of ash, pine, elm, and oak wilt infected trees in accordance with proper forestry disposal standards that prevent spreading insects and disease pests.
- B. Dispose of all associated debris resulting from clearing and grubbing offsite, at a location determined by the CONTRACTOR, in conformance with all codes, rules and regulations.
- C. Consider Beneficial Use Designations for unadulterated wood, wood chips, bark and sawdust.
- D. Be prohibited from the burying or burning of cleared waste within the limits of construction.
- E. Provide to the Engineer an Emerald Ash Borer compliance agreement with the Minnesota Department of Agriculture. Dispose of ash, pine, elm, and oak wilt infected trees in accordance with proper forestry disposal standards that prevent spreading insects and disease pests.
- F. Consider chipping or tub grinding of trees designated for removal using the mulch for nearby existing trails.

\*\*\*END OF SECTION\*\*\*



**SECTION 02211**  
**SITE PREPARATION**

**PART 1 - GENERAL**

**1.01 SUMMARY**

- A. Section includes the requirements for site preparation.

**1.02 DEFINITIONS**

- A. **Structures and Surface Features:** For purpose of this section, shall mean existing structures and surface features, including but not limited to buildings, pavements, curb and gutter, signs, posts, fences, trees, shrubs, other landscaped features.
- B. **Utilities:** Existing gas mains; water mains; electric lines; conduits, telephone, and other communication lines; sewer pipe; cable television, other utilities, and appurtenances.

**1.03 PROJECT/SITE CONDITIONS**

- A. Provide 72 hour notice, prior to beginning construction, to owners of utilities, structures, and surface features.

**1.04 COORDINATION**

- A. Coordinate work with others performing work at project site.
- B. Call **651-454-0002 (Metro Area) or 1-800-252-1166 (Statewide)** to check for utilities prior to beginning Work.

**1.05 METHOD OF MEASUREMENT AND PAYMENT**

- A. Refer to Section 01025 – Measurement & Payment.
- B. All other Work and costs of this Section shall be incidental to the Project and included in the TOTAL BASE BID.

**PART 2 - PRODUCTS**

(Not Used)



## PART 3 - EXECUTION

### 3.01 PREPARATION

- A. Provide protection and support during construction for existing utilities, structures, and surface features adjacent to construction area or easements and rights-of-way.
- B. Remove obstructions such as mounds of dirt, stone or debris located within working limits.
- C. Obstructions such as street signs, small culverts, and guard posts located within construction easements of rights-of-way may be removed if promptly replaced to original condition unless otherwise specified.

### 3.02 RESTORATION

- A. Restore existing utilities, surface feature, and structures to condition equal to or exceeding condition which existed prior to construction per approval of the OWNER/ENGINEER.
- B. Restoration of access roads and staging areas may require, but are not limited to:
  - 1. Scarification
  - 2. Topsoil
  - 3. Seeding
  - 4. Sodding
  - 5. Mulching
  - 6. Bituminous and concrete repair/replacement

### 3.03 MAINTENANCE AND RESTORATION OF ON-SITE AND OFF-SITE ACCESS ROADS

- A. While hauling operations are in progress, CONTRACTOR shall maintain haul roads in condition satisfactory to the ENGINEER. Work shall include any or all of the following items:
  - 1. Application of water
  - 2. Bituminous material
  - 3. Calcium chloride
  - 4. Sweeping
  - 5. Others as necessary
- B. When hauling operations are completed, CONTRACTOR shall:
  - 1. Restore to condition that existed at the time hauling operations were started; or
  - 2. Compensate the local road authority in the amount satisfactory to that road authority.
- C. The ENGINEER shall make the determination as to the kind and amount of Work required to restore the haul road to a condition equal to the time hauling operations began.



- D. When hauling operations are complete and restoration is complete to the satisfaction of the ENGINEER, the CONTRACTOR will be relieved of any additional obligation in connection to the maintenance and restoration of the haul road.

\*\*\*END OF SECTION\*\*\*



## **SECTION 02225**

### **REMOVALS**

#### **PART 1 – GENERAL**

##### **1.01 SUMMARY**

- A. Section includes complete or partial removal and disposal of piping, and other miscellaneous items.

##### **1.02 REFERENCES**

- A. Standard Specifications
  - 1. 2104 – Removing Pavement and Miscellaneous Structures
- B. Minnesota Rules Chapter 7035.2860.

##### **1.03 DEFINITIONS**

- A. Remove: To take away or eliminate from the Site by any method selected by the Contractor, including disposal of material.
- B. Salvage: To dismantle, disassemble, or remove carefully without damage so the item can be re-assembled, replaced, or reused in a workable condition equal to that existing before removal.
- C. Abandon: To fill, bulkhead, or close off pipes and structures so that no settlement or flow can occur.

##### **1.04 REGULATORY REQUIREMENTS**

- A. Conform to Spec. 2104.3C, with the following modifications:
  - 1. Dispose of all materials designated for removal outside of the Site at locations selected by Contractor.
  - 2. Stockpile or temporarily store materials designated for salvage at locations provided by Contractor.

##### **1.05 COORDINATION**

- A. Coordinate work with others performing work at project site.
- B. CONTRACTOR must notify Gopher State One Call (800-252-1166) to mark location of utilities prior to beginning Work.



## PART 2 – PRODUCTS

Not Used

## PART 3 - EXECUTION

### 3.01 GENERAL

- A. Dispose of all items removed. Said disposal shall be in accordance with all laws, regulations, statutes, etc.
  - 1. No on-site disposal allowed.
- B. Perform removal work without damage to adjacent work. Where such work is damaged, the Contractor shall repair to original condition at no expense to the Owner.
- C. Consider Beneficial Use Designations for uncontaminated recognizable concrete and bituminous.

### 3.02 PREPARATION

- A. Conduct operations within project limits of construction.
- B. Implement Traffic Control Plan, On-Site Health and Safety Plan, and Erosion Control Plans, as submitted to ENGINEER.
- C. Prepare a neat square edge prior to restoration.

### 3.03 REMOVE SECTION OF EXISTING PIPE

- A. Pipes to be removed shall be done so as to not damage pipes to remain. Damage to existing pipes to remain shall be replaced at no expense to the OWNER.

### 3.04 BACKFILLING

- A. Backfill all depressions immediately created from removal operations.

\*\*\*END OF SECTION\*\*\*



**SECTION 02315**  
**EXCAVATION AND FILL**

**PART 1 - GENERAL**

**1.01 SUMMARY**

- A. Excavation and fill for creek bank and other areas.

**1.02 REFERENCES SPECIFICATIONS, CODES AND STANDARDS**

- A. Minnesota Department of Transportation, (MN/DOT), Standard Specifications for Construction, 2016 Edition with Supplements:
  - 1. 2105 – Excavation and Embankment.
  - 2. 3149 – Granular Material

**1.03 DEFINITIONS**

- A. The definitions of the different classifications of excavation and borrow material shall conform to MnDOT Spec. 2105.2, or as modified herein:
  - 1. Common Excavation: Will include all excavation below the grading grade. Other excavations directed by Engineer, such as subgrade excavation, shall be included as common excavation.

**1.04 SUBMITTALS**

- A. The CONTRACTOR shall submit source-testing results of materials.

**1.05 METHOD OF MEASUREMENT AND PAYMENT**

- A. Refer to Section 01025 – Measurement & Payment.
- B. All other Work and costs of this Section shall be incidental to the Project and included in the TOTAL BASE BID.

**PART 2 – PRODUCTS**

**2.01 MATERIALS**

Not Used.

**PART 3 – EXECUTION**

**3.01 GENERAL**

- A. Conform to MnDOT Spec. 2105.3A, or as modified herein:



1. Establish erosion control devices prior to excavation work.
2. Notify utility companies of progress schedule so they can accomplish relocations, removals, and holding of lines.

### 3.02 PREPARATION OF EMBANKMENT

A. Conform to MnDOT Spec. 2105.3C, or as modified herein:

1. Engineer's approval is required for all areas where preparation work has been performed prior to the placement of the embankment or fill material.
2. Where embankment is to be constructed over swamp, marsh, or other locations where the foundation material is unstable, the foundation material shall be excavated to remove all or part of the unstable material.

### 3.03 EXCAVATION OPERATIONS

A. Conform to MnDOT Spec. 2105.3D, or as modified herein.

1. Perform excavations to the alignment, cross section, and grade as shown on the Drawings and staked by Engineer.
2. Excavation of unstable material below grade shall be done under the direction of the Engineer as the subsurface conditions are disclosed.
3. Notify the Engineer immediately of any large boulders or ledge rocks encountered so proper management or profile can be made for pay quantities.
4. No solid rock will be allowed within 12 inches of the subgrade.
5. Provide and maintain temporary drainage facilities until permanent facilities are completed.

### 3.04 DISPOSITION OF EXCAVATED MATERIALS

A. Conform to MnDOT Spec. 2105.3I, or as modified herein:

1. No disposition of bituminous millings will be permitted.

### 3.05 PLACING EMBANKMENTS

A. Conform to MnDOT Spec. 2105.3E.

### 3.06 COMPACTING EMBANKMENTS

A. Conform to MnDOT Spec. 2105.3F, or as modified herein:

1. Compaction required for embankment materials shall conform to the Specified Density Method of Bucket Tamping with the testing location and rates being determined by the Engineer.
2. Clayey or silty soil used as fill will need to be placed at a water content sufficient to attain compaction (near the "optimum water content" defined in ASTM D698). If the Contractor wishes to use soils which are not at the needed water content, it is the responsibility of the Contractor to moisture condition the soil (wet or dry) to a uniform condition such that the entire profile (lift thickness) attains the minimum specified compaction level. Some on-site soils will be wet (or could be dry) and the Contractor shall not claim that this is a changes condition.
3. The Contractor recognizes that inclement weather (sometimes heavy) occurs during the construction season and the Contractor shall be responsible for protecting the moisture



condition of soils during the construction phase. Such protection measures include sloping of exposed surfaces to promote runoff (avoid ponding) and compacting exposed surfaces prior to rain events to minimize infiltration.

### 3.07 FINISH OPERATIONS

A. Conform to MnDOT Spec. 2105.3H, or as modified herein:

1. Finish grading of subgrade prior to placement of an aggregate base course shall conform to the following tolerances:
  - a. Not vary by more than 0.10 feet above or below the prescribed elevation at any point where a measurement is made.

B. Grading of the soils beneath the proposed topsoil shall be reviewed and approved by the Engineer prior to placement of topsoil.

### 3.08 MATERIAL BALANCE

- A. Waste excess soil materials from log toe installation on site in OWNER/ENGINEER designated areas within the construction limits.
- B. Any excess material from iron enhanced sand filter construction shall be hauled onsite to a location as directed by the Site Superintendent for the School Improvements project (Pat Mulcahey with Kraus-Anderson). The CONTRACTOR is responsible to dispose of it in accordance with all applicable laws.

\*\*\*END OF SECTION\*\*\*



**SECTION 02316**  
**BANK RESLOPING**

**PART 1 - GENERAL**

**1.01 SECTION INCLUDES**

- A. Grading of Stream Bank.

**1.02 LOCATION OF WORK**

- A. All areas as indicated on the Drawings.

**1.03 RELATED SECTIONS**

- A. Section 01570 - Erosion Control
- B. Section 02955 - Native Seeding

**1.04 PROJECT CONDITIONS**

- A. Existing stream banks to be resloped are approximately 2' to 4' vertical in height and vegetated at the top with minimal vegetation on the sloping face.

**1.05 METHOD OF MEASUREMENT AND PAYMENT**

- A. Refer to Section 01025 – Measurement & Payment.
- B. All other Work and costs of this Section shall be incidental to the Project and included in the TOTAL BASE BID.

**PART 2 – PRODUCTS**

**2.01 MATERIALS**

- A. Seed Mix: Conform to Section 02955- Native Seeding and as noted in the Drawings.
- B. Erosion Control Blankets: Conform to Section 01570 - Erosion and Sediment Control and as noted in the Drawings.
- C. Hardwood Stakes: 2 ft. long 2" x 4" studs of Cedar, Southern Cypress, Tamarack, Douglas Fir (coastal region), Oak, Elm, Hard Maple, or Black Locust wood sawed on the diagonal to create wedged shaped stakes that can be driven into the ground.



## PART 3 – EXECUTION

### 3.01 PREPARATION

- A. Locate all utilities prior to beginning work.
- B. Clear vegetation including trees, shrubs, turf and wild grasses from the extents of grading for the stream bank areas indicated on the Drawings to be graded.
- C. Install erosion control practices on land and in the stream as required by ENGINEER and in permits.

### 3.02 EXECUTION

- A. All grading of existing stream banks is to be balanced cut and fill with no export of soil.
- B. Provide flotation silt curtain at base of stream bank being resloped to contain soil material during bank resloping operations. Flotation silt curtain shall be maintained and relocated as operations of bank resloping progress. Flotation silt curtain shall not be relocated until current site is stabilized.
- C. Grade stream bank by blade or other mechanical means to a slope of 3H:1V where possible, no steeper than 2H:1V.
- D. Provide finished surface free of stones, sticks, or other material one inch or more in any dimension.
- E. Provide finished surface smooth and true to required grades.
- F. Seed with seed mix as noted in the Drawings.
- G. Cover the graded and seeded area with erosion control blankets that are staked every 5' with hardwood stakes as detailed on the Drawings.

### 3.03 ACCEPTANCE

- A. Upon completion of earthwork, obtain Engineer's acceptance of grade and surface.

**\*\*\*END OF SECTION\*\*\***



## **SECTION 02320**

### **TRENCH EXCAVATION AND BACKFILL**

#### **PART 1 - GENERAL**

##### **1.01 SUMMARY**

- A. Trenching requirements for underground piping and appurtenances including excavation, backfill and compaction.

##### **1.02 REFERENCES**

- A. American Society for Testing and Materials (ASTM):
  - 1. ASTM C1479 – Standard Practice for Installation of Precast Concrete Sewer, Storm Drain, and Culvert Pipe Using Standard Installations.
  - 2. ASTM D2321 – Recommended Practice for Underground Installation of Flexible Thermoplastic Sewer Pipe.
- B. Standard Specifications
  - 1. 2105 – Excavation and Embankment.
  - 2. 3149 – Granular Material
- C. American Water Association
  - 1. C1479 – Standard Practice for Installation of Precast Concrete Storm Sewer, Storm Drain, and Culvert Pipe Using Standard Installations
  - 2. D698 – Test Method for Laboratory Compaction Characteristics for Soil Using Standard Effort (12,400 ft-lbf/ft).

##### **1.03 DEFINITIONS**

- A. Influence Zone Around Piping Area: below limits bounded by line 12 in. above pipe and by 1 horizontal to 2 vertical slope extending outward from that line 1 foot beyond outer edge of pipe or duct.
- B. Unsuitable or Unstable Material: Topsoil, peat, organic soils, and materials containing slag, cinders, foundry sand, debris, and rubble or soil with less than required bearing capacity.
- C. Bedding: The soil material adjacent to the pipe which makes contact with the pipe foundation, walls of the trench, and upper level of backfill. The purpose of bedding is to secure the pipe to true line and grade, and to provide structural support to the pipe barrel.
- D. Improved Pipe Foundation: Foundation provided by importing material from sources outside the Site. Required when foundation is soft or unstable.
- E. Filter Aggregate: Free draining material product used around drain tile pipe.



#### 1.04 SUBMITTALS

- A. The CONTRACTOR shall submit source-testing results of materials.

#### 1.05 PROJECT/SITE CONDITIONS

- A. General locations of known utilities are shown on the Drawings. The OWNER and the ENGINEER do not guarantee utility locations. CONTRACTOR should uncover utilities and verify both vertical and horizontal alignment prior to trench excavation.
- B. The CONTRACTOR must notify Gopher State One Call (800-252-1166) to mark location of utilities prior to beginning work.
- C. The CONTRACTOR is required to meet all applicable OSHA standards.
- D. The CONTRACTOR is responsible for notifying utilities at least 48 hours prior to commencing WORK within 50 feet of the respective facility:
- E. Backfill and compact all trench excavations promptly after pipe is installed.
- F. CONTRACTOR is responsible for implementing appropriate trench ventilation and regular air monitoring.
- G. Provide continuance of flow of existing sewer and other facilities.

#### 1.06 WARRANTY

- A. Settlements that occur during the correction period and are greater than 1/2 inch as measured by a 10-foot straight edge will be repaired in a manner acceptable to the OWNER at the CONTRACTOR's expense.

### PART 2 – PRODUCTS

#### 2.01 PIPE BEDDING MATERIAL

- A. Polyvinyl Chloride (PVC) Pipe
  - 1. Comply with MnDOT Spec. 3149.2B1 for granular borrow.
    - a. No on-site granular material encountered during construction may be used without the permission of the Engineer.

#### 2.02 IMPROVED PIPE FOUNDATION

- A. Comply with MnDOT Spec. 3149.2H Modified:
  - 1. Crushing requirements: At least 50 percent of the material by weight retained on the No. 4 sieve shall have 1 or more crushed faces.

#### 2.03 BACKFILL MATERIAL

- A. Suitable materials selected from the excavated materials to the extent available and practical.



- B. Suitable materials are mineral soils free of rubbish, trees, stumps, debris, frozen soil, concrete and bituminous chunks, and other similar unsuitable material.

## PART 3 – EXECUTION

### 3.01 EXAMINATION

- A. Prior to construction, inspect existing utility structures and surface features to document condition.

### 3.02 PREPARATION

- A. The CONTRACTOR shall notify corporations, companies, individuals or authorities owning above or below ground conduits, wires, pipes or other utilities running to property or encountered during excavating operations.
- B. The CONTRACTOR shall protect, support, and maintain conduits, wires, pipes, poles, trees, pavement, and other remaining utilities in accordance with requirements of owners of services.
- C. Notify utility companies of progress schedule so they can accomplish any necessary relocations and removals that they have agreed to relocate, remove, or support.
- D. The CONTRACTOR shall remove and replace or compact natural soils or compacted fills softened by frost, flooding or weather.
- E. The CONTRACTOR shall remove unsuitable or unstable material.
- F. Complete temporary removal or relocation of surface features such as fences, shrubs, signs, and mailboxes.
- G. The CONTRACTOR shall implement traffic control according to ENGINEER approved submittals.
- H. When Crossing under Existing Utility Lines, the CONTRACTOR shall:
  - 1. Use extreme care when excavating in the vicinity of underground utility lines to avoid damage to protective coatings and surfaces.
  - 2. Where possible and as authorized by the utility, temporarily remove the utility line, install the new pipe and reinstall the utility line.
  - 3. When the existing line cannot be removed or is not feasible to remove, securely support, excavate under, backfill under and around the utility line to 100 percent Standard Proctor density.
  - 4. Report and repair damaged lines prior to backfilling trench.

### 3.03 CONSTRUCTION

- A. Conform to ASTM C2321, or as modified herein.



B. Trench Excavation:

1. Excavate to the alignment and grade as shown on Drawings.
2. The trench width at the surface may vary and depends on the depth of trench and nature of the excavated material encountered. It shall be of ample width to permit the pipe to be laid and jointed properly and the backfill to be placed and compacted properly.
3. Correct any part of the trench that is over-excavated below grade with approved material compacted to 100-Percent Standard Proctor Dry Density.
4. Brace, shore, or sheet trench and provide drainage. Comply with all applicable State Regulations relating to industrial safety to a safe angle of repose. Angle of repose may be no less than that required by the Accident Prevention Division of the State Industrial Commission or the requirements of the Occupational Safety and Health Act (OSHA), whichever is most restrictive.
5. Segregate soils that are not suitable for trench backfill and dispose of in a manner that is consistent with the requirements specified herein under "Backfill Above Pipe Zone."
6. Dispose of excess excavated materials off of right-of-ways and easements at a suitable site selected by the Contractor.
7. Haul excess excavated materials to a suitable off-site location.

C. Water Control

1. Dewater the ground as necessary to excavate the trench and install the pipe. All pipe and structures shall be laid in a dry condition prior to backfill.
2. Trench dewatering shall meet all state and federal regulations.

3.04 PIPE BEDDING

- A. Polyvinyl Chloride Sewer Pipe: Bed pipe in accordance with ASTM D2321.
- B. Use only selected materials free from rock, debris, or other high void content materials to a level 1 foot above the top of pipe.
- C. Dig bell holes of ample dimension at each joint such that the barrel rests continuously on the bedding.

3.05 BACKFILL WITHIN PIPE ZONE

- A. Backfill immediately after pipe is laid. Restrain pipe as necessary to prevent movement during backfill operations.
- B. Place material completely under pipe haunches in uniform layers not exceeding 4 inches in depth.
- C. Hand (shovel) tamp along pipe within haunch zone.



### 3.06 BACKFILL ABOVE PIPE ZONE

- A. Use suitable materials meeting the requirements of Backfill Material.
- B. Place in uniform lifts not to exceed 12 inches before compaction. Complete compaction of each lift before placing material for the succeeding lift.
- C. Compact each layer by mechanical means until it meets the requirements of Spec. 2105.3F1 "Specified Density Method." Trenches shall be compacted to a minimum of 95 percent, except to 100 percent in the upper 3 feet.
- D. The method and means of placement and type of compaction equipment used is at the discretion of the Contractor. All portions of the trench backfill must meet minimum specified compaction requirements.
- E. Any deficiency in quantity of backfill material (caused by shrinkage or settlement) shall be supplied at no additional cost to the Owner.
- F. Excavated material not suitable or required for backfill shall be disposed of outside of the site.

### 3.07 RESTRICTED TRENCH WIDTH

- A. Restrict width of trench to conform to construction limits indicated on the Drawings.

### 3.08 FIELD QUALITY CONTROL

- A. Density tests: To be performed by an approved soils testing firm at various locations and depths throughout the Site as directed by the Engineer. The Contractor shall cooperate fully and provide assistance as necessary to complete these tests.
- B. Failed density test areas shall be excavated and re-compacted until density requirements are met.

\*\*\*END OF SECTION\*\*\*



**SECTION 02350**  
**STRUCTURAL SOILS**

**PART 1 - GENERAL**

**1.01 SUMMARY**

- A. Work described in the Section includes use of imported Cornell University Structural Soils (CU® - Soils) as shown on the plans in accordance with the attached manufacturer specification as modified herein

**1.02 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS**

- A. Minnesota Department of Transportation, (MN/DOT), Standard Specifications for Construction, 2016 Edition with Supplements:
  - 1. 3733 – Geotextiles.

**1.03 SUBMITTALS**

- A. Location of offsite source of CU® - Soils.
- B. Submit in accordance with Section 01300.

**1.04 QUALITY ASSURANCE**

- A. Testing shall be provided by CONTRACTOR for imported material only.
  - 1. One gradation for each source of structural soils.

**1.05 METHOD OF MEASUREMENT AND PAYMENT**

- A. Refer to Section 01025 – Measurement & Payment.
- B. All other Work and costs of this Section shall be incidental to the Project and included in the TOTAL BASE BID.

**PART 2 - PRODUCTS**

**2.01 MATERIALS**

- A. CU® - Soils
  - 1. CU® - Soils shall come from a registered manufacturer as approved by engineer.
- B. Geotextile Filter
  - 1. Conform to Section 02373



## PART 3 - EXECUTION

### 3.01 PREPARATION

CONTRACTOR shall furnish and install Cornell Structural Soils (CU® - Soils) as shown on the plans in accordance with the attached manufacturer specification as modified herein.

#### A. Digging:

1. Protection from extremes in exposure and rough handling shall be provided for all plant materials during transport and storage. All precautions in good trade practice shall be taken in preparing plants for transplanting, in accordance with the American Standard for Nursery Stock. Workmanship that fails to meet the highest standards will be rejected.
2. Materials shall be assembled on the job site to permit inspection and approval by the ENGINEER. The CONTRACTOR shall notify the ENGINEER 48 hours prior to planting so that a mutually agreeable time may be arranged for inspection. Stock with broken root balls or loose containers, and stock which shows evidence of being root bound, overgrown or recently canned, or in the opinion of the ENGINEER is damaged or improperly cared for, shall be removed from the site immediately and replaced at the CONTRACTOR's expense with another plant meeting the original specifications.

#### B. Layout:

1. Lay out individual tree locations with ENGINEER and areas for multiple plantings.
2. Stake locations and outline areas.
3. Do not start planting work until layout is approved by the ENGINEER.
4. Make minor adjustments as required.

#### C. Preparing Planting Holes:

1. Place structural soils to level as shown in drawing

#### D. Pruning: Prune immediately prior to planting to remove stock damaged during transport and movement.

#### E. Placement:

##### 1. Balled and Burlapped:

- a. Set balled and burlapped (B&B) stock on prepared structural soil base, plumb and in center of pit or trench with top of all at same elevation as adjacent finished landscape grades.
- b. Root flare of the tree must be above finished grade.
- c. Cut all cords and twin and remove wire basket and burlap from top and sides of balls; retain burlap on bottoms.



When set, place additional planting soil backfill around base and sides of ball, and work each layer to settle backfill and eliminate voids and air pockets.

#### SP-003.3 Payment

Payment shall be made at the unit price per TON of Cornell Structural Soils required and associated incidental materials as specified as determined from weight tickets delivered to the Engineer.

\*\*\*END OF SECTION\*\*\*



## **SECTION 02370**

### **RIPRAP**

#### **PART 1 - GENERAL**

##### **1.01 SUMMARY**

- A. Work described in the Section includes use of imported riprap for spillways and at flared end sections.

##### **1.02 REFERENCE SPECIFICATIONS, CODES AND STANDARDS**

- A. Minnesota Department of Transportation, (MN/DOT), Standard Specifications for Construction, 2016 Edition with Supplements:
  - 1. 2511 – Riprap.
  - 2. 3601 – Riprap Material.
  - 3. 3733 – Geotextiles.

##### **1.03 SUBMITTALS**

- A. Location of offsite source of riprap.
- B. Test results.
- C. Submit in accordance with Section 01300.

##### **1.04 QUALITY ASSURANCE**

- A. Testing shall be provided by CONTRACTOR for imported material only.
  - 1. One gradation for each source and class of riprap.
  - 2. One test on each source and class of riprap for soundness as required herein.

##### **1.05 METHOD OF MEASUREMENT AND PAYMENT**

- A. Refer to Section 01025 – Measurement & Payment.
- B. All other Work and costs of this Section shall be incidental to the Project and included in the TOTAL BASE BID.



## PART 2 - PRODUCTS

### 2.01 MATERIALS

#### A. Riprap

1. Class II and III riprap in accordance with MNDOT Standard Specifications Section 3601. It shall consist of fractured granite or other igneous/metamorphic stone. Limestone or volcanic based rock will not be accepted.
2. Individual rock fragments shall be dense, sound and free from cracks, seams and other debris conducive to accelerated weathering.

#### B. Geotextile Filter

1. Conform to Section 02373.

## PART 3 - EXECUTION

### 3.01 PREPARATION

- A. CONTRACTOR shall ensure that the surface to receive the riprap is suitable to support the riprap, is level and free of debris. If the surface is found not to be suitable to support the riprap, the CONTRACTOR shall notify the ENGINEER.

### 3.02 INSTALLATION

- A. CONTRACTOR shall place riprap as shown on Drawings and in accordance with MNDOT Standard Specification Section 2511.

\*\*\*END OF SECTION\*\*\*



## **SECTION 02372**

### **FIELDSTONE BOULDERS**

#### **PART 1 - GENERAL**

##### **1.01 DESCRIPTION**

- A. This work consists of furnishing and installing Fieldstone Boulders as detailed and noted in the Drawings, and as specified herein.

##### **1.02 REFERENCE SPECIFICATIONS, CODES AND STANDARDS**

- A. Minnesota Department of Transportation, (MN/DOT), Standard Specifications for Construction, 2016 Edition with Supplements:
  - 1. 2511 – Riprap.
  - 2. 3601 – Riprap Material.
  - 3. 3733 – Geotextiles.

##### **1.03 METHOD OF MEASUREMENT AND PAYMENT**

- A. Refer to Section 01025 – Measurement & Payment.
- B. All other Work and costs of this Section shall be incidental to the Project and included in the TOTAL BASE BID.

#### **PART 2 - PRODUCTS**

##### **2.01 BOULDERS**

- A. Boulders shall be a minimum of 24" diameter boulders. Boulders shall be in conformance with MNDOT Specification 3601, as modified herein.
- B. Boulders shall be uncut, undressed, durable field stone of approved quality free of seams, cracks and other structural defects, with no man-made cut, blast or shear marks. Quarry stone crushed rock and broken concrete will not be accepted.

#### **PART 3 – EXECUTION**

##### **3.01 INSTALLATION**

- A. Boulders to be placed as shown in the Drawings.
- B. Boulders to be placed with minimal soil disturbance to protect existing stream bed.
- C. Boulders to be set in depressions to prevent rolling down stream under high water. Hand digging of boulder pits is preferred and shall be completed so that approximately 80% of boulder surface is exposed above the stream bed.



- D. A minimum distance equivalent to 1/3 of the channel width must be maintained between the bank and the In-Stream Cover Boulders to prevent flow deflection into the bank.
- E. Boulder locations are to be field located by project Engineer.

### 3.02 INSPECTION AND MAINTENANCE

- A. Inspect installation after significant rainstorms to check for movement from original location. Any failure during the installation or maintenance period shall be repaired immediately. If movement occurs, re-position boulders.

**\*\*\*END OF SECTION\*\*\***



## **SECTION 02373**

### **GEOTEXTILE**

#### **PART 1 - GENERAL**

##### **1.01 SUMMARY**

- A. Under this section, Work includes manufacture; fabrication (if needed); furnishing; installation of geotextile.

##### **1.02 REFERENCES**

- A. American Society for Testing and Materials (ASTM):
  - 1. ASTM D3776—Standard Test Method of Mass per Unit Area of Woven Fabric.
  - 2. ASTM D4491—Standard Test Method for Water Permeability of Geotextiles by Permittivity.
  - 3. ASTM D4533—Standard Test Method for Trapezoid Tearing Strength of Geotextiles.
  - 4. ASTM D4632—Standard Test Method for Breaking Load and Elongation of Geotextiles (Grab Method)
  - 5. ASTM D4751—Standard Test Method for Determining Apparent Opening Size of a Geotextile.
  - 6. ASTM D4833—Standard Test Method for Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products.
- B. Minnesota Department of Transportation, (MN/DOT), Standard Specifications:
  - 1. 3733 – Geotextiles.

##### **1.03 SUBMITTALS**

- A. Manufacturer's certificates indicating conformance test results of furnished material to Specifications.

##### **1.04 QUALITY ASSURANCE AND MATERIAL HANDLING**

- A. Roll Identification:
  - 1. Provide geotextiles in rolls wrapped in relatively impermeable and opaque protective covers and marked or tagged with following information:
    - a. Manufacturer's name
    - b. Product identification
    - c. Lot number
    - d. Roll number
    - e. Roll dimensions
  - 2. Indicate special handling marked on geotextile itself, e.g., "This Side Up".
  - 3. Conformance Testing to indicated conformance with specifications.



- B. Handle geotextiles in such manner as to insure geotextiles are not damaged.

## PART 2 - PRODUCT

### 2.01 GENERAL

- A. Unless otherwise noted on Plans, furnish materials whose minimum average roll values as defined by Federal Highway Administration (FHWA), meet or exceed Geotextile Fabric Minimum Properties.
- B. Except when specifically authorized, supplier shall not furnish special run or value added products.
- C. Orient polymeric yarns or fibers into stable network to retain relative structure during handling placement, and long-term service.
- D. Unless longer durability is specified, geotextiles shall be capable of withstanding direct exposure to sunlight for 30 days with no measurable deterioration.

### 2.02 GEOTEXTILE FABRIC MINIMUM PROPERTIES:

- A. Geotextile beneath Riprap Spillways, Boulder Vanes, Grade Control Structures and Riprap Toe: In accordance with the Mn/DOT Spec 3733 Type 5, woven material.

## PART 3 - EXECUTION

### 3.01 INSTALLATION

- A. General
  - 1. On Slopes, roll down slope in such manner as to continually keep geotextile sheet in tension.
  - 2. In presence of wind, weight geotextiles with sandbags or equivalent. Install sandbags during placement and keep in place until replaced with cover materials.
  - 3. Take necessary precautions to prevent damage to underlying layers during placement of geotextile.
  - 4. During placement of geotextiles, care shall be taken not to entrap in geotextile, stones, excessive dust or moisture that could damage geomembrane or hamper subsequent seaming.
  - 5. Do not expose geotextiles to precipitation prior to being installed and do not expose to direct sunlight for more than 15 days, unless otherwise specified.
- B. Seams and Overlaps:



1. On slopes steeper than 10 horizontal/1 vertical, seam geotextiles.
  - a. Seam by sewing, adhesive, fusion or other approved means.
  - b. Continuously seam; do not spot seam.
  - c. Overlap geotextile 6 inches prior to seaming.
  - d. Sew horizontal seams along slope, not across slope.
  - e. Using polymeric thread with properties equal to or exceeding those of geotextile.
2. On slope less than 10 horizontal/1 vertical, seam or overlap geotextile.
  - a. Overlap 12 inches.
  - b. Spot seaming when overlapping may be considered as measure against wind uplift.
  - c. Orient overlaps in direction of earth filling.

C. Geotextile Repair:

1. On slopes:
  - a. Sew fabric patch into place using double sewn lock stitch, seams 1/4 to 3/4 in. apart and no closer than 1 in. from any edge.
  - b. Should any tear exceed 10% of width of roll, remove roll from slope and replace.
2. On nonslopes: A spot seam fabric patch in place with minimum of 24 inch overlap in each direction.
3. Remove soil or other material that may have penetrated torn geotextile.

D. Appurtenances:

1. Install geotextile around appurtenances protruding through geotextile as shown on Plans.
2. After material is placed and seamed, complete final field seam connection between appurtenance sleeve or shield or geotextile. Maintain sufficient initial overlap of appurtenance sleeve so shifts in location of geotextile can be accommodated.
3. Care shall be taken while welding around appurtenances since both nondestructive and destructive testing might not be feasible. Do not damage geotextile while making connections to sumps and appurtenances.

\*\*\*END OF SECTION\*\*\*



**SECTION 02630**  
**STORM DRAINAGE**

**PART 1 – GENERAL**

**1.01 SECTION INCLUDES**

- A. Work under this section shall consist of the construction of storm sewer pipe, manholes, catch basins, fittings, rip rap, rain gardens, and miscellaneous appurtenances.

**1.02 REFERENCES**

- A. American Society for Testing and Materials (ASTM)
  - 1. C76 – Specification for Reinforced Concrete Culvert, Drain, and Sewer Pipe.
  - 2. C150 – Specification for Portland Cement
  - 3. C206 – Specification for Finishing Hydrated Lime
  - 4. C361 – Specification for Reinforced Concrete Low Head Pressure Pipe.
  - 5. C443 – Specification for Joints for Circular Concrete Sewer and Pipe, Using Rubber Gaskets
  - 6. D2683 – Specification for Socket-Type polyethylene Fittings for Outside Diameter-Controlled Polyethylene Pipe and Tubing.
  - 7. D2837 – Specification for Standard Test Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials.
  - 8. F477 – Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.
- B. Standard Specifications
  - 1. 2511 – Rip Rap
  - 2. 3601 – Rip Rap Materials
  - 3. 3733 – Geotextiles
  - 4. 2461 – Structural Concrete

**1.03 SITE CONDITIONS**

- A. All work must be confined to within the limits of construction easements or public right-of-way.



## PART 2 – PRODUCTS

### 2.01 MATERIALS

#### A. Mortar Materials

1. Cement: Use Type 1 Standard Portland Cement conforming to ASTM C150.
2. Lime: Use normal finishing hydrated lime meeting the requirements of ASTM C206.
3. Mix proportions:
  - a. 1-part cement to 3 parts of suitable plaster sand for mortar used for plastering the exterior walls of block manholes and catch basins, adjusting rings, and lift holes. Use lime or mortar mix in the amount necessary to make a suitable moisture for plastering purposes, but not to exceed 15 percent by volume.

### 2.02 PIPE MATERIALS

#### A. Reinforced Concrete Pipe (RCP) and Fittings:

1. General requirement: ASTM C76, Wall B with circular reinforcing.
2. Materials: O-ring gaskets shall be synthetic rubber, circular reinforcing in cross-section, and shall conform to ASTM C361.
3. Pipe joints: Bell and spigot ASTM C361.
4. Pipe Class: As shown on the Drawings.
5. Marking: Each pipe shall be identified with the name of the manufacturer and code, identification of plant, date of manufacture, and the pipe class and specification design.

### 2.03 RIP RAP

#### A. General Requirement: Conform to Spec. 2511

1. Rip Rap Materials: Conform to Spec. 3601
2. Granular Filter: Conform to Spec. 3601
3. Geotextile Filter: Conform to Spec. 3733

## PART 3 – EXECUTION

### 3.01 PREPARATION

- A. Trench excavation and Backfill shall conform to Section 02320.
- B. By-Pass Pumping: Contractor responsible for all items required to maintain sewer flows during construction of the new storm sewer. All work and costs for by-pass pumping is considered incidental to the Project, unless otherwise specified.



### 3.02 INSTALLATION

#### A. Connect to Existing Storm Sewer Pipe

1. Take care not to damage existing pipe. Any segment of pipe damaged by Contractor shall be replaced with new materials at no expense to the Owner.
2. Utilize standard bell and spigot joint with rubber o-ring if possible.
3. If butt connection must be made to existing pipe, construct concrete collar around joint. Collar shall be a minimum of 12 inches thick in all directions and shall extend a minimum of 12 inches each way of the joint.

#### B. Pipe Installation

1. Lay and maintain pipe appurtenances to the alignment, grade, and location shown on the Drawings and/or staked in the field. No deviation is allowed unless approved by the Engineer. Deviation from grade in excess of 0.05 percent may be cause for removal and relaying pipe at Contractor's expense.
2. Wipe joints clean. Apply manufacturer's recommended lubricant compound over the entire joint surface.
3. Lay pipe upgrade with spigot ends pointing in the direction of flow.
4. All joints must be watertight.
5. Where cut-ins make it impossible to construct bell and spigot joints or when dissimilar materials are joined, a reinforced concrete collar shall be placed completely surrounding the joint or the connection shall be made by using an approved adapter.
6. Any pipe that has been disturbed after being laid must be taken up and relaid as directed by the Engineer.
7. Where sewer line outlet to grade or where the line is terminated with a flared end section:
  - a. Fasten at least the last 3 joints together using 2 "U" bolt fasteners per joint approved and as recommended by the pipe manufacturers.

#### C Structures and Appurtenances Installation

1. Furnish and install structures in accordance with the Drawings.
2. Excavate to depth and size as shown on the Drawings.
2. Pour inverts to the half section of equivalent size pipe conforming to the inlet and outlet pipe as to allow for a free, uninterrupted flow with all surfaces sloping to the flow line.
3. Preformed inverts not allowed where pipe grades are 2 percent or greater, unless design grade is built through the manhole.
4. All concrete pipes entering manholes must be cut with a concrete saw.
5. Steps



- a. Locate on the downstream side if appropriate.
- b. Secure and neatly mortar in place 15 inches on center spacing.
- 6. Position vertical wall of the eccentric cone on the downstream side.
- 7. For structures with a build that contains more than 1 barrel section, the section immediately below the precast top slab shall be a maximum 16 inches in height.
- 8. Lift holes shall be neatly mortared.
- 9. Install Adjustment Rings and Adjust Casting conforming to Section 02280.

E. Rip Rap

- 1. General: Conform to Spec 2511.

### 3.03 FIELD QUALITY CONTROL

A. Scope

- 1. All pipeline testing is considered incidental to the Project.
- 2. Engineer to observe and verify that all tests and visual inspections have been completed prior to final acceptance.

B. Cleaning

- 1. If newly installed mains and/or structures become dirty due to the negligence of the Contractor, cleaning will be performed at the sole expense of the Contractor.

C. Required tests and inspections

1. Lamping

- a. Verify installation is to true line and grade, structurally sound, not broken or defective, and all joints are home.

2. Infiltration

- a. To determine the amount of groundwater infiltration into the sewers
- b. Test waived if no visible infiltration is observed during the lamping inspections.
- c. Measurement made by means of 90 degree v-notch weirs placed in the lines as directed by the Engineer.
- d. Measurements taken at the points where in the Engineers opinion the flow of water in the sewer is greater than the maximum allowable leakage.
- e. Maximum Allowable Rate of Leakage: Not more than 100 gallons per mile per inch diameter per day.



- f. Tests may be taken between individual manholes and the infiltration in any given line must not exceed the specified maximum allowable rate.
- g. Method of Measurement: measurement of time for a predetermined volume of flow to occur.

#### 3.04 PROTECTION

- A. Implement erosion control measures.
- B. Mark structures to avoid being damaged by construction related traffic during construction.

\*\*\*END OF SECTION\*\*\*



## **SECTION 02720**

### **AGGREGATE BASE COURSE**

#### **PART 1 - GENERAL**

##### **1.01 SECTION INCLUDES**

- A. Placement and protection of the aggregate base course.

##### **1.02 REFERENCES**

- A. Minnesota Department of Transportation, (MN/DOT), Standard Specifications for Construction, 2016 Edition with Supplements:
  - 1. 2211 - Aggregate Base.
  - 2. 3138 - Aggregate for Surface and Base Courses.

##### **1.03 SUBMITTAL**

- A. Source and location of material.
- B. Gradation report.
- C. Submit in accordance with Section 01300.

##### **1.04 SEQUENCING AND SCHEDULING**

- A. Construct aggregate base only after all of the following have been completed:
  - 1. Channel stabilization work is complete and no equipment traffic will pass through the site access where the aggregate will be placed.
  - 2. Subgrade has been corrected for instability problems and approved by the ENGINEER.
  - 3. ENGINEER has given approval to place aggregate.

##### **1.05 METHOD OF MEASUREMENT AND PAYMENT**

- A. Refer to Section 01025 – Measurement & Payment.
- B. All other Work and costs of this Section shall be incidental to the Project and included in the TOTAL BASE BID.

#### **PART 2 - PRODUCTS**

##### **2.01 MATERIALS**

- A. Aggregate Base: Conform to Mn/DOT Spec. 3138, Class 5 aggregate. Virgin aggregates only. 100% limestone only.



- B. Aggregate Base: Conform to MnDOT Spec. 3138, Class 5 aggregate. Virgin aggregates only. 100% limestone only.

### PART 3 - EXECUTION

#### 3.01 PREPARATION

- A. Subgrade to be completed and approved by the ENGINEER prior to installation of aggregate base.

#### 3.02 CONSTRUCTION REQUIREMENTS

- A. Conform to Mn/DOT Spec. 2211.3.
  - 1. The depth and class of the aggregate base to be constructed shall be 3" depth.
  - 2. All aggregate base shall be compacted using vibratory mechanical means to a minimum of 100% of the maximum Standard Proctor dry density.

#### 3.03 FIELD QUALITY CONTROL

- A. Line and Grade Tolerance: The final aggregate base surface will be checked for conformance to specified tolerances by the "string line" method prior to approval to pave the surface. Grade shall be  $\pm 0.05$  feet of grade.

#### 3.04 PROTECTION

- A. Keep aggregate base free of ruts and irregularities after placement.

\*\*\*END OF SECTION\*\*\*



## **SECTION 02920**

### **GRASSPAVE2™**

#### **PART 1 - GENERAL**

##### **1.01 DESCRIPTION**

- A. This work consists of furnishing and installing Grasspave2 where located, and as detailed and noted in the plans, and as specified herein.

#### **PART 2 - MATERIALS**

##### **2.01 Grasspave 2 Porous Paver by Invisible Structures, Inc.**

- A. See listing below for retailers.

Brock White Construction Materials  
Contact: Dan Larson  
dlarsen@brockwhite.com  
2575 Kasota Ave  
St. Paul, MN 55108  
651-647-0403

#### **PART 3 - EXECUTION**

##### **3.01 Installation Grasspave2 specified by Manufacturer and as shown on Plans.**

\*\*\*END OF SECTION\*\*\*



## **SECTION 02924**

### **TIMBER EDGE PATH**

#### **PART 1 - GENERAL**

##### **1.01 DESCRIPTION**

- A. This work consists of furnishing and installing Timber Edge Path where located, and as detailed and noted in the plans, and as specified herein.

#### **PART 2 - MATERIALS**

##### **2.01 Treated Timbers & Spikes**

- A. As shown on the plans.

#### **PART 3 - EXECUTION**

##### **3.01 Install Timber Edge Path as shown on Plans.**

\*\*\*END OF SECTION\*\*\*



## **SECTION 02926**

### **BOARDWALK**

#### **PART 1 - GENERAL**

##### **1.01 DESCRIPTION**

- A. This work consists of furnishing and installing Boardwalk where located, and as detailed and noted in the plans, and as specified herein.

#### **PART 2 - MATERIALS**

##### **2.01 Treated Lumber and Fasteners**

- A. As shown on Plans.

#### **PART 3 - EXECUTION**

##### **3.01 Install Boardwalk as shown on Plans.**

**\*\*\*END OF SECTION\*\*\***



**SECTION 02930**  
**TURF RESTORATION**

**PART 1 – GENERAL**

**1.01 DESCRIPTION OF WORK**

- A. Restoration of construction access, staging and work area by installation of topsoil, seed, sod and erosion control.

**1.02 REFERENCES**

- A. Minnesota Department of Transportation, (MN/DOT), Standard Specifications for Construction, 2016 Edition with Supplements:
  - 1. 2575 – Establishing Turf and Controlling Erosion.
  - 2. 3876 – Seed
- B. Minnesota Department of Transportation Seeding Manual 2007 (MnDOT Seeding Manual)

**1.03 SUBMITTAL**

- A. Provide source and invoice for seed and/or sod.
- B. Producer's certificate of compliance – Written documentation verifying compliance of mixture of seed furnished. Include percentage of various seed species, year of production, germination rate, seed bag tags, and weed seed content. Submit to Engineer at least 5 days prior to delivery.

**1.04 FIELD QUALITY CONTROL**

- A. Provide the Engineer with seed bag tags used for identification purposes.

**1.05 METHOD OF MEASUREMENT AND PAYMENT**

- A. Refer to Section 01025 – Measurement & Payment.
- B. All other Work and costs of this Section shall be incidental to the Project and included in the TOTAL BASE BID.



## PART 2 – PRODUCTS

### 2.01 SEED MIX

A. Conform to MnDOT Spec. 3876.D.1

1. The turf seed mixture shall be the following mix: MN State seed mix 25-131

Seeding rate: 200 lb/acre

### 2.02 WATER

A. Contractor shall be responsible for water.

### 2.03 TOPSOIL BORROW

A. Topsoil material shall be salvaged from site. No import of topsoil.

### 2.04 MULCH

A. Conform to Section 01570.

### 2.04 EROSION CONTROL BLANKET

A. Conform to Section 01570.

## PART 3 – EXECUTION

### 3.01 EXAMINATION

A. Finish grade are to be inspected and approved by the Engineer prior to start of restoration.

### 3.02 PREPARATION

A. General: Conform to MnDOT Spec. 2575.3A.

B. Soil Preparation: Conform to MnDOT Spec. 2574.3.



### 3.03 SOWING SEED

- A. Conform to MnDOT Spec. 2575.3 for the mixes specified.

### 3.04 EROSION CONTROL BLANKET

- A. Erosion control blanket shall be installed immediately following the seeding in accordance with MnDOT Spec. 2575.3G, and as modified below.
  - 1. Raking or harrowing of soil/seed shall be done before installation of erosion control blanket.
  - 2. Blanket shall be installed parallel to the direction of flow in all areas.

### 3.05 MAINTENANCE

- A. Seed maintenance shall be done in conformance with section 02980 – Vegetation Establishment and Maintenance.
- B. Maintain seeded area by watering, mowing, and replanting as necessary to produce uniform stand of grass until work is accepted.
- C. Implement erosion control measures as required to keep area free of rutted or eroded soils.

### 3.06 INSPECTION AND ACCEPTANCE

- A. When inspected landscape work does not comply with requirements, replace rejected Work and continue specified maintenance until re-inspected by Engineer and found to be acceptable.
- B. The opinion of the Engineer shall govern in any and all disputes by the Contractor regarding the condition and disposition of unsatisfactory maintenance procedures.

\*\*\*END OF SECTION\*\*\*



## **SECTION 02931**

### **PLANTS**

#### **PART 1 - GENERAL**

##### **1.01 SECTION INCLUDES**

- A. CONTRACTOR to furnish plants and any planting soil required, all necessary planting operations, including necessary watering, mulching, fertilizing, spraying, wrapping, and pruning.

##### **1.02 REFERENCES**

- A. Minnesota Department of Transportation "Standard Specification for Construction," latest Edition, (MnDOT Spec):
  - 1. Section 2571 – Plant Installation and Establishment.
  - 2. Section 2575 – Establishing Turf and Controlling Erosion.
  - 3. Section 3861 – Plant Stock.
- B. American Standard for Nursery Stock, ANSI Z60.1.

##### **1.03 DEFINITIONS**

- A. Weeds: For the purpose of this project, a weed is a plant that inhibits the establishment of species listed in article MATERIALS. Weeds may include but are not limited to: bindweed, bentgrass, Bermuda grass, blackberry, black locust, Canada thistle, chickweed, crabgrass, cress, dandelion, European buckthorn, glossy buckthorn, horsetail, jimsonweed, Johnson grass, lambsquarter, morning glory, mustard, nimble will, nutgrass, nut sedge, perennial sorrel, pigweed, poison ivy, poison oak, quackgrass, ragweed, reed canary grass, rush grass, Siberian elm, smooth brome grass, spotted knapweed, tansy ragwort, tatarian honeysuckle, and wild garlic.

##### **1.04 SUBMITTALS**

- A. Provide nursery stock list submittal materials to ENGINEER.
- B. Quality Assurance:
  - 1. Nursery Experience: List of 3 completed past projects.
  - 2. Installer Experience: List of 3 completed past projects.
- C. Planting Schedule: Submit proposed planting schedule indicating dates for each type of planting during normal seasons for such work. Submit with date of commencement of work. Correlate with specified maintenance periods to provide maintenance from date of installation completion. Revisions will be accepted only upon written consent of ENGINEER.

##### **1.05 QUALITY ASSURANCE**

- A. Trees, Shrubs, and Plants: Provide trees, shrubs, and plants of quantity, size, genus, species, and variety as chosen by OWNER/ENGINEER. Comply with recommendations and



requirements of ANSI Z60.1 **“Nursery Stock.”** Provide healthy, vigorous stock, grown in recognized nursery in accordance with good horticultural practice and free of disease, insects, eggs, larvae, and defects such as knots, sun-scald, injuries, abrasions, or disfigurement.

- B. Plant Names and Labels: The nomenclature used in the quote conforms, with few exceptions, to that of the current edition of Standardized Plant Names as adopted by the American Joint Committee on Horticulture Nomenclature.
- C. Workers: Landscaping work shall be performed by personnel familiar with planting procedures, and work shall be carried out under the direction of a qualified planting supervisor.
- D. Inspection: ENGINEER retains the right to inspect trees and shrubs for size and condition of balls and root systems, insects, injuries and latent defects, and to reject unsatisfactory or defective material at any time during progress of work. Remove rejected trees or shrubs within 8 hours from the project site.
- E. All plant material shall be hardy stock grown in a similar hardiness zone.

#### 1.06 REGULATORY REQUIREMENTS

- A. Comply with regulatory agency requirements for fertilizer and herbicide compositions.

#### 1.07 DELIVERY, STORAGE, AND HANDLING

- A. Nursery Stock:
  - 1. Deliver all materials in accordance with Mn/DOT Specifications Section 3861.
  - 2. Deliver stock after planting preparations have been completed and plant immediately.
  - 3. Deliver plant material direct from nursery. Heel in immediately upon delivery if not to be planted within four hours, covering with moist soil or mulch to protect from drying. Store plants in shade and protect from weather.
- B. Fertilizer:
  - 1. Deliver small quantities in waterproof bags showing weight, chemical analysis, and name of manufacturer. Advance approval by the ENGINEER is required prior to bulk delivery in containers or by truckload.

#### 1.08 PROJECT/SITE CONDITIONS

- A. Proceed with complete landscape work upon notification from ENGINEER.
- B. Utilities: Determine location of underground utilities and perform work in a manner, which will avoid possible damage. Hand excavate, as required. Maintain grade stakes set by others until removal is mutually agreed upon by both parties concerned.
- C. Excavation: When conditions detrimental to plant growth are encountered, such as rubble fill, adverse drainage conditions, or obstructions, notify ENGINEER before planting.
- D. Planting Time: Plant or install materials during normal planting seasons for each type of landscape work required. Correlate planting with specified maintenance periods to provide maintenance up to date of OWNER acceptance.



- E. Protect established turf areas during planting operations.

## 1.09 SEQUENCING AND SCHEDULING

- A. Planting Seasons:
1. Spring: April 15 to June 15
  2. Fall: August 20 to October 31.
  3. Other Dates: At the approval of the ENGINEER.

## PART 2 - PRODUCTS

### 2.01 MATERIALS

- A. Plant and Nursery Stock: Mn/DOT Specification Section 3861 as follows:
1. Prune all bare root and basal sprouts.
  2. Remove all dead, rubbing, damaged, or diseased branches.
  3. Leave leaders intact while removing all stubs.
  4. TREES (potted) as designated in Plans.
  5. SHRUBS (potted) as designated in Plans.
  6. PLUGS (potted) as designated in Plans.
- B. Pre-Emergent Herbicide:
1. Upland Areas  
Broad spectrum, non-selective herbicide used to eliminate undesirable woody and herbaceous vegetation in upland areas. Herbicide shall contain 53.8% glyphosate and 46.2% inert ingredients. Submit product literature to Engineer, at least 2 weeks in advance of use, for approval.
  2. Wetland & Riparian Area  
Broad spectrum, non-selective herbicide used to eliminate undesirable woody and herbaceous vegetation in wetland & riparian areas. Herbicide shall contain 53.8% glyphosate and 46.2% inert ingredients, and shall be safe for use in wetland areas. Submit product literature to Engineer, at least 2 weeks in advance of use, for approval.
- C. Perennial Planting Plug List

Common Name	Latin Name	Qty
Swamp Milkweed	Asclepias incarnata	48
Large Leaf Aster	Aster macrophyllus	48
New England Aster	Aster novae-angliae	48
Purple Coneflower	Echinacea purpurea	48
Boneset	Eupatorium perfoliatum	48
Blue Flag Iris	Iris versicolor	48
Prairie Blazing Star	Liatris pycnostachya	48
blackeyed Susan	Rudbeckia hirta	48
Golden Alexander	Zizia aurea	24



#### D. Trees

Common Name	Latin Name	Qty	Size
Swamp White Oak	Quercus bicolor	1	#25 POT

#### E. Shrubs, Container

Common Name	Latin Name	Qty	Size
Dwarf Bush Honeysuckle	Diervilla lonicera	560	#5 POT
Nannyberry	Viburnum lentago	60	#10 POT

#### F. Shrubs, Bare Root

Common Name	Latin Name	Qty	Size
Gray Dogwood	Cornus racemosa	48	Bare Root
Red-Twig Dogwood	Cornus sericea	48	Bare Root
Silky Dogwood	Cornus amomum	48	Bare Root
Elderberry	Sambucus canadensis	48	Bare Root
Pussy Willow	Salix discolor	48	Bare Root

### 2.02 ACCESSORIES

A. Tree Wrapping: Arbortape or equal.

B. Stakes: 3" diameter Cedar or 2"x2" square Oak x 6 feet long, pointed end, free of defects or painted steel posts. Provide protective caps on stake tops. (Provide 3 per tree.)

C. Staking and Guys: Arbortie by Deep Root or approved equal, 1(800) 458-7668.

D. Safety Flags for Guys: Fluorescent orange surveyor's plastic tape. Minimum 6-inches.

E. Water: Non-deleterious to plants and animals.

## PART 3 - EXECUTION

### 3.01 PLANT INSTALLATION

#### A. Digging:

1. Protection from extremes in exposure and rough handling shall be provided for all plant materials during transport and storage. All precautions in good trade practice shall be taken in preparing plants for transplanting, in accordance with the American Standard for Nursery Stock. Workmanship that fails to meet the highest standards will be rejected.
2. Materials shall be assembled on the job site to permit inspection and approval by the ENGINEER. The CONTRACTOR shall notify the ENGINEER 48 hours prior to planting so that a mutually agreeable time may be arranged for inspection. Stock with broken root balls or loose containers, and stock which shows evidence of being root bound, overgrown



or recently canned, or in the opinion of the ENGINEER is damaged or improperly cared for, shall be removed from the site immediately and replaced at the CONTRACTOR's expense with another plant meeting the original specifications.

B. Layout:

1. Lay out individual tree and shrub locations with ENGINEER and areas for multiple plantings.
2. Stake locations and outline areas.
3. Do not start planting work until layout is approved by the ENGINEER.
4. Make minor adjustments as required.

C. Preparing Planting Holes and Planting Beds:

1. Remove sticks, rubbish, foreign materials and undesirable plants and their roots. Remove stones measuring over 1-1/2 inches in any dimensions. Do not bury foreign material beneath areas to be landscaped or restored.
2. Center holes at staked locations.
3. Dig holes as detailed and to a diameter a minimum of two times the diameter of the root ball or container.
4. Thin spread surplus subsoil and topsoil on the berm.

D. Pruning: Prune immediately prior to planting to remove stock damaged during transport and movement.

E. Placement:

1. Balled and Burlapped:
  - a. Set balled and burlapped (B&B) stock on layer of compacted planting soil mixture, plumb and in center of pit or trench with top of all at same elevation as adjacent finished landscape grades.
  - b. Root flare of the tree must be above finished grade.
  - b. Cut all cords and twin and remove wire basket and burlap from top and sides of balls; retain burlap on bottoms.
  - c. When set, place additional planting soil backfill around base and sides of ball, and work each layer to settle backfill and eliminate voids and air pockets.
  - d. When excavation is approximately 2/3 full, water thoroughly before placing remainder of backfill.
  - e. Repeat watering until no more is absorbed.
  - f. Water again after placing final layer of backfill.
2. Container:
  - a. Set container grown stock, same as for balled and burlapped stock, except cut containers on sides into quarters with shear.
  - b. Remove container before setting plant so as not to damage root balls.

### 3.02 WATERING

A. Water each plant within 2 hours of planting.

B. Water to thoroughly saturate all planting soil.



- C. Bring planting soil to specified level within five days of initial watering, and saturate additional soil.
- D. Water all plants thoroughly as soil moisture is depleted (at least once per week during periods of average rainfall) until the work is accepted.

### 3.03 PROTECTION

#### A. General:

- 1. Protect landscape work and materials from damage due to landscape operations, operation by other contactors and trades, and trespassers.
- 2. Maintain protection during installation and maintenance periods.

#### B. Trees:

- 1. It is the CONTRACTOR's option whether or not to stake trees. The CONTRACTOR is responsible for maintaining trees in an upright position throughout the one-year guarantee period.
- 2. Inspect tree trunks for injury, improper pruning, and insect infestation/disease and take corrective measures before wrapping.
- 3. Wrap trees at end of growing season and remove prior to following growing season. Wrap all trees from the ground to the first major branch.

### 3.04 CLEANUP AND RESTORATION

- A. During landscape work, keep work area in an orderly condition.
- B. Treat, restore, or replace in kind turf, plantings, or other facilities damaged by CONTRACTOR's operations.
- C. Collect and dispose offsite all excess materials, packaging, and containers.

### 3.05 MAINTENANCE

- A. Begin maintenance immediately after planting.
- B. Maintain trees and bushes including watering for one year after acceptance by ENGINEER. It is CONTRACTORS responsibility for coordinate watering.
- C. Trees, Shrubs, and Plantings:
  - 1. Trim, prune, remove clippings and dead or broken branches, and treat pruned areas and other wounds.
  - 2. Weed and spray as necessary for healthy growth, including plant beds and tree pits.
  - 3. Tighten, repair, or replace stakes, turnbuckles, and guy supports. Reset trees and shrubs to proper grades or vertical position as required.
  - 4. Restore or replace damaged wrapping.



5. Treat stock with appropriate pest control measures as required to keep trees and shrubs free of insects and disease.
6. Irrigate to moisten root system and maintain healthy growth.

D. Application of Herbicides and Pesticides:

1. Apply pesticides for weed, insect, and pest control in accordance with manufacturer's instructions.
2. Remedy damage resulting from pesticide use.

### 3.06 GUARANTEE AND REPLACEMENT

- A. Plant material shall be guaranteed for one full year after OWNER acceptance and shall be alive and in satisfactory condition at the end of the guarantee period. Such guarantee excludes vandalism.
- B. At the end of the one-year guarantee period, inspection will be made by the ENGINEER upon written notice by the CONTRACTOR at least five days before the anticipated date. Any plant material required under the Contract that is dead or not in satisfactory condition, as determined by the ENGINEER, shall be removed from the site, and shall be replaced as soon as conditions permit during the normal planting seasons.
- C. The opinion of the ENGINEER shall govern in any and all disputes by the CONTRACTOR regarding the condition and disposition of unsatisfactory maintenance procedures or rejected plants.
- D. All replacements shall be plant material of the same kind and size as specified in the plant list. Replacement costs shall be borne by the CONTRACTOR.
- E. Replacement plantings required at the end of the guarantee period are not to be guaranteed. The plant material is subject to inspection and rejection by the ENGINEER before and after planting.

### 3.07 INSPECTION AND ACCEPTANCE

- A. Landscape work will be inspected for acceptance in parts agreeable to the ENGINEER, provided work offered for inspection is complete, including maintenance, for the portion in question.
- B. At the conclusion of the establishment period, which will be one year following initial installation a final inspection of planting will be made to determine the conditions of areas specified for landscaping.
- C. When inspected landscape work does not comply with requirements, replace rejected work and continue specified maintenance until re-inspected by ENGINEER and found to be acceptable. Remove rejected plants and materials from site.

**\*\*END OF SECTION\*\***



**SECTION 02955**  
**NATIVE SEEDING**

**SECTION 1 – GENERAL**

**1.01 DESCRIPTION**

- A. The work shall consist of furnishing, transporting and installing native seed as designated in the plans
  - 1. Any remedial operations necessary to meet performance standards as specified in this document.
  - 2. The provision of post-planting management as specified.

**1.02 REFERENCES**

- A. Minnesota Department of Transportation, (MN/DOT), Standard Specifications for Construction, 2016 Edition with Supplements:
  - 1. 2575 – Establishing Turf and Controlling Erosion.
  - 2. 3876 – Seed
- B. Minnesota Department of Transportation Seeding Manual 2014 (MnDOT Seeding Manual)

**1.03 QUALITY ASSURANCE**

- A. Contractor Requirements
  - 1. Work shall conform to State Horticultural Standards, local municipal requirements, and BWSR and DNR guidelines for landscape plantings.
- B. Quality Control Procedures
  - 1. Substitutions shall not be made without written approval of the Engineer. If specified material is not obtainable, Contractor shall submit to Engineer written proof on non-availability and a written proposal for use of equivalent material.

**1.04 SUBMITTALS**

- A. Provide source and invoice for seed.
- B. Producer's certificate of compliance – Written documentation verifying compliance of mixture of seed furnished. Include percentage of various seed species, year of production, germination rate, seed bag tags, and weed seed content. Submit to Engineer at least 5 days prior to delivery.



## 1.06 JOB CONDITIONS

### A. Notification Of Unsatisfactory Conditions

1. Contractor shall examine and evaluate grades, soils, and water levels, observe conditions under which work is to be performed, and notify Engineer of unsatisfactory conditions. Contractor shall not proceed with the work until unsatisfactory conditions have been corrected in an acceptable manner.
2. If conditions detrimental to installation or plant growth are encountered, such as rubble fill, adverse drainage conditions, or obstructions, Contractor shall notify Engineer before planting.

## 1.04 METHOD OF MEASUREMENT AND PAYMENT

### A. Refer to Section 01025 – Measurement & Payment.

### B. All other Work and costs of this Section shall be incidental to the Project and included in the TOTAL BASE BID.

## SECTION 2 - PRODUCTS

### 2.01 SEED MIXTURES

#### A. Applicable Conditions: The following applies to all Contractor supplied seeds.

1. Seeds shall be blended by the vendor and the mixture and ratio shall be guaranteed in writing to be as specified by percentage or weight in the Seed Lists. This is a submittal required of the Contractor prior to final payout.

#### B. Seed Requirements: All seeds shall conform to the following requirements.

1. All legumes shall be inoculated with the proper rhizobia and at the appropriate time prior to planting.
2. All seed shall be packed and covered in such a manner as to insure adequate protection against damage and maintain dormancy while in transit, storage or during planting operations.
3. All seeds shall have the proper stratification and/or scarification to break seed dormancy for other than fall planting.
4. All seeds shall be true to their name as specified. Their origin shall be known to be local within a 200 mile radius of the project location and species and subspecies native to the area in the project location's county. Seed origins beyond a 200 mile radius shall be approved in writing by the Engineer.
5. Species and quantities to be planted shall be those specified on the vegetation plan. Seed mixtures shall be proportioned by seed count and seed count percentages. Seed mixtures and any substitutions or changes shall be submitted in writing to project the Engineer for approval.
6. Seeds shall be free of the Minnesota DNR identified noxious weed seeds and Reed Canary Grass (*Phragmites rundinacea*), Giant Reed Grass (*Phragmites australis*), Cattails (*Typha* spp.) and Purple Loosestrife (*Lythrum salicaria*).



C. Seed Mixes

1. Conform to Spec. 3876
2. Modified MN State Seed Mix 34-261 Riparian South & West.

The modifications shall include amended plant species and oats cover crop replaced by a no-mow fescue cover crop. The modified seed mix shall be:

Seeding rate: 106.8 lb/acre

Common Name	Scientific Name	Rate (lb/ac)	% of Mix (by weight)	Seeds/sq ft
Virginia wild rye	<i>Elymus virginicus</i>	1.75	1.64%	2.7
American slough grass	<i>Beckmannia syzigachne</i>	1.36	1.27%	24.9
fowl bluegrass	<i>Poa palustris</i>	0.84	0.79%	40
riverbank wild rye	<i>Elymus riparius</i>	0.5	0.47%	0.53
prairie cordgrass	<i>Spartina pectinata</i>	0.3	0.28%	0.74
tall manna grass	<i>Glyceria grandis</i>	0.25	0.23%	6.5
rice cut grass	<i>Leersia oryzoides</i>	0.16	0.15%	2
<b>Nodding fescue*</b>	<b><i>Festuca subverticillata*</i></b>	<b>0.1</b>	<b>0.09%</b>	<b>0.7</b>
fowl manna grass	<i>Glyceria striata</i>	0.09	0.08%	3
	Grasses Subtotal	5.35	5.01%	81.07
fox sedge	<i>Carex vulpinoidea</i>	0.2	0.19%	7.5
dark green bulrush	<i>Scirpus atrovirens</i>	0.12	0.11%	20
pointed broom sedge	<i>Carex scoparia</i>	0.06	0.06%	2
woolgrass	<i>Scirpus cyperinus</i>	0.05	0.05%	30
tussock sedge	<i>Carex stricta</i>	0.04	0.04%	0.8
path rush	<i>Juncus tenuis</i>	0.03	0.03%	10
	Sedges & Rushes Subtotal	0.5	0.47%	70.3
blue vervain	<i>Verbena hastata</i>	0.15	0.14%	5
marsh milkweed	<i>Asclepias incarnata</i>	0.12	0.11%	0.21
<b>Side-flowering aster*</b>	<b><i>Aster lateriflorus</i></b>	<b>0.1</b>	<b>0.09%</b>	<b>9.2</b>
<b>Beggar ticks, bur marigold*</b>	<b><i>Bidens spp.*</i></b>	<b>0.1</b>	<b>0.09%</b>	<b>0.2</b>
giant sunflower	<i>Helianthus giganteus</i>	0.07	0.07%	0.25
spotted Joe pye weed	<i>Eutrochium maculatum</i>	0.06	0.06%	2
bunched ironweed	<i>Vernonia fasciculata</i>	0.06	0.06%	0.5
autumn sneezeweed	<i>Helenium autumnale</i>	0.05	0.05%	2.5
spotted touch-me-not	<i>Impatiens capensis</i>	0.05	0.05%	0.08
Virginia mountain mint	<i>Pycnanthemum virginianum</i>	0.05	0.05%	4
tall coneflower	<i>Rudbeckia laciniata</i>	0.05	0.05%	0.25
common boneset	<i>Eupatorium perfoliatum</i>	0.03	0.03%	2
great lobelia	<i>Lobelia siphilitica</i>	0.03	0.03%	5
giant goldenrod	<i>Solidago gigantea</i>	0.02	0.02%	2
blue monkey flower	<i>Mimulus ringens</i>	0.01	0.01%	5.07
	Forbs Subtotal	0.95	0.89%	38.26



<b>Creeping Red Fescue*</b>	<b><i>Festuca rubra *</i></b>	<b>25.0</b>	<b>23.41%</b>	<b>229.3</b>
<b>Chewings Fescue*</b>	<b><i>Festuca rubra spp. Commutate*</i></b>	<b>25.0</b>	<b>23.41%</b>	<b>287.0</b>
<b>Hard Fescue*</b>	<b><i>Festuca brevipila*</i></b>	<b>25.0</b>	<b>23.41%</b>	<b>132.0</b>
<b>Sheep Fescue*</b>	<b><i>Festuca ovina*</i></b>	<b>25.0</b>	<b>23.41%</b>	<b>287.0</b>
	Cover Crop Subtotal	100.0	93.63%	935.3
	Total	106.8	100.00%	190.66

**\*Amendments to MN State Seed Mix**

**2.02 ACCESSORIES**

**A. General Requirements:**

1. Water must be free of harmful substances.
2. Hoses, pumps and other methods of watering furnished by Contractor.

**2.03 HERBICIDE**

**A. UPLAND AREAS**

Broad spectrum, non-selective herbicide used to eliminate undesirable woody and herbaceous vegetation in upland areas. Herbicide shall contain a minimum of 50% glyphosate and at most 50% inert ingredients. Submit product literature to Engineer, at least 2 weeks in advance of use, for approval.

**B. WETLAND & AQUATIC AREAS**

Broad spectrum, non-selective herbicide used to eliminate undesirable woody and herbaceous vegetation in wetland & aquatic areas. Herbicide shall contain a minimum of 50% glyphosate and at most 50% inert ingredients, and shall be safe for use in wetland & aquatic areas. Submit product literature to Engineer, at least 2 weeks in advance of use, for approval.

**2.04 EROSION CONTROL BLANKET**

**A. Conform to section 01570**

**2.05 HYDROMULCH**

**A. Conform to MnDOT Spec 2575.3.B.4. and MnDOT Spec 3884.2.B.4.**

**SECTION 3 - EXECUTION**

**3.01 SEEDING SCHEDULE**

**A. Seeding Plan**

1. At least three weeks prior to beginning work, Contractor shall submit a seeding and planting plan for approval by the Engineer. This plan shall include proposed methods



of planting, species, quantities, types of propagules, proposed surface preparation and equipment.

**B. Site Preparation for all seeding areas**

1. At least 6 weeks prior to seeding and/or planting of any kind sites shall be sprayed to kill herbaceous weeds. The following species are considered herbaceous weeds: Kentucky Bluegrass – *Poa pratensis*, Purple Loosestrife - *Lythrum salicaria*, Reed Canary Grass - *Phalaris arundinacea*, Smooth Brome - *Bromus inermis*, Crown Vetch - *Coronilla varia*, Bird's Foot Trefoil - *Lotus corniculatus*, Yellow Sweet Clover - *Melilotus officinalis*, White Sweet Clover - *Melilotus alba*, Canada Thistle - *Cirsium arvense*, Curly Dock - *Rumex crispus*, Giant Ragweed - *Ambrosia trifida*, Common Ragweed - *Ambrosia artemisiifolia*, Foxtail - *Setaria* spp., Leafy Spurge - *Euphorbia esula*, Japanese Knotweed - *Polygonum cuspidatum*, Garlic Mustard - *Alliaria petiolata*, Narrow-leaved and Hybrid Cattail - *Typha angustifolia* and *T. Xglauca*, Buckthorns - *Rhamnus* spp., Honeysuckles - *Exotic Lonicera* spp., Asian Mulberry - *Morus alba*.

Conditions shall be 12 hours dry – no precipitation or dew, above 50 Degrees Fahrenheit wind less than 3 miles per hour.

There shall be up to 5 applications 10-14 days apart. In between applications, treated and dead vegetation taller than 12” shall be mowed to no more than 6” in height before next herbicide application.

Obtain written approval by Engineer before seeding. Engineer will approve seeding when no live unacceptable species are visible to Engineer within 10 days of herbiciding.

2. Application rates per acre:
  - a. 5 quart concentrated herbicide (Use wetland & aquatic safe herbicide only within 20’ of water bodies).
  - b. Surfactant in all applications, per manufacturer's specifications.
3. Install warning signs to alert public of herbicide use.

**3.02 SEEDING**

**A. Seeding Dates**

1. Seeding for this project will be outside the standard recommended dates of April 1 through June 30 or October 15 to first frost and should be completed within 7 days after the construction activity in that portion of the site has temporarily or permanently ceased. Because of the non-standard seeding dates, extra watering provisions are detailed in section 02980 – Vegetation Establishment and Maintenance.

**B. Broadcast Seeding**

1. Engineer shall be notified 24 hours prior to beginning the seeding operations.



2. Seed shall be sown at approximately 1/8" to 1/4" deep and no deeper than 1/2" deep.
3. Seeding will take place using a broadcast method. Mechanical broadcasting equipment shall be equipped with an agitator that effectively prevents seed from bridging or plugging. Seed shall be broadcast twice over each area to help insure even distribution. The seeded area shall be hand-raked or dragged with an implement to the extent necessary to cover a majority of the seed with 1/8" to 1/4" of soil.
4. Cover crop shall be sown separately from forbs, sedges and grasses.
5. Within 12 hours, if conditions permit or as soon thereafter as practical, all seeded areas shall be rolled at right angles to the line of run-off with an approved type roller or cultipacker to compact the seedbed to place the seed in contact with the soil.
6. No fertilizer shall be applied to any seeded areas for any reason.
7. Erosion control blanket, mulch or hydro mulch shall be installed over the native seeded areas immediately following seeding activities.

**B. Hydroseeding**

1. Engineer shall be notified 24 hours prior to beginning the seeding operations.
2. Hydroseeding shall be a separate operation from hydro mulching.
3. Add a 50 lb 3884.2.C, "Type Hydraulic Mulch" as a tracer for each 500 gal of water in the hydroseeder tank.
4. Use flood type nozzles and Manufactures' recommended water volume.
5. Once the seed has been added to the tank mixture a one hour time limit is set for spreading the mixture on the soil.
6. Apply hydraulic mulch with hydraulic spray equipment by a manufacturer's certified applicator.
7. Hydromulch shall be applied at a rate of 2,000 lbs/acre dry weight. Use the water to bale ratio recommended by the manufacturer.
8. Apply the hydromulch from at least two opposing directions and obtain continuous ground coverage.
9. The Contractor may apply seed and BFM in a single operation in small or inaccessible areas as approved by the Engineer.

**3.03 SEED PROTECTION**

- A. No machinery shall run across seeded area after seeding operations have been completed. Observance of machinery on seeded areas after seeding operations have been completed will result in a \$250 fine per occurrence, deducted from the Contractor's next invoice.



### 3.04 CLEAN-UP AND PROTECTION

- A. During landscape work, Contractor shall store materials and equipment where directed, keeping pavements clean and work areas and adjoining areas in an orderly condition.
- B. Contractor shall protect landscape work and materials from damage due to landscape operations, operations by other trades and trespassers. Contractor shall maintain protection during installation and maintenance periods, and shall treat, repair or replace damaged landscape work as directed by Engineer.

### 3.05 MAINTENANCE

- A. Refer to Section 02980 – Vegetation Establishment and Maintenance

### 3.06 INSPECTION AND ACCEPTANCE

- A. Engineer reserves the right to inspect seeds, either at place of growth or at site before planting, for compliance with requirements for name, variety, size, quantity, quality and mix proportion.
- B. Upon request, Contractor shall supply written affidavit certifying composition of Contractor supplied seed mixtures with respect to species, variety and source.
- C. Final Acceptance:
  - 1. Acceptance of Installation:  
When the seeding is completed, the Engineer will, upon request, make a final inspection to determine acceptability.
- E. Non Compliance: Where inspected landscape work does not comply with the requirements, Contractor shall replace rejected work until inspected again by the Engineer and found to be acceptable. Rejected plants and materials shall be removed promptly from the project site. Contractor shall resow at the original seeding rate within 2 weeks of Engineer's notification.

### 3.07 WATER FOR NATIVE SEEDING

- A. Refer to Section 02980 – Vegetation Establishment and Maintenance.

### 3.08 FINAL CLEAN-UP

- A. Upon completion of the work and before preliminary acceptance and final installation payment will be made, the Contractor shall clean and remove from the site of the work surplus and discarded materials, temporary structures, and debris of every kind.
- B. The Contractor shall leave the site of the work in a neat and orderly condition equal or better than that which originally existed.
- C. Surplus materials removed from the site of the work shall be disposed of at locations approved by the Engineer.

**\*\*\*END OF SECTION\*\*\***



## **SECTION 02960**

### **LIVE CUT BRANCH MATERIALS FOR SOIL BIOENGINEERING TECHNIQUES**

#### **PART 1 - GENERAL**

##### **1.01 DESCRIPTION**

- A. This work consists of furnishing, storing, transporting, and installing live cut branch materials (Live Stakes) for soil bioengineering techniques as detailed and noted in the plans, and as specified herein.

##### **1.02 SUBMITTAL**

The Contractor shall keep records of cuttings collection. Records will include, at a minimum, species, location (state, county, nearest town), and date of collection.

#### **PART 2 - MATERIALS**

- 2.01 Plant materials for live cut branch materials shall be handled according to the applicable provisions of Mn/DOT 2571.

- 2.02 Plant materials for live cut branch materials shall conform to the plans and specifications. Plant materials shall be healthy and vigorous and shall be free from disfigurements. Plant materials that do not meet the specifications will not be accepted.

- 2.03 Hortus III shall be the authority for all plant names.

##### **2.04 PLANT MATERIAL HEALTH.**

All cuttings shall be free of disease, insect pests, and other infestations. Cuttings shall be free of nicks, scrapes, bruises, or other disfigurements.

##### **2.05 PACKAGING.**

Collected cuttings shall be divided into bundles of 50 stems of the same species and oriented with the butt ends all at the same end of the bundle. Bundles of cuttings shall be tied with polypropylene or equivalent, non-degradable string in such a manner as to prevent damage to the stems, bark, or other plant parts. Bundles of cuttings shall be wrapped in wet burlap and kept at a cool temperature between 34°F and 50°F for up to 24 hours after collecting before being placed in cold storage.

##### **2.06 LABELS.**

All packages (bundles) of cuttings shall be clearly labeled as to species and quantity of stems. Labels shall also include an identifying number or mark so that each package of cuttings can be matched to a specific collection record for that package.



## 2.07 SPECIES AND DIMENSIONS

### A. Live Stakes Species and Dimensions

1. Live stakes shall be alive, with side branches cleanly removed and bark intact. The larger end shall be cleanly cut at a 30 to 45 degree angle for insertion into soil and the top shall be cut square or blunt.
2. Live stakes shall be 48" long, 3/4" to 2" diameter stakes of species listed below.
3. Live Stakes Species List:

Scientific Name	Common Name	Qty of Live Stakes
<i>Cornus sericea</i>	Red Osier Dogwood	Minimum 20 % of Dogwoods
<i>Cornus amomum</i>	Silky Dogwood	Minimum 20 % of Dogwoods
<i>Sambucus canadensis</i>	American Elderberry	No minimum required
<i>Viburnum rafinesquianum</i>	Downy Arrowwood	No minimum required
<i>Viburnum lentago</i>	Nannyberry	No minimum required

## PART 3 - EXECUTION

### 3.01 HARVESTING OF LIVE STAKES

- A. Cuttings shall be collected during dormant season (November to February), when the temperature is below 50°F, after leaf fall and before sap rises or bud break.
- B. Cuttings from native stands near the site of rehabilitation is an excellent and inexpensive way to obtain plant material that is well adapted to the area.
- C. All cuttings shall be collected within 300 miles of the project site to ensure that plant stock is genetically adapted to the project area.
- D. All cuttings shall be taken from healthy, live stems or branches of mature plants.
- E. Cuttings shall be taken from many different individuals to ensure genetic and gender diversity.
- F. When harvesting, care shall be taken so that the native stand will not be completely denuded by the harvest.



- G. Lopping and pruning shears are the suggested tool to use. Obtain green wood rather than older mature stems that are darker and furrowed. Suckers will not be accepted. Selectively pick branches or saplings that will not overly affect the parent's health and appearance once removed. Trim side branches off cuttings to a single stem, being careful to keep the bark intact. Also cut the tip off where the cutting starts to get too thin. The bottom end of the cutting should have a clean, slanted cut to assist in planting, and easy identification of the bottom. Refer to details, in the plans, for further instructions on preparation of the cuttings.
- H. Live cut branch material shall be transported in enclosed trailers with the growing tips facing the front of the trailer.

3.02 PREPARATION AND HANDLING OF LIVE STAKES AND BRANCHES FROM TIME OF HARVEST UNTIL TIME OF INSTALLATION:

- A. Live cut branch materials shall be soaked at least 24 hours before installation.
- B. Live cut branch materials shall not be stored more than one day in the open before installation. If Live Stakes cannot be installed within 24 hours of harvesting, they may be placed in cold storage (35 degrees F +/-) and kept moist and alive.
- C. The Contractor shall protect live cut branch materials from herbivores (e.g. beavers) and humans during soaking, storing, planting and maintenance operations.
- D. Collected LIVE CUT BRANCHES shall be divided into bundles of 100 stems of the same species and oriented with all of the butt ends at the same end of the bundle. Bundles of cuttings shall be tied with polypropylene or equivalent, non-degradable string in such a manner as to prevent damage to the stems, bark, or other plant parts. Bundles of cuttings shall be wrapped in wet burlap and kept at a cool temperature (between 34°F and 50°F) for up to 24 hours after collection and before being placed in cold storage.
- E. All bundles of cuttings shall be clearly labeled as to species and quantity of stems. Labels shall also include an identifying number or mark so that each package of cuttings can be matched to a specific collection record for that bundle.

3.03 INSTALLATION OF LIVE STAKES AND BRANCHES:

- A. Dip bottom 4 inches to 6 inches of basal ends of all live cut branch material into IBA rooting hormone ("Rhizopon AA #2" or equal.)
- B. Create pilot hole to install all live cut branch material using a stinger bar or power auger. Do not drive stakes any more than 12 inches with "dead-blow" hammer. Do not damage stakes or split ends during installation.



- C. Tamp surrounding fill/soil to ensure soil/ live cut branch material contact. Keep stakes moist and alive.

### 3.04 INSPECTION AND MAINTENANCE

#### A. Repair of Damaged Areas During Warranty Period

All Live Stakes shall be inspected periodically for the duration of the warranty period following acceptance of the work. Inspect installation after significant rainstorms to check for erosion and undermining. Any failure during the installation or warranty period shall be repaired immediately.

- B. The Live Stakes shall be accepted when 70% of the installed live stakes are growing at the end of the warranty period. Live stakes that do not show growth during the first growing season are to be presumed dead. If more than 30% of the initial live stakes are dead, all dead live stakes shall be replaced.

### 3.05 MEASUREMENT AND PAYMENT

- A. Furnishing and installation of all Live Stakes shall be calculated per Each Live Stake. Payment on a per Each Live Stake basis shall be compensation in full for all labor, material, and equipment to furnish and install all Live Stakes as detailed and specified on the Plans and in the Details. All work and costs of this Section shall be included in the TOTAL BID.

\*\*\*END OF SECTION\*\*\*



## **SECTION 02963**

### **LIVE STAKES**

#### **PART 1 - GENERAL**

##### **1.01 DESCRIPTION**

- A. This work consists of furnishing and installing Live Stakes where located, and as detailed and noted in the plans, and as specified herein.

#### **PART 2 - MATERIALS**

##### **2.01 Stakes**

- A. All Live Stakes shall be in accordance with specification 02960
- B. See listing below for live stake retailers.

Wetland Habitat Restorations  
2521 27<sup>th</sup> Ave. S.  
Minneapolis MN 55406  
Attn: Tory Christiansen  
Phone: (612) 385-9105  
Fax: same

Minnesota Native Landscapes  
14088 Highway 95 NE  
Foley, MN 56329  
Keith Fredrick  
Phone: (763) 295-0010  
Fax: (763) 295-0025

Prairie Restorations  
PO Box 327  
Princeton, MN 55371  
Phone: 763/389-4342  
Fax: 763/389-4346  
Contact: Mike Evenocheck  
mevo@prairieresto.com

#### **PART 3 - EXECUTION**

##### **3.01 Installation Live Stakes as shown on Plans.**

\*\*\*END OF SECTION\*\*\*



## **SECTION 02966 LOGS & ROOTWADS**

### **SECTION 1 – GENERAL**

#### **1.01 DESCRIPTION**

- A. This work consists of harvesting and transporting Logs and Rootwads as detailed and noted in the plans, and as specified herein, as well as taking corrective action when damage occurs.

#### **1.02 DEFINITIONS**

- A. Rootwad: a large tree trunk and root flare trenched or otherwise embedded into a stream bank to provide armored protection against erosion and create habitat for aquatic organisms, especially juvenile fish.
- B. Logs: wooden log installed along the streambank, perpendicular to the root wad to provide support to and erosion protection around the newly installed root wad.

#### **1.03 METHOD OF MEASUREMENT AND PAYMENT**

- A. Refer to Section 01025 – Measurement & Payment.
- B. All other Work and costs of this Section shall be incidental to the Project and included in the BID ALTERNATE.

### **SECTION 2 – PRODUCTS**

#### **2.01 ROOTWAD**

- A. Minimum 8' long tree with root wad intact, minimum 12" diameter trunk.

#### **2.02 FOOTER LOG**

- A. 8' to 12' long tree trunk, minimum 12" diameter. Any side branches removed.

### **SECTION 3 – EXECUTION**

#### **3.01 HARVEST**

- A. Trees with diameter greater than or equal to 12" DBH as indicated in Appendix B shall be harvested in entirety to preserve the root ball and dimensioned as rootwads and footer logs.

#### **3.02 DELIVERY**

- A. Contractor shall transport and stockpile rootwads and footer logs to the location and stockpile area shown in Figure 1: South Creek Channel Improvement Project – Tree Delivery Area.



**\*\*\*END OF SECTION\*\*\***



## **SECTION 02980**

### **VEGETATION ESTABLISHMENT AND MAINTENANCE**

#### **PART 1 - GENERAL**

##### **1.01 DURATION OF WARRANTY PERIOD**

- A. The Contractor will be responsible for a warranty on all installed vegetation that shall begin immediately after completion of planting punch list determined at project substantial completion through September 30, 2019.
- B. The Contractor will be responsible for furnishing all vegetation materials and ensuring they meet the specifications of this Contract.
- C. The Contractor will be required to install the materials and will be required to guarantee their success for the duration of the warranty period.
- D. Contractor shall manage all vegetated areas within Construction limits noted on Plans for duration of Warranty Period.

##### **1.02 MAINTENANCE SCHEDULE**

- A. All maintenance activities shall be coordinated with ENGINEER, OWNER and property owner. Notify ENGINEER and OWNER at least 4 days before all maintenance activities.

#### **PART 2 - PRODUCTS**

##### **2.01 HERBICIDE**

###### **A. UPLAND AREAS**

Broad spectrum, non-selective herbicide used to eliminate undesirable woody and herbaceous vegetation in upland areas (minimum 20' away from water bodies). Herbicide shall contain 53.8% glyphosate and 46.2% inert ingredients. Submit product literature to ENGINEER, at least 2 weeks in advance of use, for approval.

###### **B. WETLAND AND STREAM AREAS**

Broad spectrum, non-selective herbicide used to eliminate undesirable woody and herbaceous vegetation in wetland areas (within 20' of water bodies). Herbicide shall contain 53.8% glyphosate and 46.2% inert ingredients, and shall be safe for use in wetland areas. Submit product literature to ENGINEER, at least 2 weeks in advance of use, for approval.

###### **C. WOODY PLANTS ALTERNATIVE**

Garlon III or IV or equal with marker dye. Submit product literature to Engineer, at least 2 weeks in advance of use, for approval.



#### D. OTHER HERBICIDES

For approval of any other herbicides, submit product literature and proposed uses and application methods to ENGINEER, at least 2 weeks in advance of use, for approval. Other herbicides shall not be used without written approval of Project Engineer.

### PART 3 – EXECUTION

#### 3.01 MAINTENANCE FOR ALL AREAS WITHIN PROJECT LIMITS

##### A. Initial Planting – 2018 (Planting through September 30, 2018)

1. All seeded areas shall be watered ½” with a fine spray nozzle, twice a week. Watering will not be required if rain over 0.1” has occurred in the previous 4 days.
2. Water for irrigation may be obtained from Elm Creek or the stormwater ponds.
3. Contractor will be responsible for obtaining a temporary Water Appropriation permit through the MN DNR MPARS system permit to take water from either the creek or the ponds if the amount will exceed 10,000 gallons per day or 1,000,000 annually.
4. An irrigation plan, schedule and explanation of permit requirements, including copy of the permits, shall be provided to ENGINEER and OWNER prior to the commencement of any irrigation activities.

##### B. Maintenance Year 1 – 2018 Growing Season (April 1, 2018 through September 30, 2018)

1. Contractor shall inspect site minimum of three times (once in May or early June, once in July, and once in August or early September) and submit description of proposed maintenance activities to ENGINEER for approval prior to beginning work.
2. Areas seeded with native seed shall be cut to a height of 4" to 6" anytime vegetation grows to 10" high. Clippings shall be left in place.
3. In-between cutting, spot spray with herbicide or hand-pull weeds in the seeded areas as needed.
4. All seeded areas shall be watered ½” if rain has not occurred for a week during the growing season.
5. Prune or replace any dead or diseased plants as directed by the ENGINEER or OWNER during the Spring (May or June). Replacement plant species shall be as directed by ENGINEER or OWNER and shall be of a size that matches surrounding plants.
6. All containerized plantings shall be watered at a rate of 1” per week during the growing season if less than 1” of rainfall has occurred.
7. Additional maintenance, cutting, herbicide treatment and weed control may be needed as directed by ENGINEER or OWNER.



C. Maintenance Year 2 – 2019 Growing Season (April 1, 2019 through September 30, 2019)

1. Contractor shall inspect site minimum of three times (once in May or early June, once in July, and once in August or early September) and submit description of proposed maintenance activities to ENGINEER for approval prior to beginning work.
2. Seeded areas shall be cut to a height of 6" to 12" once in Spring. Clippings shall be left in place.
3. Spot spray with herbicide or hand-pull weeds in the seeded areas as needed.
4. Prune or replace any dead or diseased plants as directed by the ENGINEER or OWNER during the Spring (May or June). Replacement plant species shall be as directed by ENGINEER or OWNER and shall be of a size that matches surrounding plants.
5. Hand-pull weeds in the planted areas as needed.
6. All seeded areas shall be watered during Severe Drought (D2) conditions during the growing season, as defined by the MN State Climatology Office and MN DNR Division of Ecological and Water Resources. Water shall be applied at a rate of ½" per week for the duration of the Severe Drought condition.
7. All plantings shall be watered during Severe Drought (D2) conditions during the growing season, as defined by the MN State Climatology Office and MN DNR Division of Ecological and Water Resources. Water shall be applied at a rate of 1" per week for the duration of the Severe Drought condition.
8. Additional maintenance, cutting, herbicide treatment and weed control may be needed as directed by ENGINEER or OWNER.

3.02 CONTRACTOR INSPECTIONS

- A. Proposed maintenance activity descriptions shall be provided to ENGINEER at least 2 weeks before completion for approval and shall include a schedule of proposed maintenance activities, list of herbicides used, herbicide concentrations, target species for each chemical, proposed methods for chemical preparation, application and equipment.
- B. Completed maintenance activity reports shall be provided to ENGINEER and OWNER within 30 days of all maintenance completion and shall include the schedule of maintenance activities, list of herbicides used, herbicide concentrations, target species for each chemical, proposed methods for chemical preparation, application and equipment.

3.03 CONTROLLING UNACCEPTABLE SPECIES

- A. Species
  1. Herbaceous Unacceptable Species
    - a. The following invasive species shall be controlled in all areas within project limits to the level of the specified performance standards 2 times per maintenance year from May through October according to manufacturer's application rates, times, and temperatures: Smooth Brome



- *Bromus inermis*, Crown Vetch - *Coronilla varia*, Foxtail - *Setaria* spp., Leafy Spurge - *Euphorbia esula*, Japanese Knotweed - *Polygonum cuspidatum*, Bird's Foot Trefoil – *Lotus corniculatus*, Canada Thistle - *Cirsium arvense*, Musk or nodding thistle – *Carduus nutans*, Orange hawkweed, *Hieracium auranti*, Perennial sow thistle *Sonchus arvensis*, Queen Ann's lace - *Daucus carota*, Wild parsnip - *Pastinaca sativa*, Amur silver grass - *Miscanthus sacchariflorus*, Bull thistle - *Cirsium vulgare*, Cow vetch and hairy vetch - *Vicia cracca*, *Vicia villos*, Flowering rush - *Butomus umbellatus*, Grecian foxglove *Digitalis lanata*, Giant Reed Grass – *Phragmites australis*, Reed Canary Grass – *Phalaris arundinacea*, Giant Ragweed - *Ambrosia trifida*, Common Ragweed - *Ambrosia artemisiifolia*-Butter and eggs or common toadflax – *Linaria vulgaris*, Common tansy - *Tanacetum vulgare*, Creeping Charlie – *Glechoma hederacea*, Hoary alyssum *Berteroa incana*, Yellow iris - *Iris pseudacorus*, Hybrid Cattail – *Typha x glauca*, Narrow-leaved Cattail – *Typha angustifolia*, Purple Loosestrife - *Lythrum salicaria*, Yellow Sweet Clover - *Melilotus officinalis*, White Sweet Clover - *Melilotus alba*, Curly Dock - *Rumex crispus*, Garlic Mustard – *Alliaria petiolata*, Kentucky Bluegrass – *Poa pratensis*

- b. All flowers and seedheads of the following species shall be physically removed from the site: Purple Loosestrife - *Lythrum salicaria*, Yellow Sweet Clover – *Melilotus officinalis*, White Sweet Clover - *Melilotus alba*, Curly Dock - *Rumex crispus*, Garlic Mustard - *Alliaria petiolata*.
- c. Hybrid Cattail – *Typha x glauca*, Narrow-leaved Cattail – *Typha angustifolia* shall be mowed to the level of ice during the winter season.

## 2. Woody unacceptable species

- a. The following woody invasive species and all woody invasive species on the state invasive species list shall be cleared and stumps shall be herbicided 2 times per maintenance year from October through March according to manufacturer's application rates, times, and temperatures: Buckthorns - *Rhamnus* spp., Honeysuckles - *Exotic Lonicera* spp., Asian Mulberry - *Morus alba*, Amur Maple - *Acer ginnala*, Russian Olive - *Elaeagnus angustifolia*, Siberian Peashrub - *Caragana arborescens*, Japanese Barberry - *Berberis thunbergii*, Norway Maple - *Acer platanoides*, Siberian Elm - *Ulmus pumila*, Cottonwood - *Populus deltoides*, Silver Maple – *Acer sacharinum*, Boxelder – *Acer negundo*, Green Ash - *Fraxinus pennsylvanica*, Robinia pseudoacacia - Black Locust, and volunteer Willow species outside of bioengineering areas- *Salix* sp. Stump resprouts shall be herbicided according to manufacturer's application rates, times, and temperatures minimum of once in June and once in July.

- B. Install warning signs to alert public of herbicide use. Include at a minimum the following on the sign: chemicals applied, date applied, how long to stay off herbicided area, other information required by the product label, other information required by local regulations. Remove signage once herbicided areas are safe to use again.



- C. Herbiciding shall be performed in accordance with manufacturer's recommendations and shall follow at least a 12 hour dry period with no precipitation or dew, with temperatures above 50 degrees F and wind less than 3 miles per hour.
- D. Areas where native seeding and native plants have not become successfully established or have been choked out by exotic species or destroyed by herbicide drift shall be replanted/re-seeded with original plant species and densities. Successful coverage is defined as:

	Coverage Requirements	
	Native Species	Invasive Species
End of Growing Season #1	>70%	<20%
End of Growing Season #2	>90%	<20%

**\*\*END OF SECTION\*\***



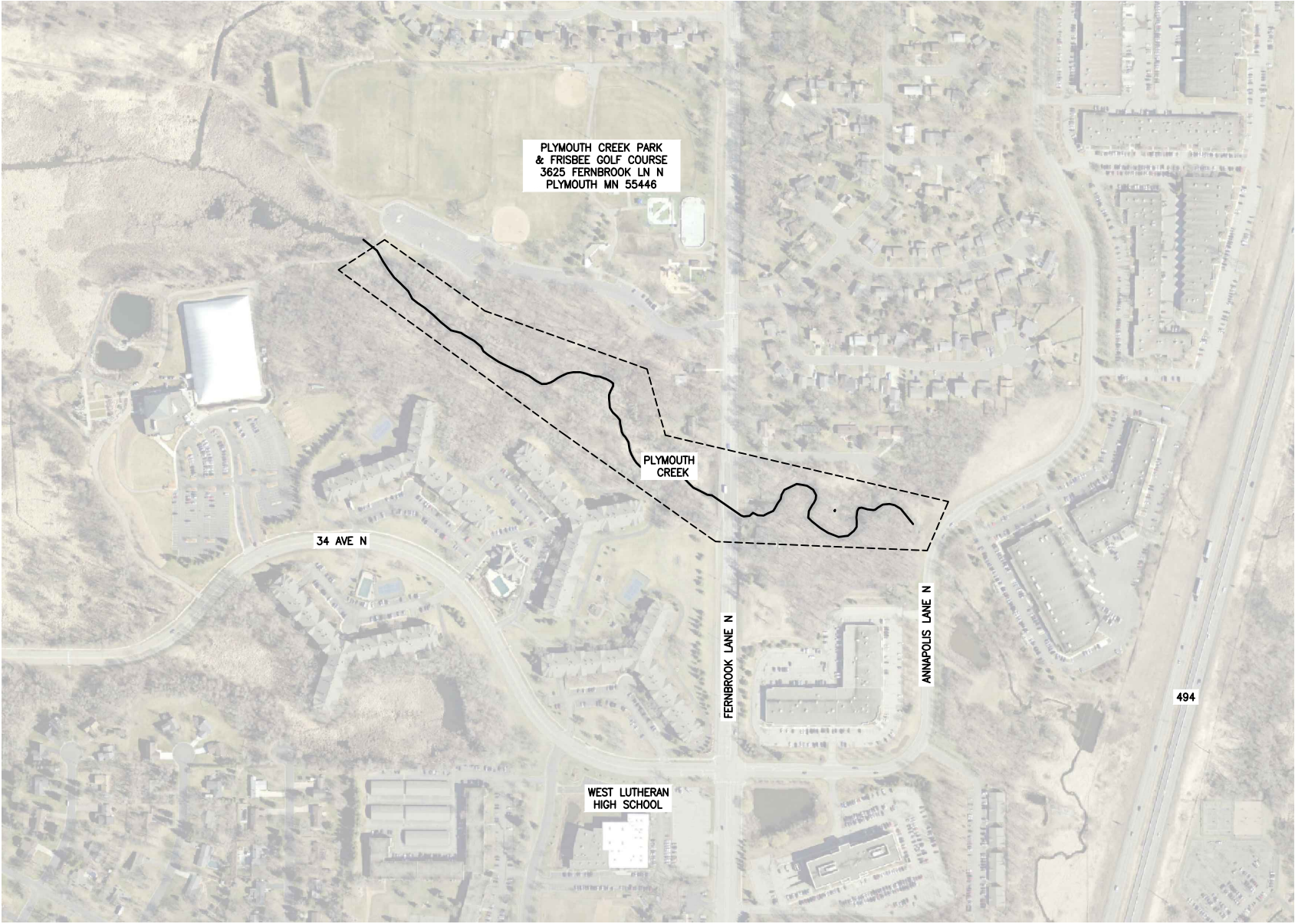
### Construction Drawings



CONSTRUCTION PLANS FOR  
PLYMOUTH CREEK STREAM RESTORATION  
CITY PROJECT NO. 16007

PREPARED FOR  
CITY OF PLYMOUTH, MN

AUGUST 2017



SHEET INDEX	
SHEET	TITLE
G-101	TITLE AND INDEX SHEET
G-102	LEGEND AND GENERAL NOTES
C-101	EXISTING CONDITIONS AND REMOVALS STA 27+18 TO 18+00
C-102	EXISTING CONDITIONS AND REMOVALS STA 18+00 TO 9+00
C-103	EXISTING CONDITIONS AND REMOVALS STA 9+00 TO 0+00
C-104	STABILIZATION PLAN AND PROFILE STREAM TREATMENTS STA 27+18 TO 18+00
C-105	STABILIZATION PLAN AND PROFILE STREAM TREATMENTS STA 18+00 TO 9+00
C-106	STABILIZATION PLAN AND PROFILE STREAM TREATMENTS STA 9+00 TO 0+00
C-601	REFERENCE PICTURES
C-602	REFERENCE PICTURES
C-603	REFERENCE PICTURES
C-604	REFERENCE PICTURES
C-605	REFERENCE PICTURES
EC-101	SWPPP
EC-102	EROSION & SEDIMENT CONTROL PLAN STA 27+18 TO 18+00
EC-103	EROSION & SEDIMENT CONTROL PLAN STA 18+00 TO 9+00
EC-104	EROSION & SEDIMENT CONTROL PLAN STA 9+00 TO 0+00
D-101	DETAILS
D-102	DETAILS
D-103	DETAILS
D-104	DETAILS
D-105	DETAILS
D-106	DETAILS
THIS PLAN CONTAINS 23 SHEETS	

**WARNING:**

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CALLING FOR LOCATIONS OF ALL EXISTING UTILITIES. THEY SHALL COOPERATE WITH ALL UTILITY COMPANIES IN MAINTAINING THEIR SERVICE AND/OR RELOCATION OF LINES.

THE CONTRACTOR SHALL CONTACT GOPHER STATE ONE CALL AT 651-454-0002 AT LEAST 48 HOURS IN ADVANCE FOR THE LOCATIONS OF ALL UNDERGROUND WIRES, CABLES, CONDUITS, PIPES, MANHOLES, VALVES OR OTHER BURIED STRUCTURES BEFORE DIGGING. THE CONTRACTOR SHALL REPAIR OR REPLACE THE ABOVE WHEN DAMAGED DURING CONSTRUCTION AT NO COST TO THE OWNER.


CALL BEFORE YOU DIG  
**GOPHER STATE ONE CALL**  
TWIN CITY AREA: 651-454-0002  
TOLL FREE 1-800-252-1166

PROJECT VICINITY MAP

3	FOR BID	SJB	EAM	08/22/17
2	FOR BID	SJB	EAM	08/01/17
1	90% DESIGN	SJB	EAM	06/30/17
0	60% DESIGN	SJB	EAM	04/20/17
REV	REVISION DESCRIPTION	DWN	APP	REV DATE

SEAL

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

  
ED MATTHIESEN

DATE 08/01/17 REG. NO. 16800

PRIME CONSULTANT

  
Responsive partner. Exceptional outcomes.

PROJECT TITLE		SHEET TITLE		
PLYMOUTH CREEK CHANNEL RECONSTRUCTION		TITLE AND INDEX SHEET		
CITY OF PLYMOUTH		DWN BY SJB	CHK'D LNJ	APP'D EAM
3400 PLYMOUTH BOULEVARD PLYMOUTH, MN 55447		DWG DATE MAR 2017	SCALE AS SHOWN	REV NO. 3
1756-10		G-101		



Plot Date & Time: 15 September 2012 01 PM  
W:\756\10\040\CA\G-102 Legend and Notes.dwg

GENERAL NOTES:

- EXISTING CONDITIONS HAVE BEEN PROVIDED BY A COMBINATION OF HISTORIC PLANS FROM THE CITY, SURVEY INFORMATION FROM A SITE VISIT BY WENCK STAFF AND LIDAR. EXISTING FEATURES MAY NOT BE EXACT TO THEIR LOCATION. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE CONDITIONS OF THE SITE AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR VARIATIONS FROM THE DRAWINGS.
- ALL QUANTITIES ARE APPROXIMATE AND MAY VARY TO ALLOW COMPLETION OF WORK.
- THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF C/ASCE 38-2 ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA".
- EXACT LOCATION OF UNDERGROUND UTILITIES SUCH AS GAS, TELEPHONE, FIBER OPTIC, PIPELINES, ELECTRICAL, AND CABLE TV ARE UNKNOWN. CONTRACTOR RESPONSIBLE FOR LOCATING PRIOR TO STARTING WORK.
- CONTRACTOR SHOULD ANTICIPATE PRIVATE UTILITY CONFLICTS THROUGHOUT THE PROJECT SUB CUT AND TRENCH AREAS AND SHALL COORDINATE WITH PRIVATE UTILITY OWNERS.
- THE RELOCATION AND OR PROTECTION OF ALL EXISTING UTILITIES MUST BE COORDINATED BY THE CONTRACTOR AND ANY COSTS FOR SUCH WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR EXTRA TIME AND EFFORT OF PROVISIONS NECESSARY TO WORK AROUND OR UNDER ANY UTILITIES.
- INSTALL AND MAINTAIN EROSION CONTROL DEVICES AS SPECIFIED OR AS DIRECTED BY ENGINEER.
- CONTRACTOR SHALL COMPLY WITH ALL STATE, COUNTY, AND CITY PERMITS.
- MAINTAIN MAIL, GARBAGE, AND RECYCLING SERVICES TO PROPERTIES.
- PROTECT EXISTING PAVEMENT AND SITE FEATURES, EXCEPT AS NOTED.
- CONTRACTOR TO COORDINATE AND MAINTAIN ACCESS TO PROPERTIES.
- MAINTAIN DRAINAGE CONVEYANCE DURING CONSTRUCTION (BOTH PIPED AND OVERLAND).
- THE EXISTING PAVEMENT CONDITIONS HAVE BEEN DOCUMENTED, AND ANY DAMAGE TO THE EXISTING PAVEMENT, CURBING, AND STRIPING SHALL BE REPLACED BY THE CONTRACTOR, TO THE OWNERS SATISFACTION, AT NO ADDITIONAL COST TO THE OWNER.

REMOVAL NOTES:

- FEATURES NOT SPECIFICALLY IDENTIFIED ON PLAN FOR SALVAGE OR REMOVAL THAT CONFLICT WITH CONSTRUCTION ARE TO BE REVIEWED WITH ENGINEER.

DEWATERING NOTES:

- NO BID ITEM HAS BEEN PROVIDED FOR DEWATERING AS ALL DEWATERING WORK NECESSARY FOR CONSTRUCTION WILL BE CONSIDERED INCIDENTAL.
- ENERGY DISSIPATION SHALL BE PROVIDED AT ALL DISCHARGE POINTS TO PREVENT SCOUR.
- PROVIDE SILT BAGS FOR DEWATERING.
- CONTRACTOR RESPONSIBLE TO SUBMIT DEWATERING PLAN TO ENGINEER FOR REVIEW. DEWATERING SHALL MEET ALL PERMIT REQUIREMENTS AND BE APPROVED PRIOR TO STARTING ANY CONSTRUCTION ACTIVITIES.
- THE CONTRACTOR MUST DISCHARGE TURBID OR SEDIMENT-LADEN WATER RELATED TO DEWATERING OR BASIN DRAINING (E.G. PUMPED DISCHARGES, TRENCH/DITCH CUTS FOR DRAINAGE) TO A TEMPORARY OR PERMANENT SEDIMENTATION BASIN ON THE PROJECT SITE UNLESS INFEASIBLE. THE CONTRACTOR MAY DISCHARGE FROM THE TEMPORARY OR PERMANENT SEDIMENTATION BASINS TO THE SURFACE WATERS IF THE BASIN WATER HAS BEEN VISUALLY CHECKED TO ENSURE ADEQUATE TREATMENT HAS BEEN OBTAINED IN THE BASIN AND THAT NUISANCE CONDITIONS (SEE MINN. RULES 7050.0210, SUBPART 2) WILL NOT RESULT FROM THE DISCHARGE. IF THE WATER CANNOT BE DISCHARGED TO A SEDIMENTATION BASIN PRIOR TO ENTERING THE SURFACE WATER, IT MUST BE TREATED WITH THE APPROPRIATE BMPs, SUCH THAT THE DISCHARGE DOES NOT ADVERSELY AFFECT THE RECEIVING WATER OR DOWNSTREAM PROPERTIES. IF THE CONTRACTOR MUST DISCHARGE WATER THAT CONTAINS OIL OR GREASE, THE CONTRACTOR MUST USE AN OIL-WATER SEPARATOR OR SUITABLE FILTRATION DEVICE (E.G. CARTRIDGE FILTERS, ABSORBENTS PADS) PRIOR TO DISCHARGING THE WATER. THE CONTRACTOR MUST ENSURE THAT DISCHARGE POINTS ARE ADEQUATELY PROTECTED FROM EROSION AND SCOUR. THE DISCHARGE MUST BE DISPERSED OVER NATURAL ROCK RIPRAP, SAND BAGS, PLASTIC SHEETING, OR OTHER ACCEPTED ENERGY DISSIPATION MEASURES.
- ALL WATER FROM DEWATERING OR BASIN-DRAINING ACTIVITIES MUST BE DISCHARGED IN A MANNER THAT DOES NOT CAUSE NUISANCE CONDITIONS, EROSION IN RECEIVING CHANNELS OR ON DOWNSLOPE PROPERTIES, OR INUNDATION IN WETLANDS CAUSING SIGNIFICANT ADVERSE IMPACT TO THE WETLAND.
- IF THE CONTRACTOR IS USING FILTERS WITH BACKWASH WATER, THE CONTRACTOR MUST HAUL THE BACKWASH WATER AWAY FOR DISPOSAL, RETURN THE BACKWASH WATER TO THE BEGINNING OF THE TREATMENT PROCESS, OR INCORPORATE THE BACKWASH WATER INTO THE SITE IN A MANNER THAT DOES NOT CAUSE EROSION. THE CONTRACTOR MAY DISCHARGE BACKWASH WATER TO THE SANITARY SEWER IF PERMISSION IS GRANTED BY THE SANITARY SEWER AUTHORITY. THE CONTRACTOR MUST REPLACE AND CLEAN THE FILTER MEDIA USED IN DEWATERING DEVICES WHEN REQUIRED TO RETAIN ADEQUATE FUNCTION.

WARNING:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CALLING FOR LOCATIONS OF ALL EXISTNG UTILITIES. THEY SHALL COOPERATE WITH ALL UTILITY COMPANIES IN MAINTAINING THEIR SERVICE AND/OR RELOCATION OF LINES.

THE CONTRACTOR SHALL CONTACT GOPHER STATE ONE CALL AT 651-454-0002 AT LEAST 48 HOURS IN ADVANCE FOR THE LOCATIONS OF ALL UNDERGROUND WIRES, CABLES, CONDUITS, PIPES, MANHOLES, VALVES OR OTHER BURIED STRUCTURES BEFORE DIGGING. THE CONTRACTOR SHALL REPAIR OR REPLACE THE ABOVE WHEN DAMAGED DURING CONSTRUCTION AT NO COST TO THE OWNER.

CALL BEFORE YOU DIG

GOPHER STATE ONE CALL

TWIN CITY AREA: 651-454-0002  
TOLL FREE 1-800-252-1166

GOVERNING SPECIFICATIONS:

- THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" 2016 EDITION & LATEST SUPPLEMENTS.
- CITY ENGINEERS ASSOCIATION OF MINNESOTA (CEAM) STANDARD UTILITIES SPECIFICATIONS (LATEST EDITION)
- CITY OF PLYMOUTH CONSTRUCTION SPECIFICATIONS
- ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS AND ORDINANCE WILL BE COMPLETED WITH IN THE CONSTRUCTION OF THIS PROJECT.

TRAFFIC CONTROL NOTES:

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL CONSTRUCTION STAGING, ON OR OFFSITE, AS NECESSARY TO COMPLETE THE WORK AS SPECIFIED IN THE PROJECT DOCUMENTS. A STAGING PLAN SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ANY CONSTRUCTION RELATED ACTIVITIES.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL. ALL TRAFFIC CONTROL SHALL CONFORM TO THE LATEST EDITION OF THE MMUTCD, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS. A TRAFFIC CONTROL PLAN SHALL BE SUBMITTED TO THE ENGINEER, CITY, AND COUNTY FOR REVIEW AND APPROVAL PRIOR TO ANY CONSTRUCTION RELATED ACTIVITIES. PLANS SHALL COMPLY WITH ALL APPLICABLE PERMIT REQUIREMENTS.
- TRAFFIC CONTROL SHALL ALSO INCLUDE ALL NECESSARY SIGNAGE AND MARKINGS REQUIRED FOR THE BOARDWALK CLOSURE (SIMILAR TO SIDEWALK CLOSURE). THIS SHALL INCLUDE ADVANCED WARNING SIGNS AND NECESSARY FENCING AND SIGNAGE TO PREVENT PEDESTRIANS FROM ACCESSING THE PROPOSED BOARDWALK CONNECTION AREA.

EROSION CONTROL NOTES:

- SEE SHEETS EC-101, EC-102, EC-103, EC-104 FOR EROSION AND SEDIMENT CONTROL MEASURES.
- ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED DEPENDING ON SITE CONDITIONS DURING CONSTRUCTION. COORDINATE WITH ENGINEER.
- CONCRETE WASH-OUT SHALL COMPLETED OFF-SITE OR CONCRETE READY MIX TRUCKS SHALL BE SELF-CONTAINED.
- ALL EROSION CONTROL DEVICES TO BE INSTALLED PRIOR TO COMMENCEMENT OF WORK, MAINTAINED IN ACCORDANCE WITH THE SWPPP, NPDES, AND SPECIFICATIONS THROUGHOUT DURATION OF PROJECT, AND REMOVED UPON ESTABLISHMENT OF FINAL STABILIZATION AS DIRECTED BY ENGINEER. EROSION CONTROL MEASURES USED FOR CONSTRUCTION SHALL NOT BE REMOVED UNTIL AUTHORIZED BY OWNER OR ENGINEER.
- REMOVE TRACKED SEDIMENT FROM ALL PAVED SURFACES BOTH ON AND OFFSITE ON A DAILY BASIS (INCIDENTAL).
- MINIMIZE DUST FROM CONSTRUCTION OPERATIONS BY PROVIDING WATER OR OTHER APPROVED METHOD ON A DAILY BASIS (INCIDENTAL).

HORIZONTAL AND VERTICAL CONTROL:

- THE HORIZONTAL CONTROL FOR THIS PLAN IS HENNEPIN COUNTY COORDINATE RELATIVE TO SYSTEM NAD83(11).
- THE VERTICAL CONTROL FOR THIS PLAN IS NAVD88.

ABBREVIATIONS

BV	BUTTERFLY VALVE
CL	CENTER LINE
CL	CLASS
CMP	CORRUGATE METAL PIPE
CY	CUBIC YARD
DIP	DUCTILE IRON PIPE
EL./ELEV	ELEVATION
EX	EXISTING
FES	FLARED END SECTION
F/F	FACE TO FACE
FM	FORCEMAIN
GV	GATE VALVE
HDPE	HIGH-DENSITY POLYETHYLENE
HP	HIGH POINT
HWL	HIGH WATER LEVEL
HYD	HYDRANT
INV	INVERT
LF	LINEAL FEET
LP	LOW POINT
MH	MANHOLE
NWL	NORMAL WATER LEVEL
PVC	POLYVINYL CHLORIDE
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
R/W	RIGHT-OF-WAY
SF	SQUARE FEET
STA	STATION
SY	SQUARE YARD
TNH	TOP NUT HYDRANT
TYP	TYPICAL
WM	WATERMAIN

EXISTING SYMBOLS/LINES LEGEND

	STORM SEWER FLARED END SECTION
	STORM SEWER CATCH BASIN/MANHOLE
	STORM SEWER
	HYDRANT
	WATER MAIN
	CONTOUR MINOR
	CONTOUR MAJOR
	PROPERTY LINE
	PROJECT AREA LIMITS
	ACCESS ROUTE BOUNDARY
	RETAINING WALL
	EXISTING FENCE
	EXISTING CHANNEL
	APPROXIMATE TREE LINE
	WETLAND BOUNDARY
	DECIDUOUS TREE
	UTILITY POLE
	LIGHT POLE
	EDGE OF PAVEMENT
	SIGN
	MAILBOX
	GUARD POST
	PROPERTY IRON

PROPOSED SYMBOLS/LINES LEGEND

	STORM SEWER FLARED END SECTION
	RIP RAP
	STORM SEWER CATCH BASIN/MANHOLE
	STORM SEWER
	DRAIN TILE
	VEGETATED RIPRAP
	TWO STAGE CHANNEL
	CHANNEL CLEANOUT
	GRADED BANK
	CONTOUR MINOR
	CONTOUR MAJOR
	SPOT ELEVATION
	BITUMINOUS
	CONCRETE
	DECIDUOUS TREE
	ACCESS ROUTE BOUNDARY
	EXISTING FENCE
	PROPERTY LINE
	ROOTWAD WITH STONE TOE
	WATER EDGE
	RETAINING WALL
	PROPOSED CHANNEL CENTERLINE
	PROJECT AREA LIMITS
	ROOTWAD WITH LOG TOE
	VEGETATED RIPRAP TOE
	BARE ROOT SHRUB PLANTING

REMOVAL SYMBOLS/LINES LEGEND

	TREE REMOVAL
--	--------------

EROSION CONTROL SYMBOLS/LINES LEGEND

	EROSION CONTROL BLANKET AND MN SEED MIX 34-262
	HYDROMULCH AND MN SEED MIX 34-262
	TEMPORARY SEED & EROSION CONTROL BLANKET
	SILT FENCE
	FLOTATION SILT CURTAIN
	INLET PROTECTION
	BIOROLL

					SEAL
					I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
3	FOR BID	SJB	EAM	08/22/17	
2	FOR BID	SJB	EAM	08/01/17	ED MATTHIESEN
1	90% DESIGN	SJB	EAM	06/30/17	
0	60% DESIGN	SJB	EAM	04/20/17	
REV	REVISION DESCRIPTION	DWN	APP	REV DATE	DATE 08/01/17 REG. NO. 16800

PRIME CONSULTANT



**WENCK**  
ASSOCIATES

Responsive partner. Exceptional outcomes.

PROJECT TITLE

PLYMOUTH CREEK  
CHANNEL RECONSTRUCTION

CITY OF PLYMOUTH

3400 PLYMOUTH BOULEVARD  
PLYMOUTH, MN 55447

SHEET TITLE

LEGEND AND GENERAL NOTES

DWN BY	CHK'D	APP'D	DWG DATE	MAR 2017
SJB	LNJ	EAM	SCALE	AS SHOWN
PROJECT NO.	SHEET NO.			REV NO.
1756-10	G-102			3





LEGEND

DECIDUOUS TREE/REMOVAL	ACCESS ROUTE BOUNDARY	EXISTING FENCE	PROPERTY LINE	ROOTWAD WITH STONE TOE	WATER EDGE	RETAINING WALL	PROPOSED CHANNEL CENTERLINE	PROJECT AREA LIMITS	ROOTWAD WITH LOG TOE	VEGETATED RIPRAP TOE	CITY OF PLYMOUTH DRAINAGE & UTILITY EASEMENT	CLEARING LIMITS

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PRIME CONSULTANT

**WENCK ASSOCIATES**

Responsive partner. Exceptional outcomes.

PROJECT TITLE	PLYMOUTH CREEK CHANNEL RECONSTRUCTION
CITY OF PLYMOUTH	3400 PLYMOUTH BOULEVARD PLYMOUTH, MN 55447

SHEET TITLE				
EXISTING CONDITIONS AND REMOVALS 27+18 TO 18+00				
DWN BY	CHK'D	APP'D	DWG DATE	MAR 2017
SJB	LNJ	EAM	SCALE	AS SHOWN
PROJECT NO.		SHEET NO.		REV NO.
1756-10		C-101		3





LEGEND

DECIDUOUS TREE/REMOVAL	ACCESS ROUTE BOUNDARY	EXISTING FENCE	PROPERTY LINE	ROOTWAD WITH STONE TOE	WATER EDGE	RETAINING WALL	PROPOSED CHANNEL CENTERLINE	PROJECT AREA LIMITS	ROOTWAD WITH LOG TOE	VEGETATED RIPRAP TOE	CITY OF PLYMOUTH DRAINAGE & UTILITY EASEMENT	CLEARING LIMITS

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ED MATTHIESEN
DATE 08/01/17 REG. NO. 16800

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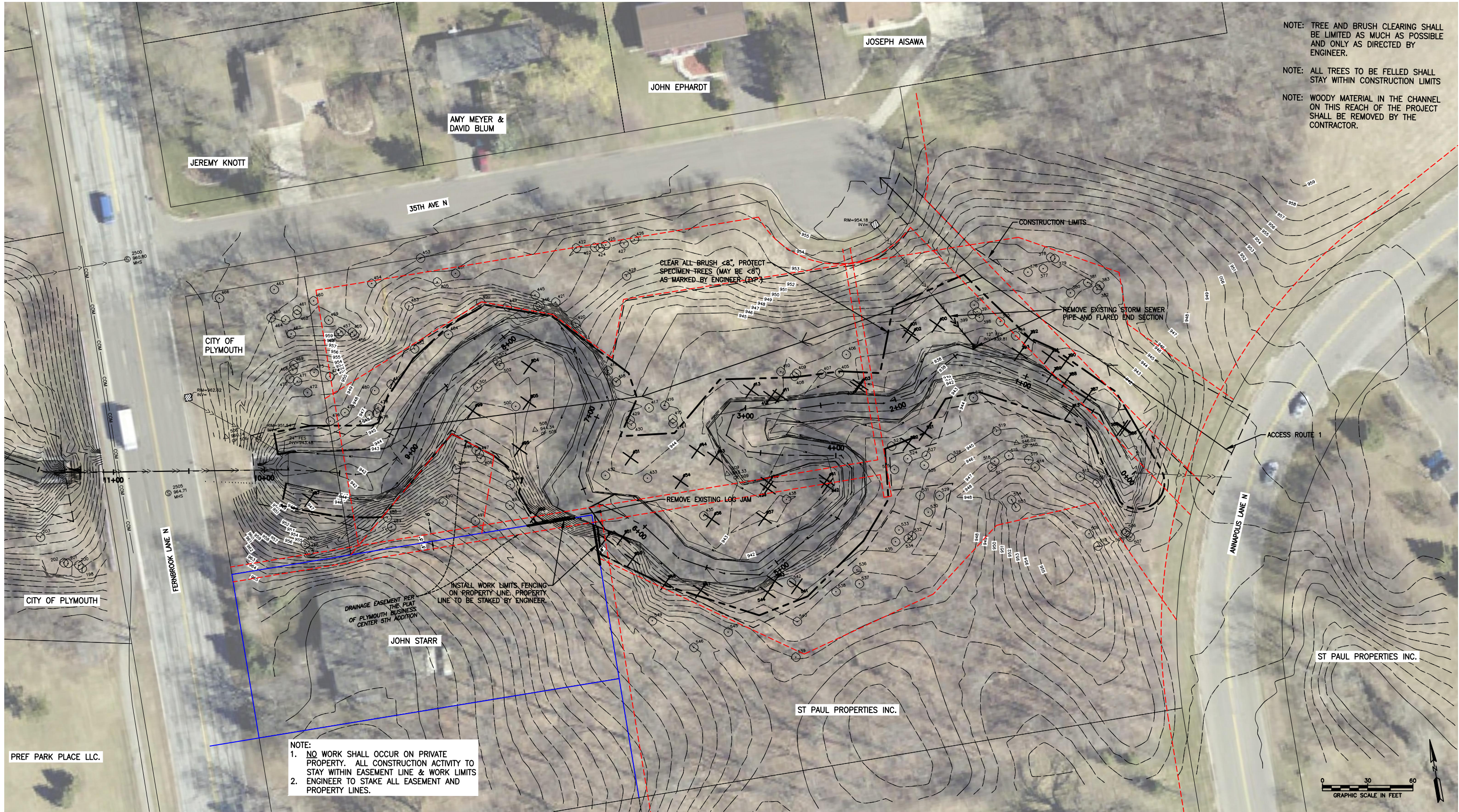
**WENCK ASSOCIATES**

Responsive partner. Exceptional outcomes.

PROJECT TITLE
PLYMOUTH CREEK CHANNEL RECONSTRUCTION
CITY OF PLYMOUTH
3400 PLYMOUTH BOULEVARD PLYMOUTH, MN 55447

SHEET TITLE			
EXISTING CONDITIONS AND REMOVALS 18+00 TO 9+00			
DWN BY SJB	CHK'D LNJ	APP'D EAM	DWG DATE MAR 2017
SCALE		AS SHOWN	
PROJECT NO. 1756-10	SHEET NO. C-102	REV NO. 3	





LEGEND

DECIDUOUS TREE/REMOVAL	ACCESS ROUTE BOUNDARY	EXISTING FENCE	PROPERTY LINE	ROOTWAD WITH STONE TOE	RIPRAP TOE
WATER EDGE	RETAINING WALL	PROPOSED CHANNEL CENTERLINE	PROJECT AREA LIMITS	ROOTWAD WITH LOG TOE	VEGETATED RIPRAP TOE
CITY OF PLYMOUTH DRAINAGE & UTILITY EASEMENT	CLEARING LIMITS				

REV	REVISION DESCRIPTION	DWN	APP	REV DATE
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ED MATTHIENSEN
DATE 08/01/17 REG. NO. 16800

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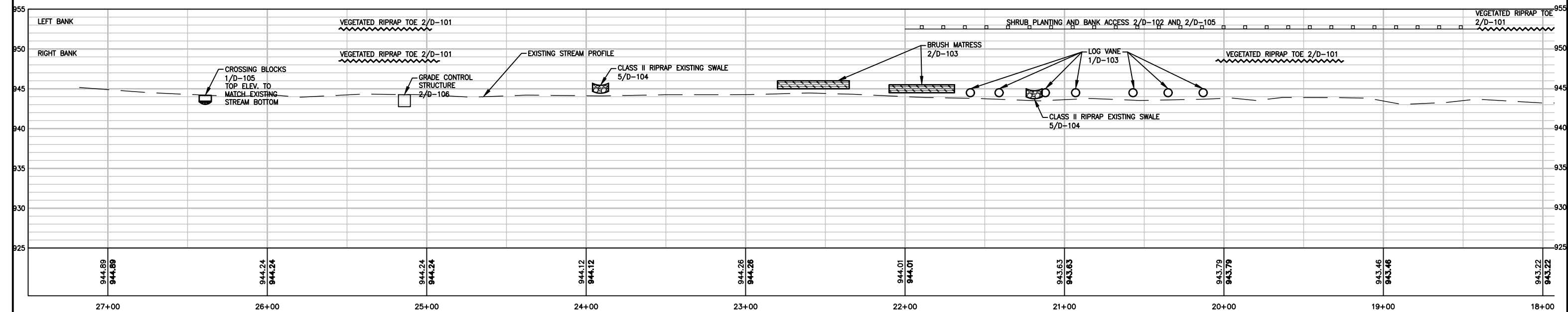
PROJECT TITLE	PLYMOUTH CREEK CHANNEL RECONSTRUCTION
CITY OF PLYMOUTH	3400 PLYMOUTH BOULEVARD PLYMOUTH, MN 55447

SHEET TITLE				
EXISTING CONDITIONS AND REMOVALS 9+00 TO 0+00				
DWN BY SJB	CHK'D LNJ	APP'D EAM	DWG DATE MAR 2017	
SCALE			AS SHOWN	
PROJECT NO. 1756-10		SHEET NO. C-103		REV NO. 3





PLYMOUTH CREEK CENTERLINE STA 27+18 TO 18+00



**LEGEND**

XXXX	DECIDUOUS TREE	-----	WATER EDGE	-----	CITY OF PLYMOUTH DRAINAGE & UTILITY EASEMENT
-----	ACCESS ROUTE BOUNDARY	-----	RETAINING WALL		
-----	EXISTING FENCE	-----	PROPOSED CHANNEL CENTERLINE		
-----	PROPERTY LINE	-----	PROJECT AREA LIMITS		
-----	ROOTWAD WITH STONE TOE	-----	ROOTWAD WITH LOG TOE		
-----	BARE ROOT SHRUB PLANTING	-----	VEGETATED RIPRAP TOE		
-----	SHRUB PLANTING WITH BANK ACCESS				

3	FOR BID	SJB	EAM	08/22/17
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DATE 08/01/17 REG. NO. 16800

PRIME CONSULTANT

**WENCK ASSOCIATES**

Responsive partner. Exceptional outcomes.

PROJECT TITLE

**PLYMOUTH CREEK CHANNEL RECONSTRUCTION**

CITY OF PLYMOUTH

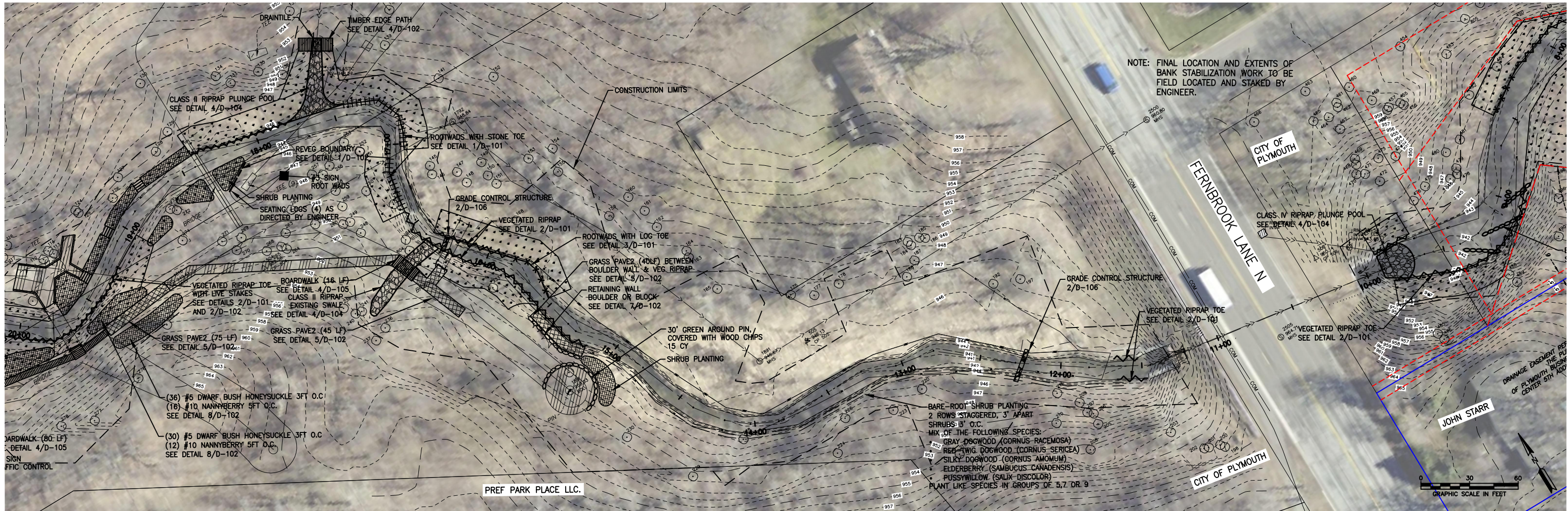
3400 PLYMOUTH BOULEVARD  
PLYMOUTH, MN 55447

SHEET TITLE

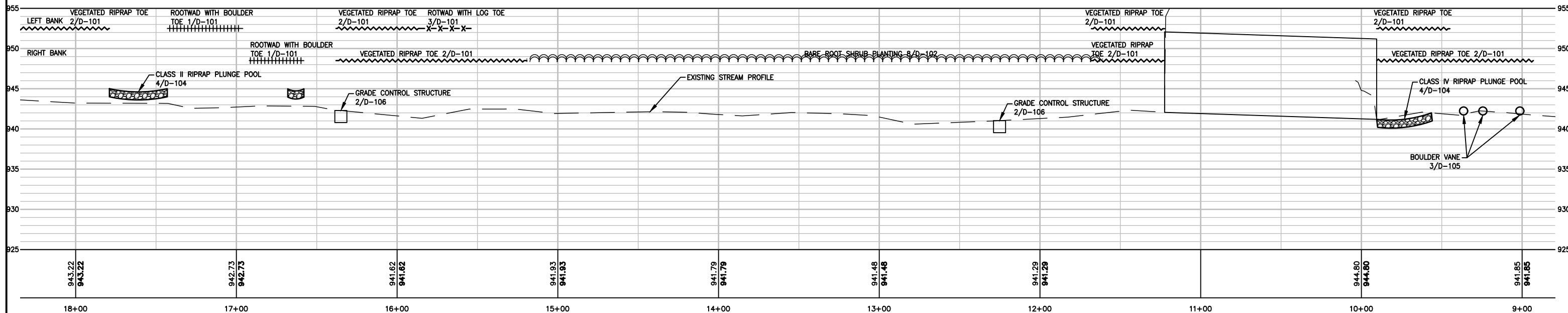
**STABILIZATION PLAN AND PROFILE 27+18 TO 18+00**

DWN BY	CHK'D	APP'D	DWG DATE
SJB	LNJ	EAM	MAR 2017
PROJECT NO.	SHEET NO.	SCALE	AS SHOWN
1756-10	C-104		
			REV NO. 3





PLYMOUTH CREEK CENTERLINE STA 18+00 TO 9+00



LEGEND	
	DECIDUOUS TREE
	ACCESS ROUTE BOUNDARY
	EXISTING FENCE
	PROPERTY LINE
	ROOTWAD WITH STONE TOE
	BARE ROOT SHRUB PLANTING
	SHRUB PLANTING WITH BANK ACCESS
	WATER EDGE
	RETAINING WALL
	PROPOSED CHANNEL CENTERLINE
	PROJECT AREA LIMITS
	ROOTWAD WITH LOG TOE
	VEGETATED RIPRAP TOE

	CITY OF PLYMOUTH DRAINAGE & UTILITY EASEMENT
	WATER EDGE
	RETAINING WALL
	PROPOSED CHANNEL CENTERLINE
	PROJECT AREA LIMITS
	ROOTWAD WITH LOG TOE
	VEGETATED RIPRAP TOE

REV	REVISION DESCRIPTION	DWN	APP	REV DATE
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ED MATTHIEN	DATE 08/01/17 REG. NO. 16800

PRIME CONSULTANT

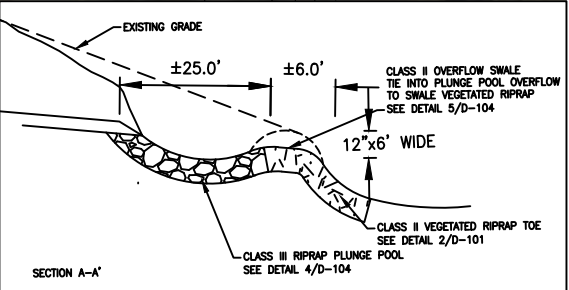
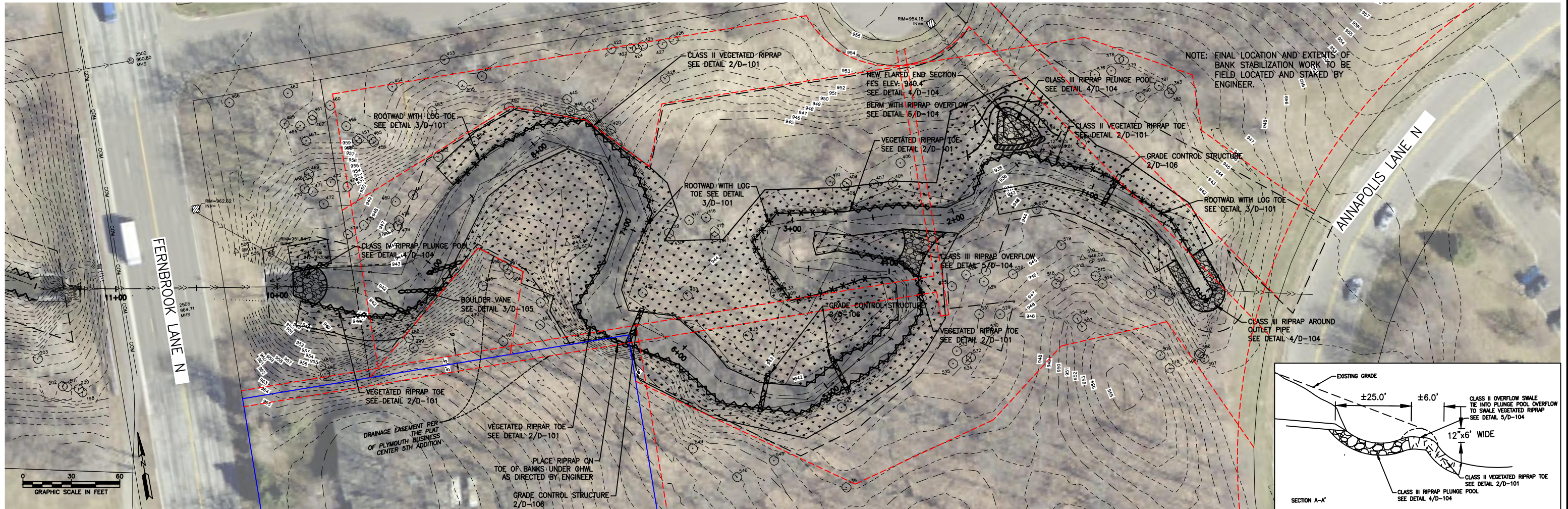
**WENCK ASSOCIATES**

Responsive partner. Exceptional outcomes.

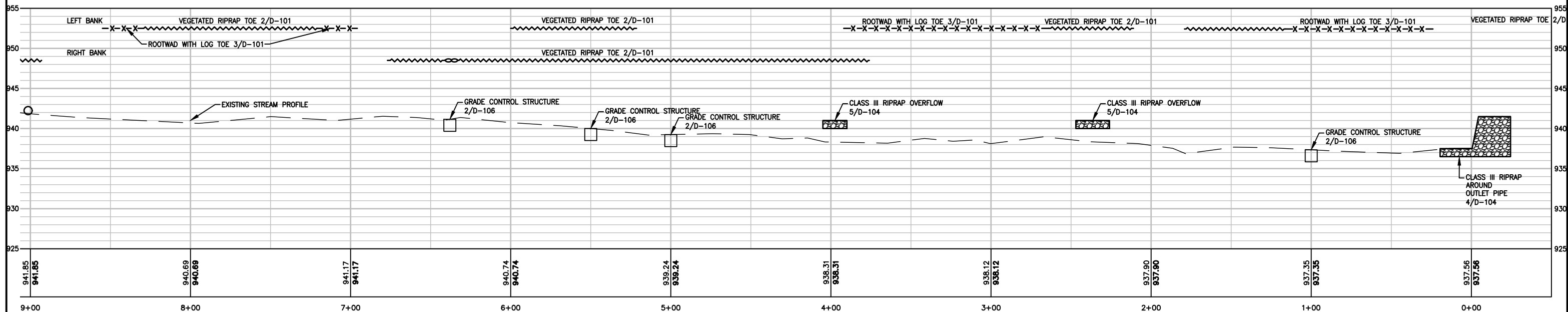
PROJECT TITLE	
PLYMOUTH CREEK CHANNEL RECONSTRUCTION	
CITY OF PLYMOUTH	
3400 PLYMOUTH BOULEVARD PLYMOUTH, MN 55447	

SHEET TITLE			
STABILIZATION PLAN AND PROFILE 18+00 TO 9+00			
DWN BY SJB	CHK'D LNJ	APP'D EAM	DWG DATE MAR 2017
PROJECT NO. 1756-10	SHEET NO. C-105	SCALE AS SHOWN	REV NO. 3





PLYMOUTH CREEK CENTERLINE STA 9+00 TO 0+00



LEGEND	
	DECIDUOUS TREE
	ACCESS ROUTE BOUNDARY
	EXISTING FENCE
	PROPERTY LINE
	ROOTWAD WITH STONE TOE
	BARE ROOT SHRUB PLANTING
	SHRUB PLANTING WITH BANK ACCESS

	WATER EDGE
	RETAINING WALL
	PROPOSED CHANNEL CENTERLINE
	PROJECT AREA LIMITS
	ROOTWAD WITH LOG TOE
	VEGETATED RIPRAP TOE

	CITY OF PLYMOUTH DRAINAGE & UTILITY EASEMENT
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Responsive partner. Exceptional outcomes.

PROJECT TITLE	
PLYMOUTH CREEK CHANNEL RECONSTRUCTION	
CITY OF PLYMOUTH	
3400 PLYMOUTH BOULEVARD PLYMOUTH, MN 55447	

SHEET TITLE			
STABILIZATION PLAN AND PROFILE 9+00 TO 0+00			
DWN BY SJB	CHK'D LNJ	APP'D EAM	DWG DATE MAR 2017
PROJECT NO. 1756-10	SHEET NO. C-106	SCALE AS SHOWN	REV NO. 3



GRANITE STEPPERS—  
60" LONG x 18" WIDE x 7" THICK

SHEET TITLE				
REFERENCE PICTURES				
DWN BY	CHK'D	APP'D	DWG DATE	MAR 2017
SUB	LNJ	TEAM	SCALE	AS SHOWN
PROJECT NO.		SHEET NO.		REV NO.
1756-10		C-601		3



HOLE 8 LOOKING ACROSS TO TEE BOX OF HOLE 12: STREAM ACCESS + STABILIZATION



STONE STEPS TO CREEKS EDGE



SHRUB PLANTINGS



ON HOLE 8 HAS IS A HIGH POTENTIAL FOR DISC'S TO ENTER THE CREEK. THE EXISTING BANKS ARE IN NEED OF EROSION MITIGATION VEGETATION AND ARMORING. IN ORDER TO ACCOMPLISH BOTH DESIRED OUTCOMES A COMBINATION OF SHRUB PLANTINGS TO STABILIZES THE BANK WITH ACCESS STEPS LEADING TO THE CREEK EDGE FOR FISHING DISC'S OUT. THE OUTSIDE BEND WILL BE ARMORED WITH VEGETATED RIPRAP TO COMBAT FLOW VELOCITY AND PRESERVE THE VISUAL AESTHETIC WITH TALL GRASSES GROWING OVER THE ARMORING.


EXISTING SWALES



RIPRAP SWALE



MULTIPLE EXISTING DRAINAGE SWALES OCCUR WITHIN THE DISC GOLF COURSE. THE ADDITION OF RIPRAP TO STABILIZE THE SOILS WILL MITIGATE SOIL MIGRATION INTO THE CREEK. PLAYABILITY OF THE COURSE WILL NOT BE AFFECTED AND A REDUCTION OF OVERALL MUD WILL BE ACHIEVED.

					SEAL
					I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
3	FOR BID	SJB	EAM	08/22/17	
2	FOR BID	SJB	EAM	08/01/17	ED MATTHIESEN
1	90% DESIGN	SJB	EAM	06/30/17	
0	60% DESIGN	SJB	EAM	04/20/17	
REV	REVISION DESCRIPTION	DWN	APP	REV DATE	DATE 08/01/17 REG. NO. 16800

PRIME CONSULTANT

  
Responsive partner. Exceptional outcomes.

PROJECT TITLE	
PLYMOUTH CREEK CHANNEL RECONSTRUCTION	
CITY OF PLYMOUTH	
3400 PLYMOUTH BOULEVARD PLYMOUTH, MN 55447	

SHEET TITLE			
REFERENCE PICTURES			
DWN BY	CHK'D	APP'D	DWG DATE
SJB	LNJ	EAM	MAR 2017
PROJECT NO.		SCALE	
1756-10		AS SHOWN	
SHEET NO.		REV NO.	
C-602		3	



HOLE 8: MUDDY PATH OPTIONS



SHRUB PLANTINGS



BOARDWALK TO MATCH EXISTING

FOR AREAS OF HEAVY FOOT TRAFFIC IN SUNNY LOCATIONS THE USE OF GRASSPAVE2 WOULD ALLOW FOR REDUCED COMPACTION AND TRAMPLING OF TURF GRASS COVER. THE SOILS IN THESE LOCATIONS WOULD THUS BE STABILIZED WHILE ALLOWING FOR CONSISTENT GOLFER TRAFFIC. IN AREAS OF HEAVILY SHADE DUE TO TREE CANOPY THE USE OF ADDITIONAL BOARDWALKS WILL SERVE TO FOCUS TRAFFIC MOVEMENTS AROUND TREE ROOTS AND BARE SOILS.




GRASS PAVE2



STEEP SLOPES CAN BE RECTIFIED THROUGH THE USE OF BOARDWALKS WHICH ALSO MINIMIZES THE FOOT TRAFFIC TRAMPLING ANY VEGETATION.



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2	FOR BID	SJB	EAM	08/01/17	ED MATTHIESEN
1	90% DESIGN	SJB	EAM	06/30/17	
0	60% DESIGN	SJB	EAM	04/20/17	
REV	REVISION DESCRIPTION	DWN	APP	REV DATE	DATE 08/01/17 REG. NO. 16800

PRIME CONSULTANT

**WENCK**  
ASSOCIATES

Responsive partner. Exceptional outcomes.

PROJECT TITLE

PLYMOUTH CREEK  
CHANNEL RECONSTRUCTION

CITY OF PLYMOUTH

3400 PLYMOUTH BOULEVARD  
PLYMOUTH, MN 55447

REFERENCE PICTURES					
DWN BY	CHK'D	APP'D	DWG DATE	MAR 2017	
SJB	LNJ	EAM	SCALE	AS SHOWN	
PROJECT NO.		SHEET NO.		REV NO.	
1756-10		C-603		3	



A photograph of a park area in autumn. The ground is covered in fallen brown leaves. In the center, there is a low, rectangular wooden platform. To the right, there is a black trash can and a small wooden bench. The background is filled with bare trees and a cloudy sky.

					SEAL	<div>PRIME CONSULTANT</div> <div></div> <div>Responsive partner. Exceptional outcomes.</div>	PROJECT TITLE	SHEET TITLE				
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3	FOR BID	SJB	EAM	08/22/17			CITY OF PLYMOUTH	DWN BY	CHK'D	APP'D	DWG DATE	MAR 2017
2	FOR BID	SJB	EAM	08/01/17				SJB	LNJ	EAM	SCALE	AS SHOWN
1	90% DESIGN	SJB	EAM	06/30/17				PROJECT NO.	SHEET NO.		REV NO.	
0	60% DESIGN	SJB	EAM	04/20/17				1756-10		C-604		3
REV	REVISION DESCRIPTION	DWN	APP	REV DATE	DATE 08/01/17 REG. NO. 16800		3400 PLYMOUTH BOULEVARD PLYMOUTH, MN 55447					



## A photograph of a wooded area with many bare trees and a ground covered in fallen leaves. In the background, a large, multi-story building is visible through the trees.

A photograph of a small stream flowing through a forest. The trees are mostly bare, suggesting autumn or winter. The ground is covered with fallen leaves and branches. The stream is narrow and reflects the surrounding trees. In the background, a small bridge or structure is visible through the trees.

A vibrant garden scene featuring a dense cluster of orange and yellow Echinacea flowers in the foreground, surrounded by lush green foliage and purple flowers in the background.



					SEAL	<div><div><div></div><div></div><div></div></div><div><div>WENCK</div><div>ASSOCIATES</div></div></div> <div>PRIME CONSULTANT</div> <div>Responsive partner. Exceptional outcomes.</div>	PROJECT TITLE	SHEET TITLE				
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2	FOR BID	SJB	EAM	08/01/17				SJB	LNJ	EAM	SCALE	AS SHOWN
1	90% DESIGN	SJB	EAM	06/30/17	ED MATTHESEN							
0	60% DESIGN	SJB	EAM	04/20/17	DATE 08/01/17		REG. NO. 16800					
REV	REVISION DESCRIPTION	DWN	APP	REV DATE			CITY OF PLYMOUTH					
							3400 PLYMOUTH BOULEVARD PLYMOUTH, MN 55447					



Construction Dates: Fall 2017 - Spring 2018

Party Responsible for Long Term Operation and Maintenance of the Site - OWNER

City of Plymouth  
3400 Plymouth Boulevard  
Plymouth, MN 55447-1482

Derek Asche, Water Resources Manager  
763-509-5526  
engineering@plymouthmn.gov

Party Responsible for Implementation of the SWPPP - CONTRACTOR

Contractor	
Contact Name	
Phone	
Email	

Surface Area Tabulation

Total Disturbed Area	1.5 acres
Existing Impervious Area	0.1 acres
Proposed Impervious Area	0.1 acres
Net Impervious Area Increase	<0.1 acres

Project Description

The project consists of riparian buffer restoration, streambank stabilization, installation of boardwalk, path improvements, and improvements to several existing disc golf holes and tee boxes.

Temporary Sediment Basin

Because the total disturbed area for this project is less than 5 acres, there are no additional temporary sedimentation basin requirements.

EROSION AND SEDIMENT CONTROL PRACTICES

All exposed soil areas must have temporary erosion protection (erosion control blanket, seed) as soon as possible or within 7 days after the construction activity in that portion of the site has temporarily or permanently ceased.

CONTRACTOR shall implement appropriate construction phasing, vegetative buffer strips, horizontal slope grading, and other construction practices that minimize erosion when practical. The normal wetted perimeter of any temporary or permanent drainage ditch that drains water from a construction site, or diverts water around a site, must be stabilized within 200 lineal feet from the property edge, or from the point of discharge to any surface water. Stabilization must be completed within 24 hours of connecting to a surface water. Pipe outlets must be provided with temporary or permanent energy dissipation within 24 hours of connection to a surface water.

The following measures will be taken as sediment control practices in order to minimize sediments from entering surface waters:  
The following measures will be taken as sediment control practices in order to minimize sediments from entering surface waters:  
1. Installation of floating silt curtain within the creek channel at the downgradient extents of construction activity prior to site disturbance. Floating silt curtain shall be installed in two locations upgradient of the culverts under Fernbrook Lane and Annapolis Lane as shown on Sheets EC-102 and EC-103. Install silt curtain as shown on Sheet D-104.  
2. Installation of perimeter silt fence in the locations shown on Sheets EC-102 through EC-104 prior to site disturbance. Perimeter silt fence shall be installed as shown on Sheet D-104.  
3. Installation of inlet protection in the locations shown on Sheets EC-102 through EC-104 prior to site disturbance. Inlet protection shall be installed as shown on Sheet D-104.  
4. Installation of rock construction entrances in the locations shown on Sheet C201. Rock construction entrances shall be constructed as shown on Sheet C803 to prevent tracking of sediment offsite. Street sweeping of tracked sediment shall be performed as required.

Dewatering

Turbid or sediment-laden water must be treated with the appropriate BMPs, such that discharge does not adversely affect the receiving water. Ensure that discharge points are adequately protected from erosion and scour. CONTRACTOR responsible to develop and submit dewatering plan to engineer, secure any required permits, and comply with permits.

Final Stabilization

All areas disturbed by construction will receive seed according to the plans and specifications and within the specified vegetative time schedule.

Final stabilization will occur when the site has a uniform vegetative cover with a density of 70% over the entire disturbed area. All temporary synthetic erosion prevention and sediment control BMPs (such as silt fence) must be removed as part of the site final stabilization. All sediment must be cleaned out of conveyances and temporary sedimentation basins if applicable.

Notice of Termination (NOT) must be submitted within 30 days of final stabilization. Before Termination, revegetation establishment and coverage must meet the permit requirements.

Pollution Prevention Measures

**Solid Waste**  
Solid waste, including but not limited to, collected asphalt and concrete millings, floating debris, paper, plastic, fabric, construction and demolition debris and other waste must be disposed of properly and must comply with MPCA disposal requirements.

**Hazardous Materials**  
Hazardous materials, including but not limited to oil, gasoline, paint and any hazardous substance must be properly stored including secondary containments, to prevent spills, leaks or other discharge. Restricted access to storage areas must be provided to prevent vandalism. Storage and disposal of hazardous waste must be in compliance with MCPA regulations.

**Washing of Construction Vehicles**  
External washing of trucks and other construction vehicles must be limited to a defined area of the site. Runoff must be contained and waste properly disposed of. No engine degreasing is allowed on site.

**Concrete Washout Area**  
The contractor shall provide effective containment for all liquid and solid wastes generated by washout operations to prevent runoff to surface waters. Liquid and solid wastes must be disposed of properly in compliance with MPCA rules.

Amendments

Amend the SWPPP as necessary to address any changes in design, construction, operation, maintenance, weather or seasonal conditions that have a significant effect on discharge of pollutants to surface or underground waters; or to address concerns identified during inspections or investigations by OWNER or local government entities.

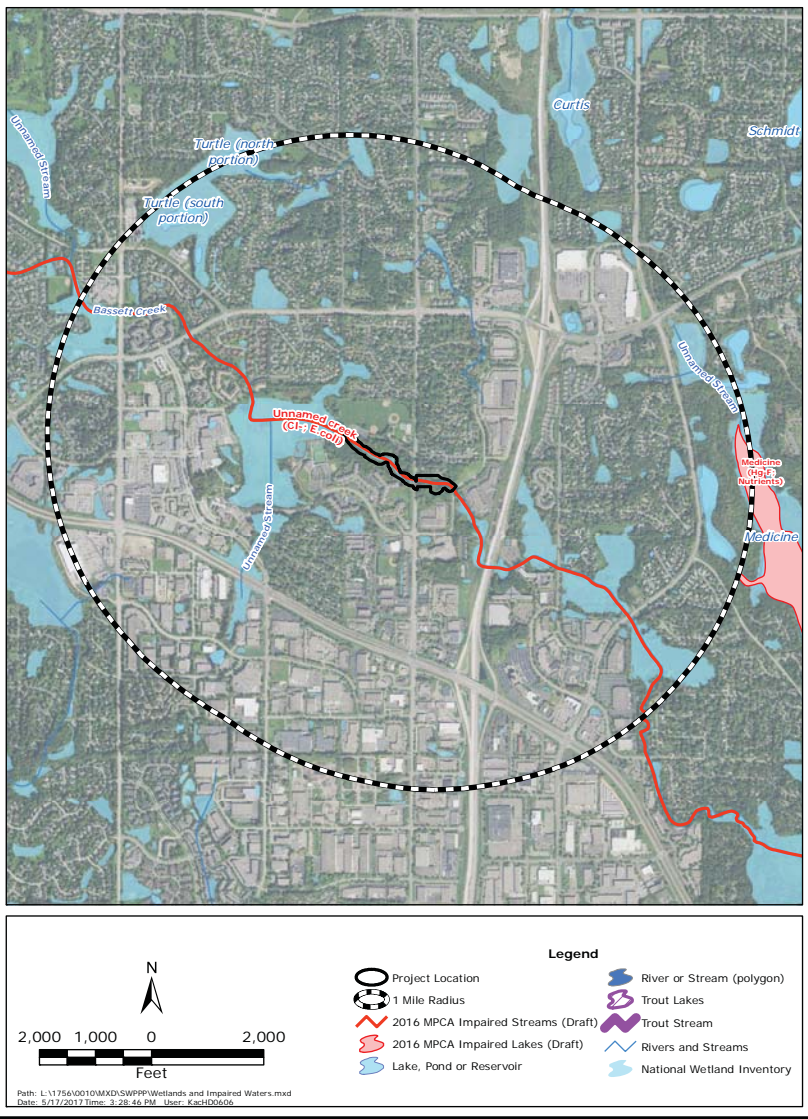
Record Retention

The SWPPP, all changes to it, and inspection and maintenance records must be kept on-site during construction. The OWNER must retain a copy of the SWPPP along with the following records for three (3) years after submittal of the Notice of Termination.  
1. Any other permits required for the project;  
2. Records of all inspection and maintenance conducted during construction;  
3. All permanent operations and maintenance agreements that have been implemented, including all right of way, contract, covenants and other binding requirements regarding perpetual maintenance;  
4. All required calculations for design of the temporary and permanent stormwater management systems.

Inspections

The inspection log will be completed by the CONTRACTOR for the construction site. Inspections at the site will be completed as follows:  
Once every seven (7) days during active construction and, Within 24 hours after a rainfall event greater than 0.5 inches in 24 hours.

The individual performing inspections must be trained as required by part IV.E of the Permit. CONTRACTOR to provide OWNER with proof of training. Inspections must include stabilized areas, erosion prevention and sediment control BMPs, and infiltration areas. Corrective actions must be identified and date of correction must be noted as identified in Section IV.E. of the Permit.



**IMPAIRED WATERS, SPECIAL WATERS, AND WETLANDS**  
This Project is not located within 1 mile of a special water.

This Project is located within 1 mile of an impaired water (see figure above):  
Plymouth Creek impaired for Cl-, E. coli  
Because of the proximity of the project to an impaired water during construction, all exposed soil areas must be stabilized as soon as possible to limit soil erosion but in no case later than 7 days after the construction activity in that portion of the site has temporarily or permanently ceased.

This Project will impact wetlands. A wetland delineation has been performed and wetland permits have been obtained.

EROSION CONTROL ESTIMATED QUANTITIES

Material	Quantity
MnDOT Seed Mix 34-262	14.5 lb/acre x 1.5 = 22 LBS.
Erosion Control Blanket	4935 SY
Hydrolic Matrix, Type mulch	1600 LBS
Inlet Protection	5 EA
Flotation Silt Curtain	50 LF
Contruction Entrance	4 EA
Bioroll	4000 LF
Silt Fence	400 LF

UNIVERSITY OF MINNESOTA

Louis H Sigtermans  
Minneapolis, MN

Design of Construction SWPPP  
(May 31, 2020)

CERTIFICATION

In accordance with Part III.A.2 of the General Permit Authorization to Discharge Stormwater Associated with Construction Activity under the NPDES, the preparer of this document was trained under the University of Minnesota Erosion and Sediment Control Certification Program. Mr. Louis Sigtermans' certification in Design of SWPPP is valid through May 31, 2020.

					SEAL
					I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
3	FOR BID	SJB	EAM	0 8/22/17	
2	FOR BID	SJB	EAM	08/01/17	
1	90% DESIGN	SJB	EAM	08/30/17	
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REV	REVISION DESCRIPTION	DWN	APP	REV DATE	DATE 08/01/17 REG. NO. 16800

PRIME CONSULTANT



Responsive partner. Exceptional outcomes.

PROJECT TITLE

PLYMOUTH CREEK  
CHANNEL RECONSTRUCTION

CITY OF PLYMOUTH

3400 PLYMOUTH BOULEVARD  
PLYMOUTH, MN 55447

SHEET TITLE

SWPPP

DWN BY CHK'D APP'D DWG DATE MAR 2017

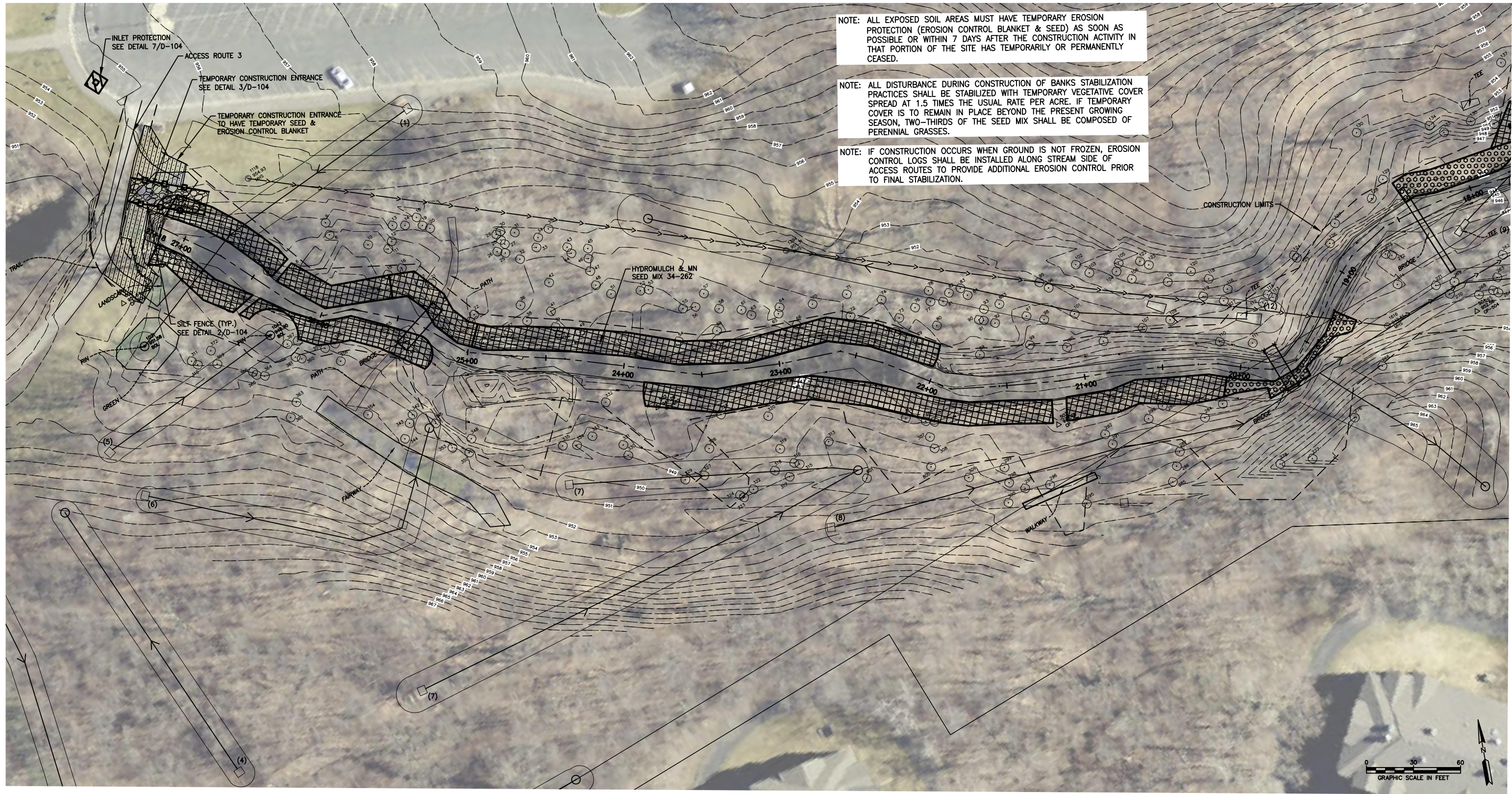
SJB LNJ EAM SCALE AS SHOWN

PROJECT NO. SHEET NO. REV NO.

1758-10 EC-101

3





NOTE: ALL EXPOSED SOIL AREAS MUST HAVE TEMPORARY EROSION PROTECTION (EROSION CONTROL BLANKET & SEED) AS SOON AS POSSIBLE OR WITHIN 7 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.

NOTE: ALL DISTURBANCE DURING CONSTRUCTION OF BANKS STABILIZATION PRACTICES SHALL BE STABILIZED WITH TEMPORARY VEGETATIVE COVER SPREAD AT 1.5 TIMES THE USUAL RATE PER ACRE. IF TEMPORARY COVER IS TO REMAIN IN PLACE BEYOND THE PRESENT GROWING SEASON, TWO-THIRDS OF THE SEED MIX SHALL BE COMPOSED OF PERENNIAL GRASSES.

NOTE: IF CONSTRUCTION OCCURS WHEN GROUND IS NOT FROZEN, EROSION CONTROL LOGS SHALL BE INSTALLED ALONG STREAM SIDE OF ACCESS ROUTES TO PROVIDE ADDITIONAL EROSION CONTROL PRIOR TO FINAL STABILIZATION.

LEGEND

	DECIDUOUS TREE		WATER EDGE
	ACCESS ROUTE BOUNDARY		RETAINING WALL
	EXISTING FENCE		PROPOSED CHANNEL CENTERLINE
	PROPERTY LINE		PROJECT AREA LIMITS
	EROSION CONTROL BLANKET AND MN SEED MIX 34-262		FLOTATION SILT CURTAIN
	HYDROMULCH AND MN SEED MIX 34-262		INLET PROTECTION
			BIOROLL
			SILT FENCE
			TEMPORARY SEED & EROSION CONTROL BLANKET
			CITY OF PLYMOUTH DRAINAGE & UTILITY EASEMENT

REV	REVISION DESCRIPTION	DWN	APP	REV DATE
3	FOR BID	SJB	EAM	08/22/17
2	FOR BID	SJB	EAM	08/01/17
1	90% DESIGN	SJB	EAM	06/30/17
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ED MATTHIESEN  
DATE 08/01/17 REG. NO. 16800

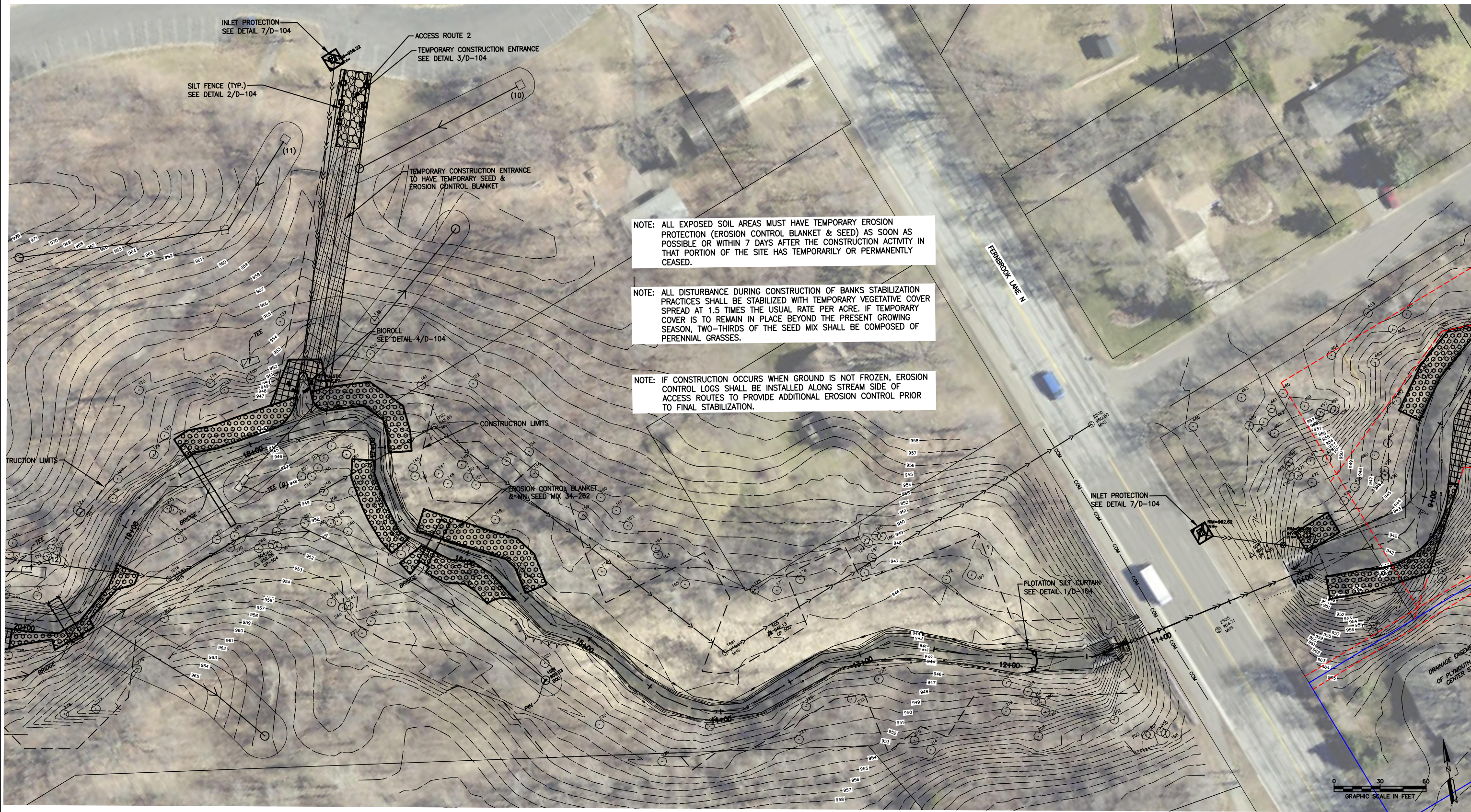
PRIME CONSULTANT  
  
Responsive partner. Exceptional outcomes.

PROJECT TITLE  
PLYMOUTH CREEK CHANNEL RECONSTRUCTION  
CITY OF PLYMOUTH  
3400 PLYMOUTH BOULEVARD  
PLYMOUTH, MN 55447

SHEET TITLE EROSION AND SEDIMENT CONTROL PLAN 27+18 TO 18+00			
DWN BY SJB	CHK'D LNJ	APP'D EAM	DWG DATE MAR 2017
PROJECT NO. 1756-10	SHEET NO. EC-102	SCALE AS SHOWN	REV NO. 3



Plot Date & Time: 15 September 2017 02:31 PM  
\\V:\758\10\040\04\03-102 Erosion & Sediment Control.dwg



NOTE: ALL EXPOSED SOIL AREAS MUST HAVE TEMPORARY EROSION PROTECTION (EROSION CONTROL BLANKET & SEED) AS SOON AS POSSIBLE OR WITHIN 7 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.

NOTE: ALL DISTURBANCE DURING CONSTRUCTION OF BANKS STABILIZATION PRACTICES SHALL BE STABILIZED WITH TEMPORARY VEGETATIVE COVER SPREAD AT 1.5 TIMES THE USUAL RATE PER ACRE. IF TEMPORARY COVER IS TO REMAIN IN PLACE BEYOND THE PRESENT GROWING SEASON, TWO-THIRDS OF THE SEED MIX SHALL BE COMPOSED OF PERENNIAL GRASSES.

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LEGEND

	DECIDUOUS TREE		WATER EDGE
	ACCESS ROUTE BOUNDARY		RETAINING WALL
	EXISTING FENCE		PROPOSED CHANNEL CENTERLINE
	PROPERTY LINE		PROJECT AREA LIMITS
	EROSION CONTROL BLANKET AND MN SEED MIX 34-262		FLOTATION SILT CURTAIN
	HYDROMULCH AND MN SEED MIX 34-262		INLET PROTECTION
			BIOROLL
			SILT FENCE
			TEMPORARY SEED & EROSION CONTROL BLANKET
			CITY OF PLYMOUTH DRAINAGE & UTILITY EASEMENT

REV	REVISION DESCRIPTION	DWN	APP	REV DATE
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ED MATTHIEN	
DATE 08/01/17	REG. NO. 16800

PRIME CONSULTANT

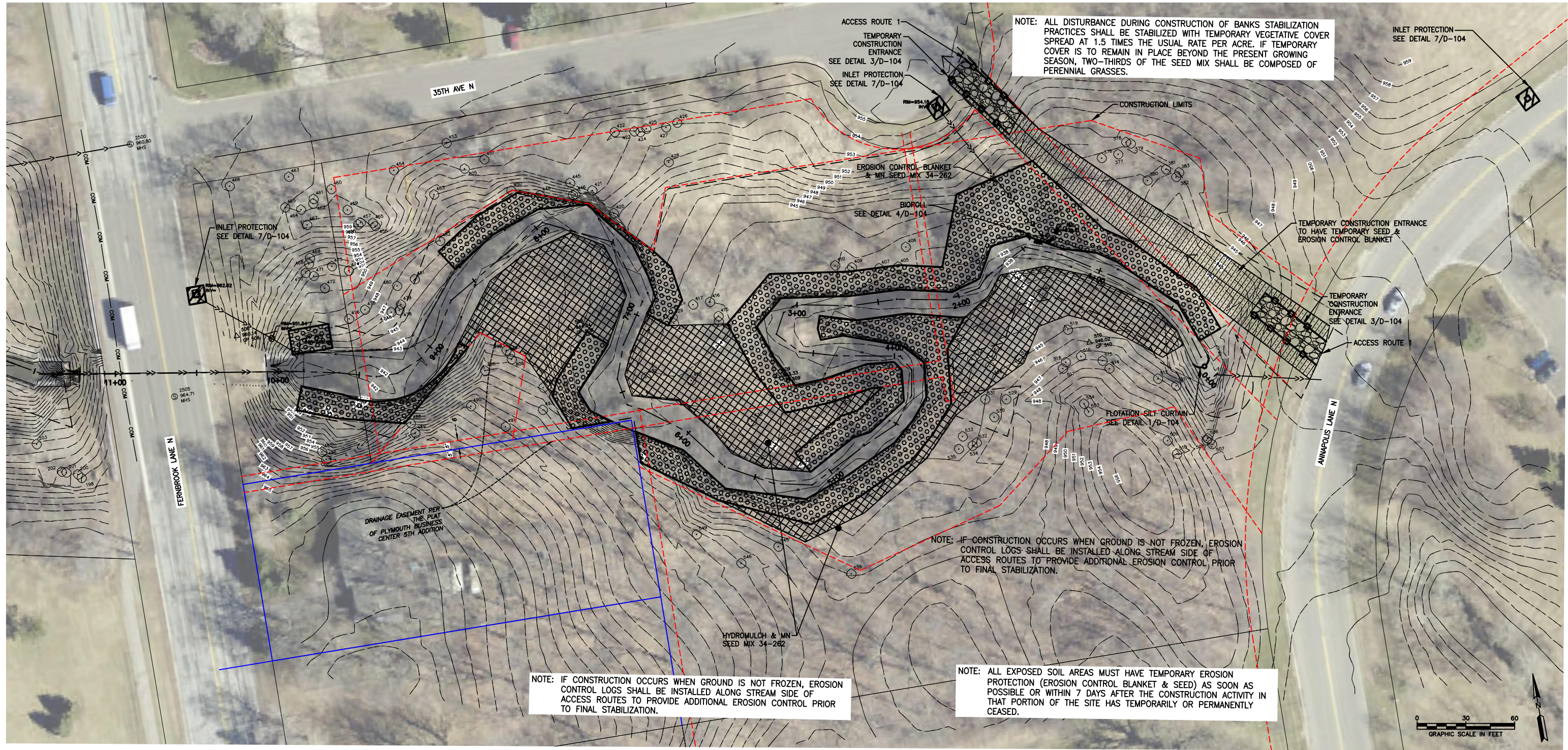
**WENCK ASSOCIATES**

Responsive partner. Exceptional outcomes.

PROJECT TITLE	PLYMOUTH CREEK CHANNEL RECONSTRUCTION
CITY OF PLYMOUTH	3400 PLYMOUTH BOULEVARD PLYMOUTH, MN 55447

SHEET TITLE				
EROSION AND SEDIMENT CONTROL PLAN 18+00 TO 9+00				
DWN BY	CHK'D	APP'D	DWG DATE	MAR 2017
SJB	LNJ	EAM	SCALE	AS SHOWN
PROJECT NO.		SHEET NO.		REV NO.
1756-10		EC-103		3





LEGEND

	DECIDUOUS TREE		WATER EDGE
	ACCESS ROUTE BOUNDARY		RETAINING WALL
	EXISTING FENCE		PROPOSED CHANNEL CENTERLINE
	PROPERTY LINE		PROJECT AREA LIMITS
	EROSION CONTROL BLANKET AND MN SEED MIX 34-262		FLOTATION SILT CURTAIN
	HYDROMULCH AND MN SEED MIX 34-262		INLET PROTECTION
			BIOTROLL
			SILT FENCE
			TEMPORARY SEED & EROSION CONTROL BLANKET
			CITY OF PLYMOUTH DRAINAGE & UTILITY EASEMENT

REV	REVISION DESCRIPTION	DWN	APP	REV DATE
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DATE 08/01/17 REG. NO. 16800

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PROJECT TITLE

PLYMOUTH CREEK CHANNEL RECONSTRUCTION

CITY OF PLYMOUTH

3400 PLYMOUTH BOULEVARD  
PLYMOUTH, MN 55447

SHEET TITLE

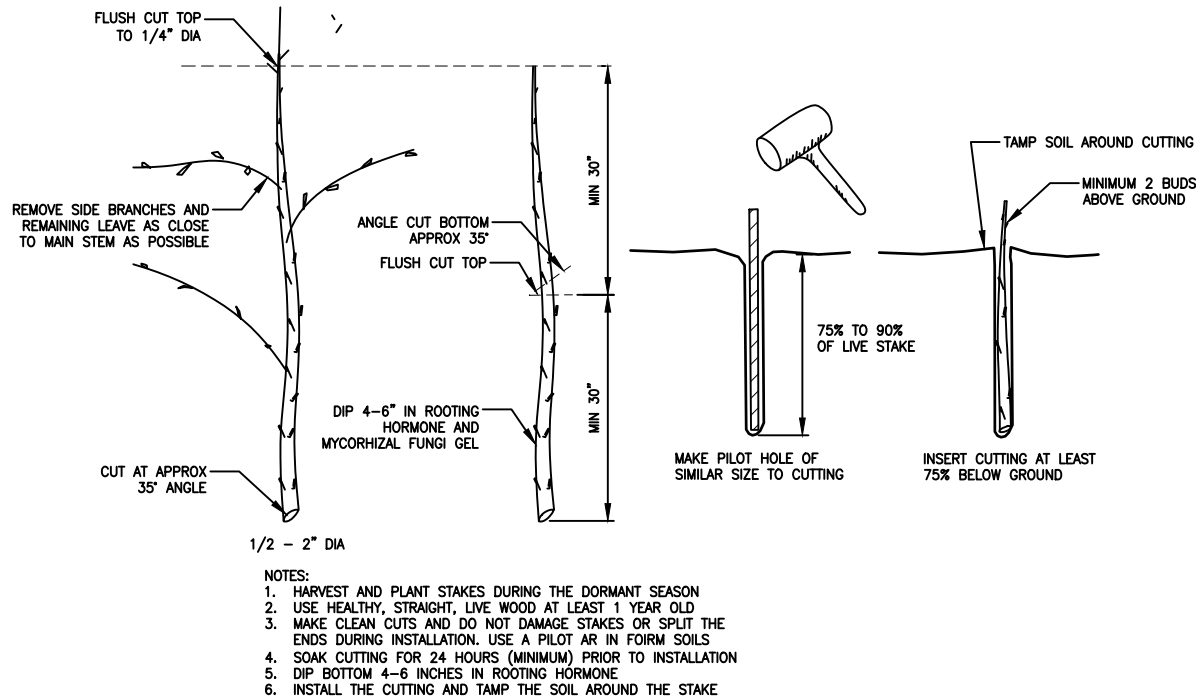
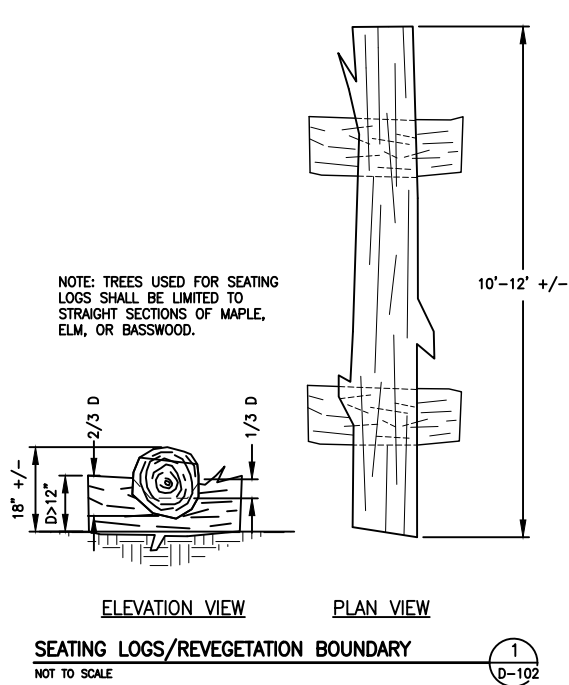
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9+00 TO 0+00

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PROJECT NO.	SHEET NO.	SCALE	REV NO.
1756-10	EC-104	AS SHOWN	3





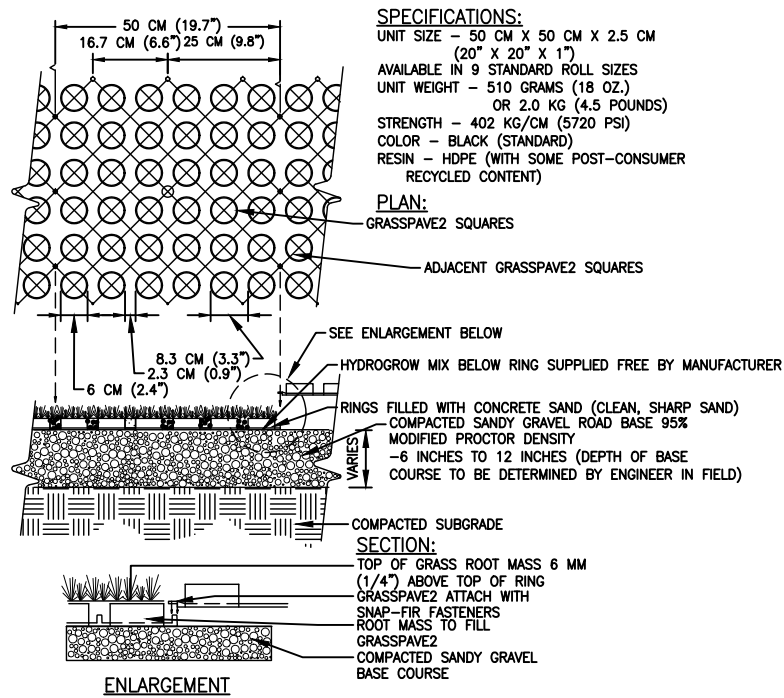




LIVE STAKE HARVEST AND INSTALLATION

NOT TO SCALE

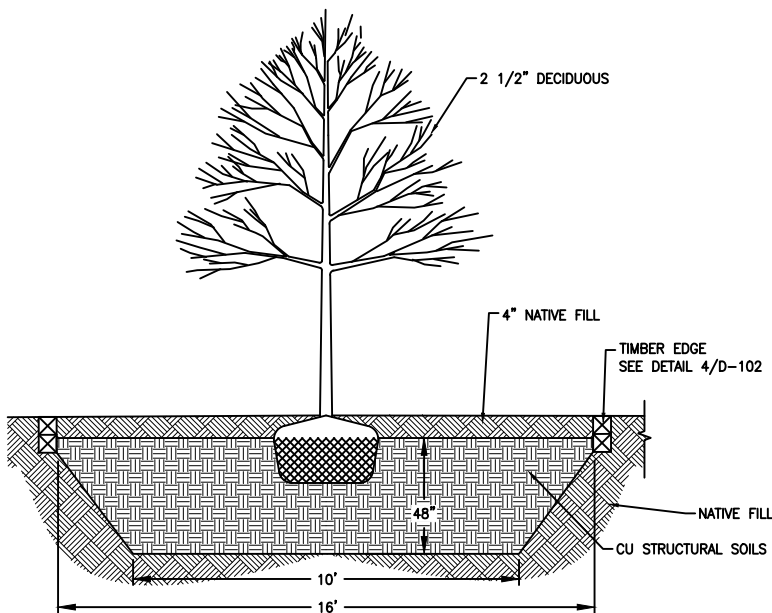
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D-102



GRASSPAVE2 DETAIL

NOT TO SCALE

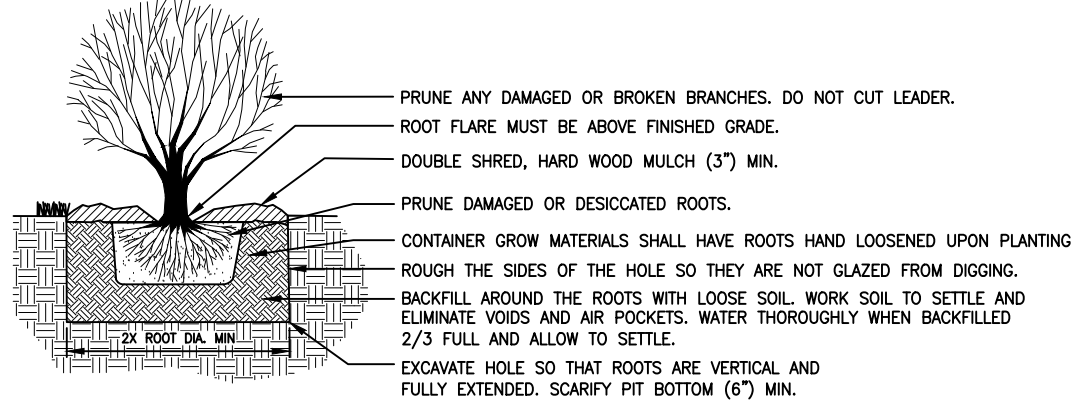
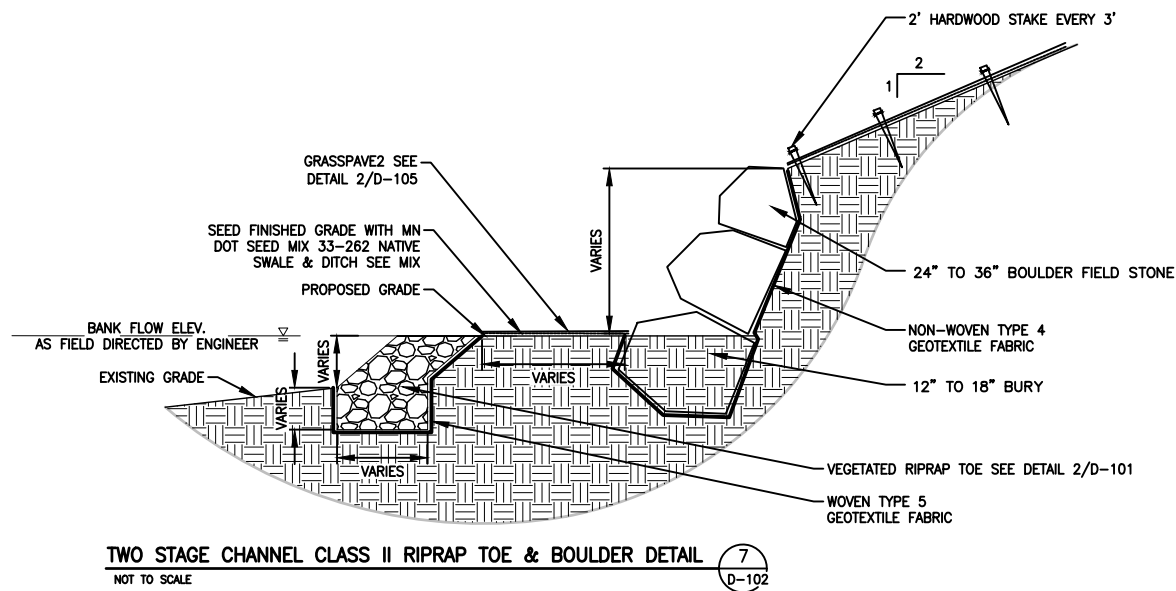
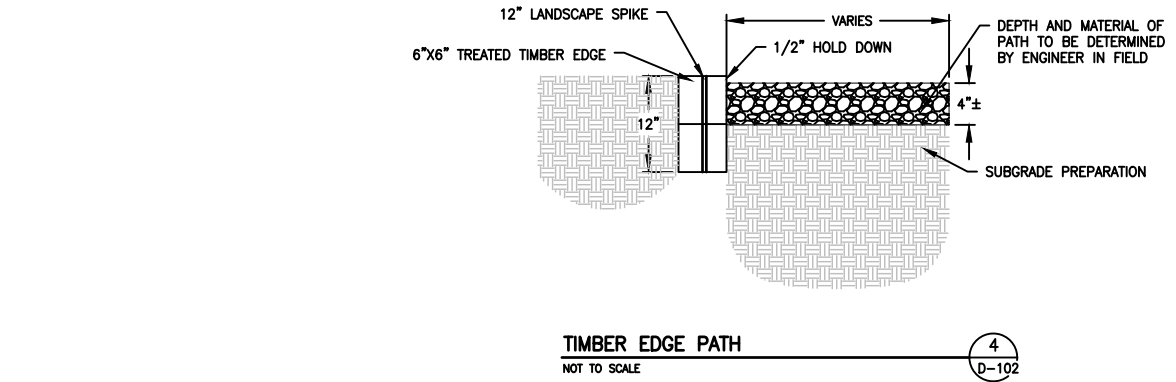
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D-102



TREE WITH STRUCTURAL SOIL BASE

NOT TO SCALE

6  
D-102



SHRUB PLANTING

NOT TO SCALE

8  
D-102

3	FOR BID	SJB	EAM	08/22/17
2	FOR BID	SJB	EAM	08/01/17
1	90% DESIGN	SJB	EAM	06/30/17
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REV	REVISION DESCRIPTION	DWN	APP	REV DATE

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ED MATTHIESEN

DATE 08/01/17 REG. NO. 16800

PRIME CONSULTANT

**WENCK**  
ASSOCIATES

Responsive partner. Exceptional outcomes.

PROJECT TITLE

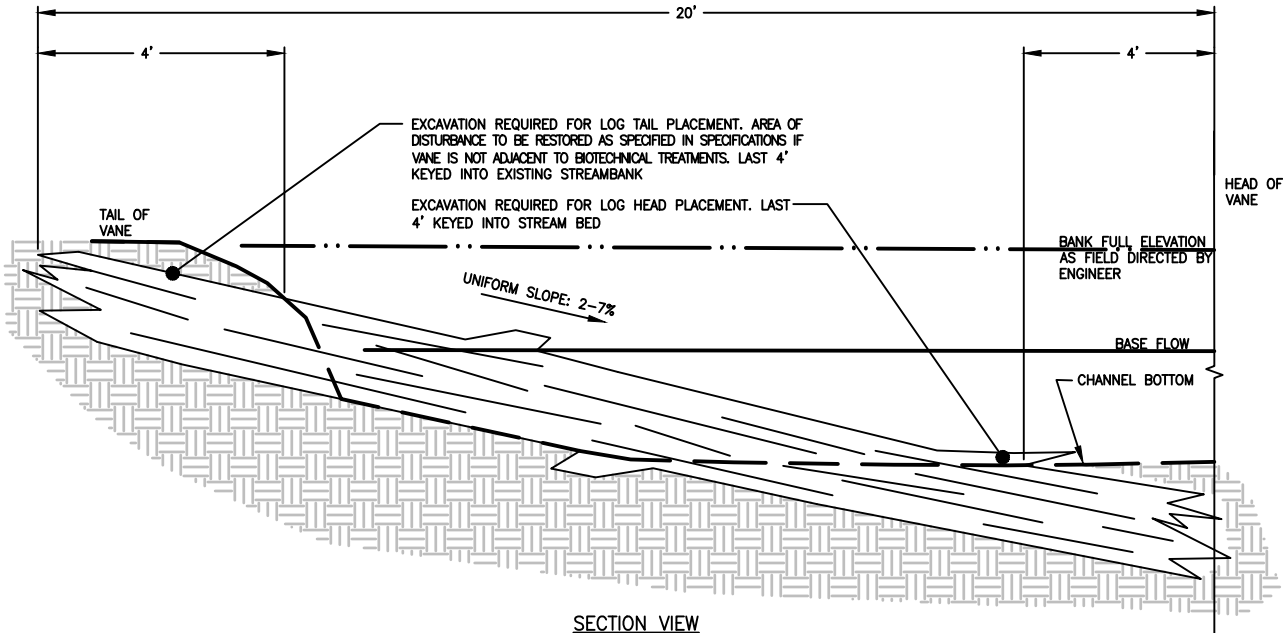
PLYMOUTH CREEK  
CHANNEL RECONSTRUCTION

CITY OF PLYMOUTH

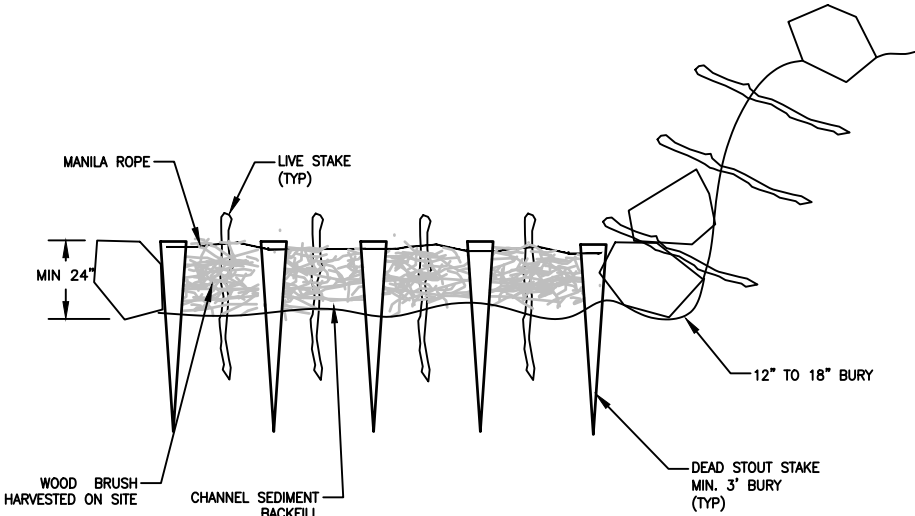
3400 PLYMOUTH BOULEVARD  
PLYMOUTH, MN 55447

SHEET TITLE			
DETAILS			
DWN BY	CHK'D	APP'D	DWG DATE
SJB	LNJ	EAM	MAR 2017
PROJECT NO.	SHEET NO.	SCALE	AS SHOWN
1756-10	D-102		
			REV NO.
			3

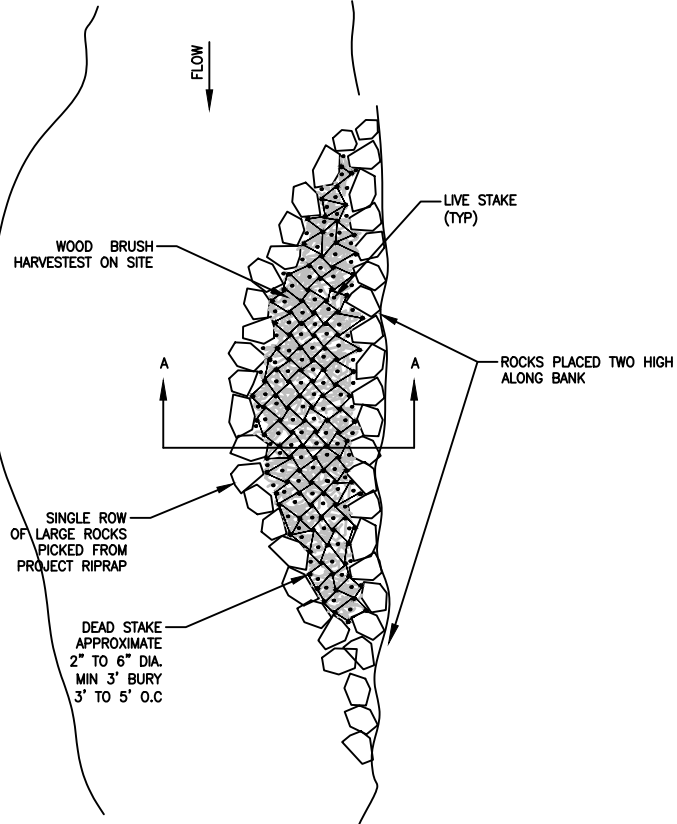




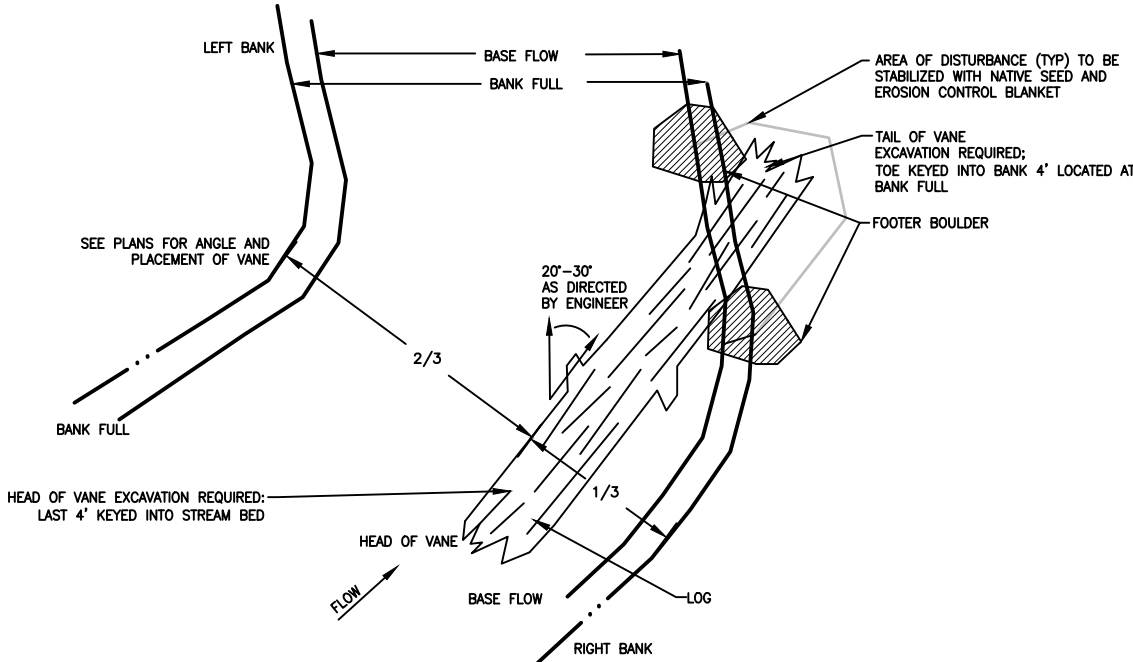
SECTION VIEW



SECTION VIEW A-A



PLAN VIEW

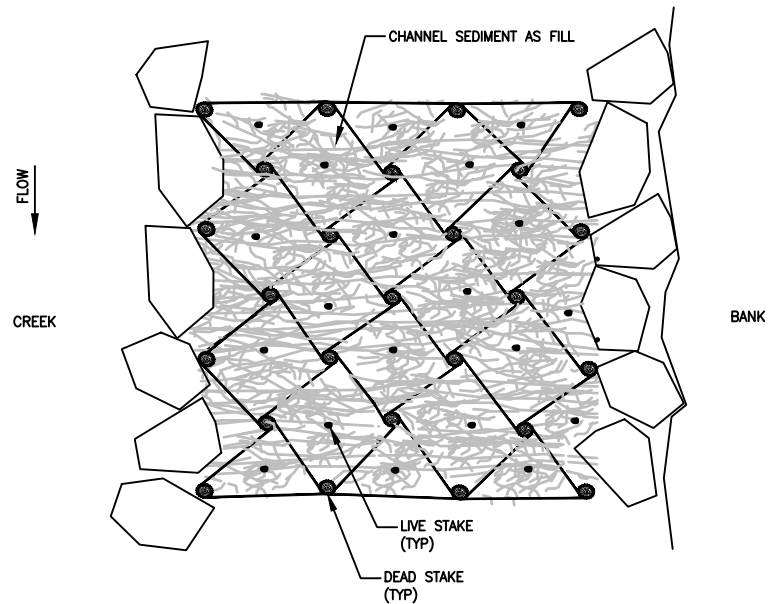


PLAN VIEW

LOG VANE DETAIL (TYPICAL)

NOT TO SCALE

1  
D-103



PLAN VIEW

- NOTES:
1. MANILA ROPE-- MINIMUM 3/8" NATURAL FIBER TWISTED ROPE WITH 500 LB BREAK STRENGTH.
  2. DEAD STAKES MAY BE HARVESTED ON SITE 3' TO 5' O.C. MIN 3' BURY, APPROXIMATE 2"-6" DIAMETER.
  3. OVERLAY BRANCHES
  4. LIVE STAKES 3' TO 5' O.C., MIN 2' BURY MIN 12" ABOVE MATTRESS.

BRUSH MATTRESS

NOT TO SCALE

2  
D-103

REV	REVISION DESCRIPTION	DWN	APP	REV DATE
3	FOR BID	SJB	EAM	08/22/17
2	FOR BID	SJB	EAM	08/01/17
1	90% DESIGN	SJB	EAM	06/30/17
0	60% DESIGN	SJB	EAM	04/20/17

SEAL

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ED MATTHIESEN

DATE 08/01/17 REG. NO. 16800

PRIME CONSULTANT

**WENCK**  
ASSOCIATES

Responsive partner. Exceptional outcomes.

PROJECT TITLE

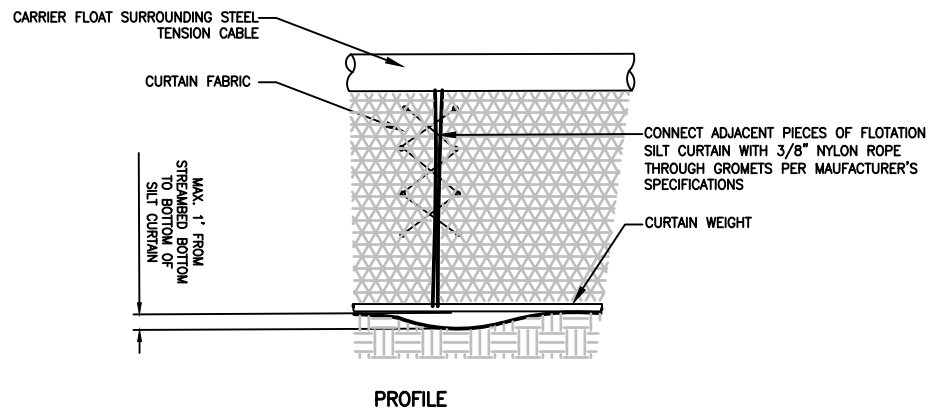
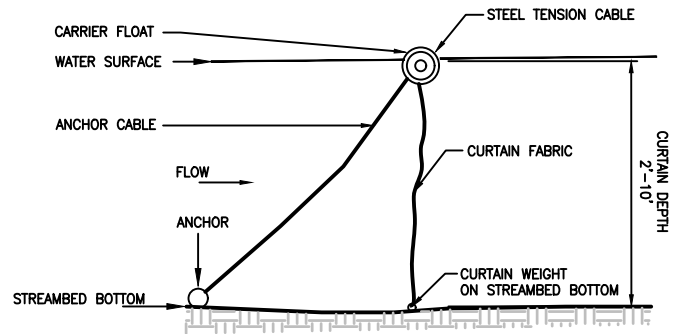
**PLYMOUTH CREEK  
CHANNEL RECONSTRUCTION**

CITY OF PLYMOUTH

3400 PLYMOUTH BOULEVARD  
PLYMOUTH, MN 55447

DETAILS			
DWN BY SJB	CHK'D LNJ	APP'D EAM	DWG DATE MAR 2017
PROJECT NO. 1756-10	SHEET NO. D-103	SCALE AS SHOWN	REV NO. 3



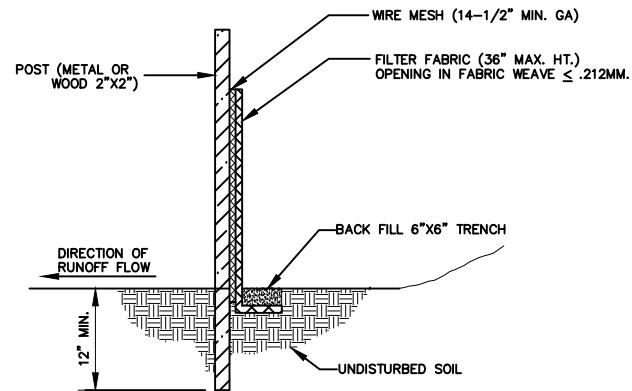


**FLOTATION SILT CURTAIN**  
NOT TO SCALE

1  
D-104

**NOTES:**

1. DIG A 6"x6" TRENCH ALONG THE INTENDED FENCE LINE.
2. DRIVE ALL POSTS INTO THE GROUND AT THE DOWNHILL SIDE OF THE TRENCH.
3. WIRE FENCING PER HENNEPIN COUNTY CONSERVATION DISTRICT EROSION AND SEDIMENT CONTROL MANUAL. WIRE MESH MUST BE A MINIMUM OF 2" INTO THE GROUND AND NO MORE THAN 36" ABOVE THE ORIGINAL GROUND SURFACE.
4. LAY OUT SILT FENCE ON THE UPHILL SIDE ALONG THE FENCE LINE, AND BACK FILL.
5. WOOD POSTS MAY BE SPACED UP TO 4 FEET APART IF WIRE MESH IS NOT USED TO SUPPORT THE FABRIC. IF WIRE MESH IS USED TO SUPPORT THE FABRIC STEEL POSTS MAY BE SPACED UP TO 8 FEET APART.
6. REMOVE SILT FENCE AFTER TURF IS ESTABLISHED.

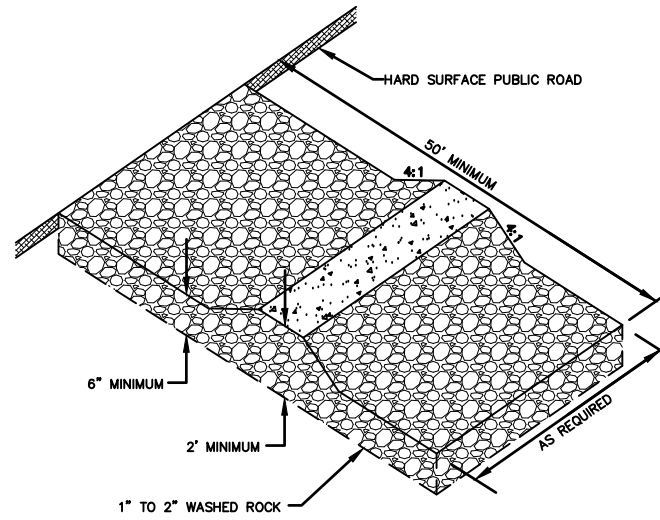


**STANDARD DETAILS  
SILT FENCE DETAIL  
CITY OF PLYMOUTH**

PUBLISHED  
3-16  
CITY PL. NO.  
ST-18  
REVISED 3-16

**SILT FENCE**  
NOT TO SCALE

2  
D-104



**NOTES:**

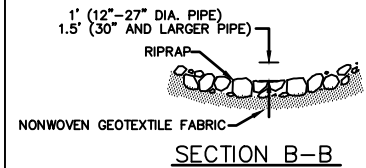
- ROCK SIZE SHOULD BE 1" TO 2" IN SIZE SUCH AS MN/DOT CA-1 OR CA-2 COURSE AGGREGATE. (WASHED)
- A GEOTEXTILE FABRIC MAY BE USED UNDER THE ROCK TO PREVENT MIGRATION OF THE UNDERLYING SOIL INTO THE STONE.

**STANDARD DETAILS  
ROCK ENTRANCE TO CONSTRUCTION SITE  
CITY OF PLYMOUTH**

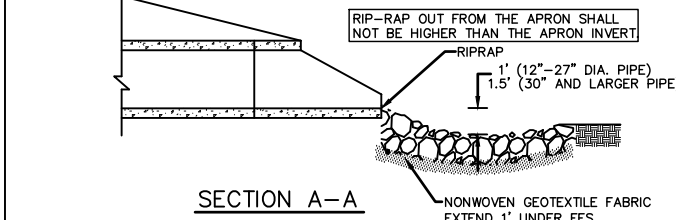
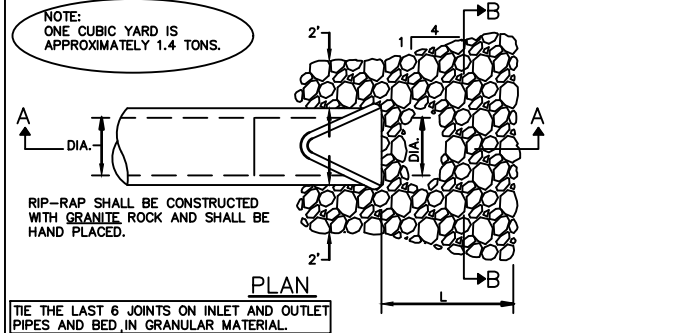
PUBLISHED  
3-16  
CITY PL. NO.  
ST-19  
REVISED 3-16

**ROCK ENTRANCE TO CONSTRUCTION SITE**  
NOT TO SCALE

3  
D-104



MINIMUM RIPRAP REQUIRED			
DIA. OF PIPE (IN.)	L (FT.)	QUANTITY (C.Y.)	CLASS
12	8	5	III
15	8	5	III
18	10	6	III
24	12	8	III
30	14	12	III
36	16	14	III
42	18	22	IV
48	20	26	IV
>48	22-28	30-40	IV

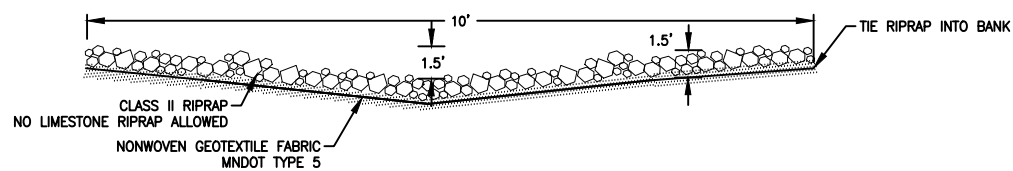


**STANDARD DETAILS  
RIPRAP DETAIL FOR FLARED END SECTIONS  
CITY OF PLYMOUTH**

PUBLISHED  
3-14  
CITY PL. NO.  
ST-4  
REVISED 3-12

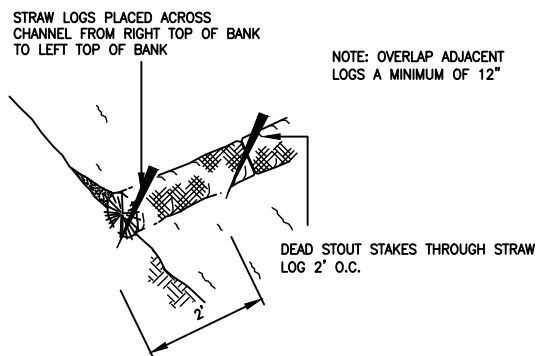
**RIPRAP AT FLARED END SECTIONS DETAIL**  
NOT TO SCALE

4  
D-104



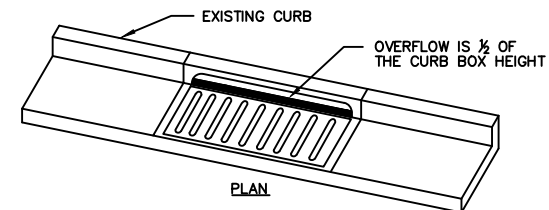
**CLASS II RIPRAP SWALE**  
NOT TO SCALE

5  
D-104



**BIOROLL DETAIL**  
NOT TO SCALE

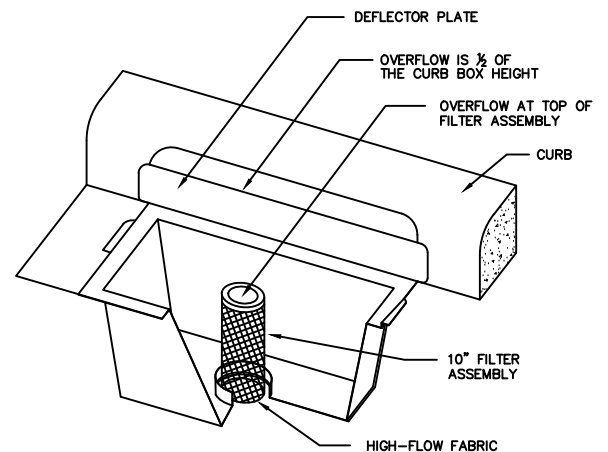
6  
D-104



WIMCO ROAD DRAIN CG-3067 HIGH FLOW INLET PROTECTION CURB AND GUTTER MODEL OR CITY APPROVED EQUAL.

**INLET PROTECTION DETAIL**  
NOT TO SCALE

7  
D-104



REV	REVISION DESCRIPTION	DWN	APP	REV DATE
3	FOR BID	SJB	EAM	08/22/17
2	FOR BID	SJB	EAM	08/01/17
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0	60% DESIGN	SJB	EAM	04/20/17

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ED MATTHIENSEN  
DATE 08/01/17 REG. NO. 16800

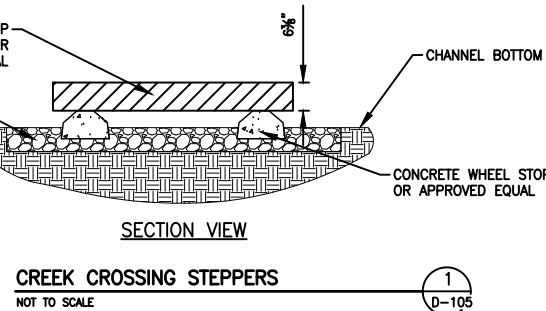
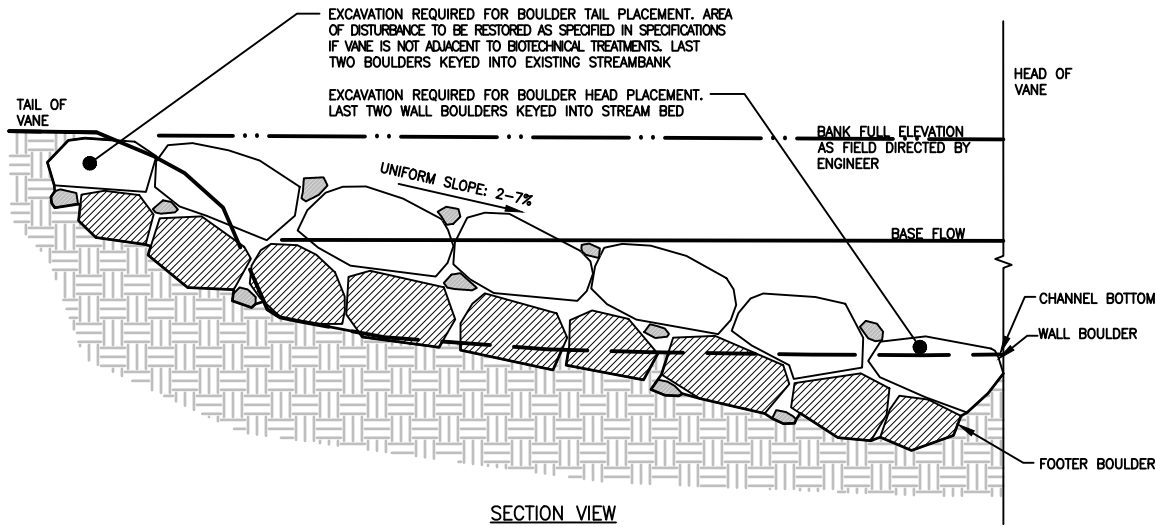
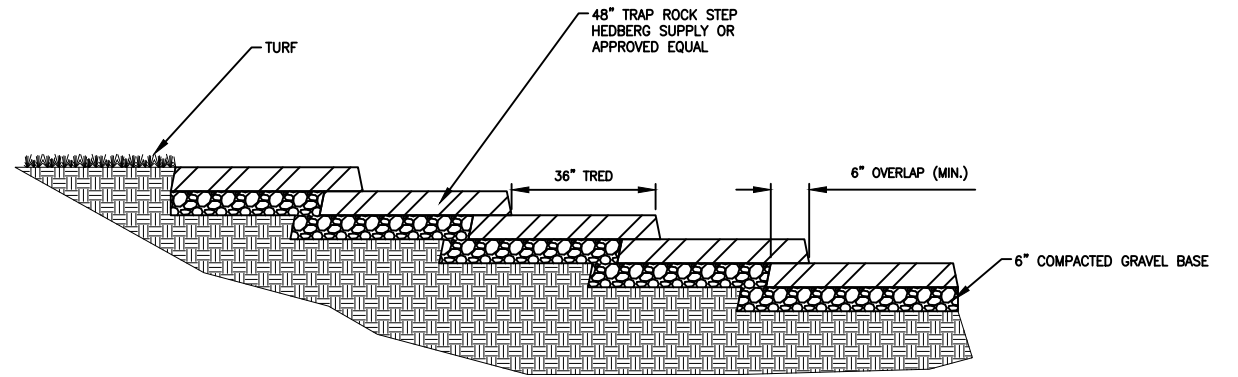
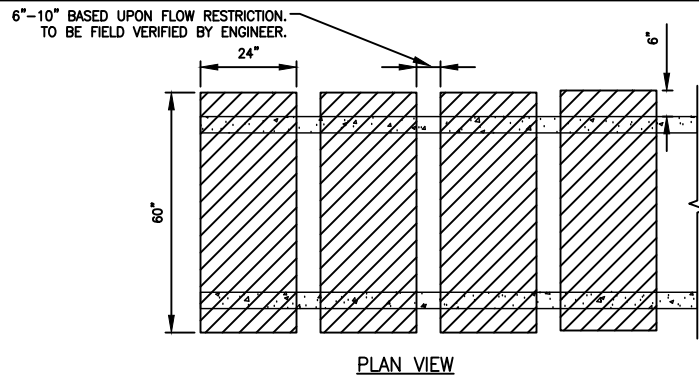
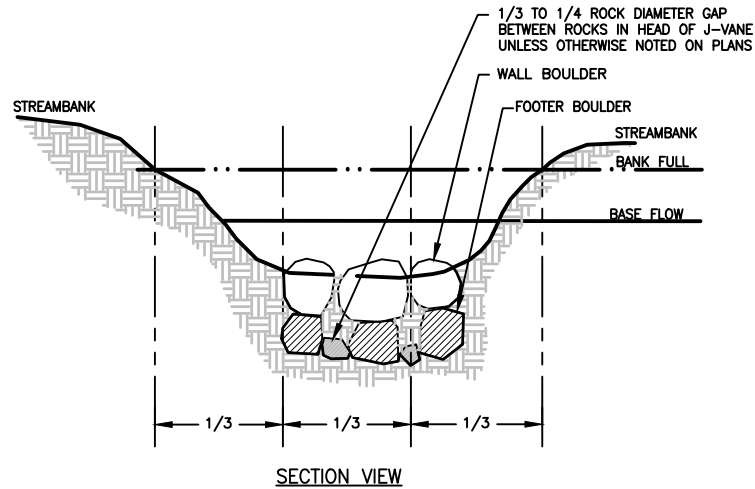
PRIME CONSULTANT  
**WENCK ASSOCIATES**  
Responsive partner. Exceptional outcomes.

PROJECT TITLE  
**PLYMOUTH CREEK CHANNEL RECONSTRUCTION**  
  
CITY OF PLYMOUTH  
3400 PLYMOUTH BOULEVARD  
PLYMOUTH, MN 55447

SHEET TITLE			
DETAILS			
DWN BY	CHK'D	APP'D	DWG DATE
SJB	LNJ	EAM	MAR 2017
PROJECT NO.		SCALE	
1756-10		AS SHOWN	
SHEET NO.		REV NO.	
D-104		3	

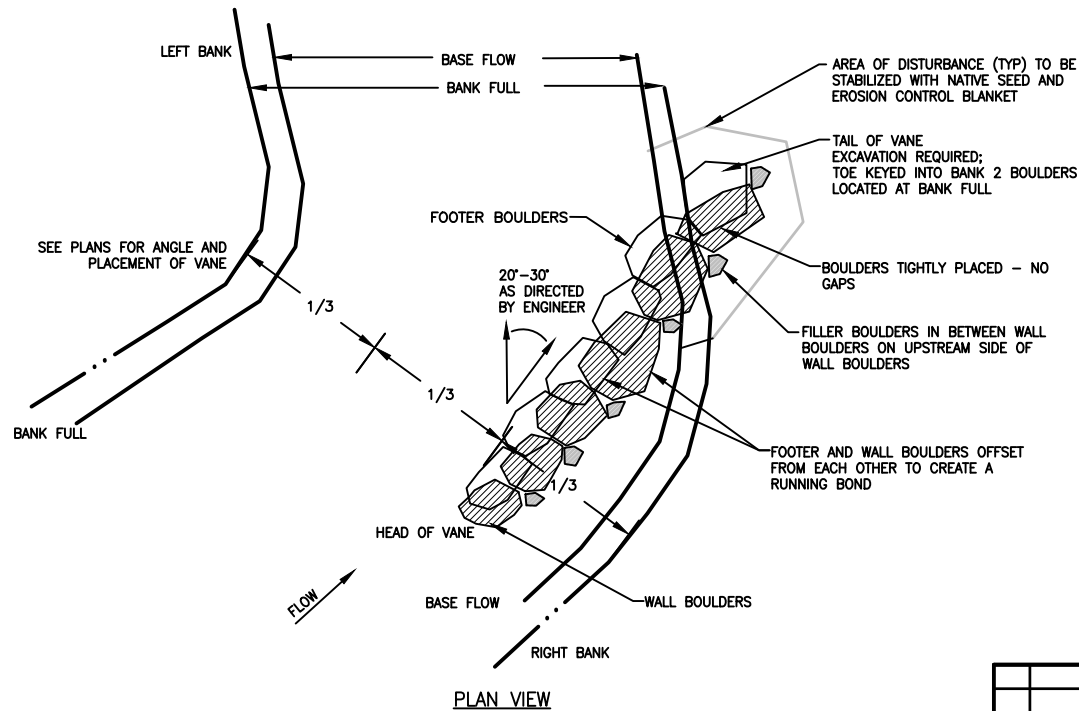
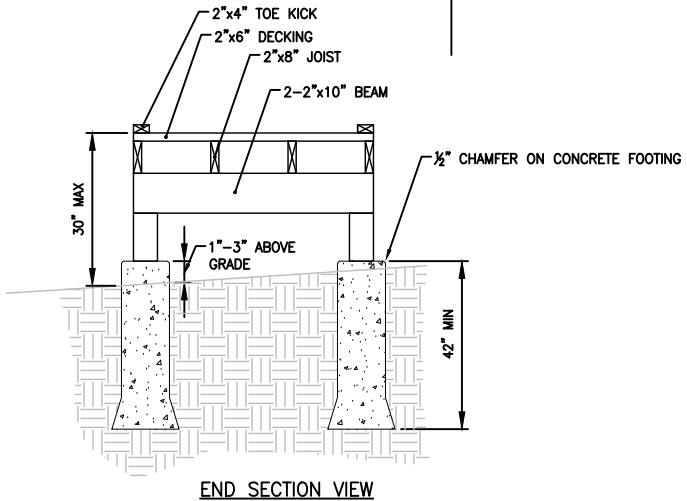
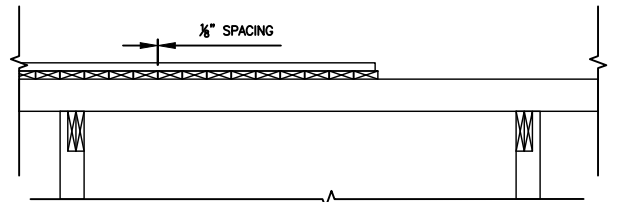
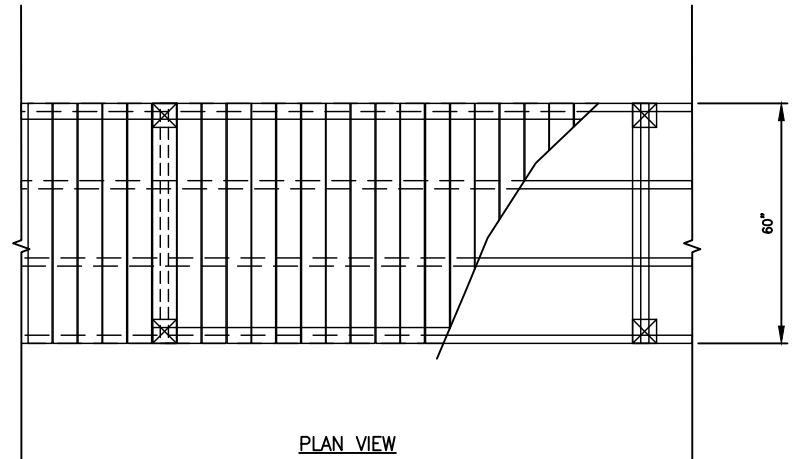


Plot Date & Time: 15 September 2018 13 PM  
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BANK ACCESS STEPS  
NOT TO SCALE

NOTES:  
10' JOIST SPAN, 10' POST SPACING  
#2 SOUTHERN PINE, PRESSURE TREATED  
JOISTS = 2"x8" 19.33" O.C.  
BEAMS = 2-2"x10"  
CORNER FOOTING = 12" DIA. MIN  
INTERMEDIATE FOOTING = 17" DIA MIN  
DECKING = 2"x6"



NOTE:  
1. CLASS V RIPRAP ACCEPTABLE ROCK ALTERNATIVE  
2. BOULDER VANES TO BE FIELD LOCATED BY ENGINEER  
**BOULDER VANE DETAIL (TYPICAL)**  
NOT TO SCALE

REV	REVISION DESCRIPTION	DWN	APP	REV DATE
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DATE 08/01/17 REG. NO. 16800

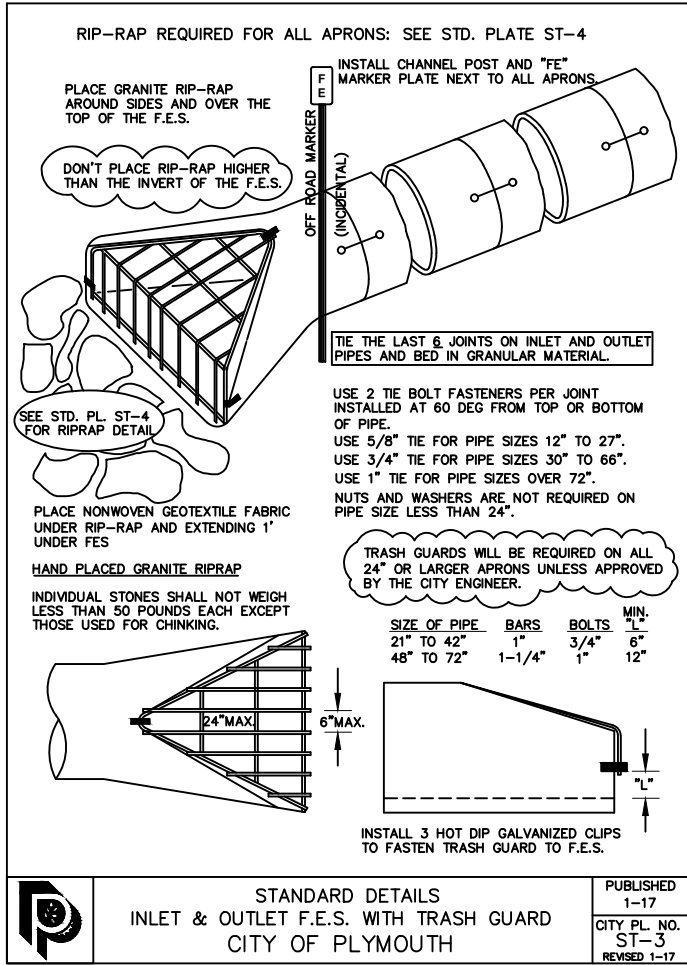
PRIME CONSULTANT  
**WENCK ASSOCIATES**  
Responsive partner. Exceptional outcomes.

PROJECT TITLE  
**PLYMOUTH CREEK CHANNEL RECONSTRUCTION**  
CITY OF PLYMOUTH  
3400 PLYMOUTH BOULEVARD  
PLYMOUTH, MN 55447

DETAILS				
DWN BY	CHK'D	APP'D	DWG DATE	MAR 2017
SJB	LNJ	EAM	SCALE	AS SHOWN
PROJECT NO.	SHEET NO.	1756-10		D-105
				3



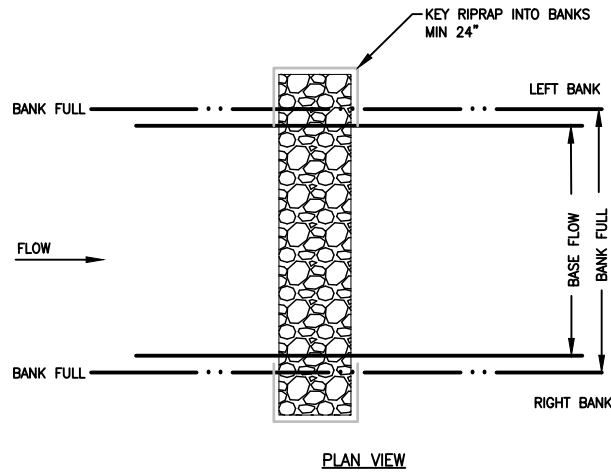
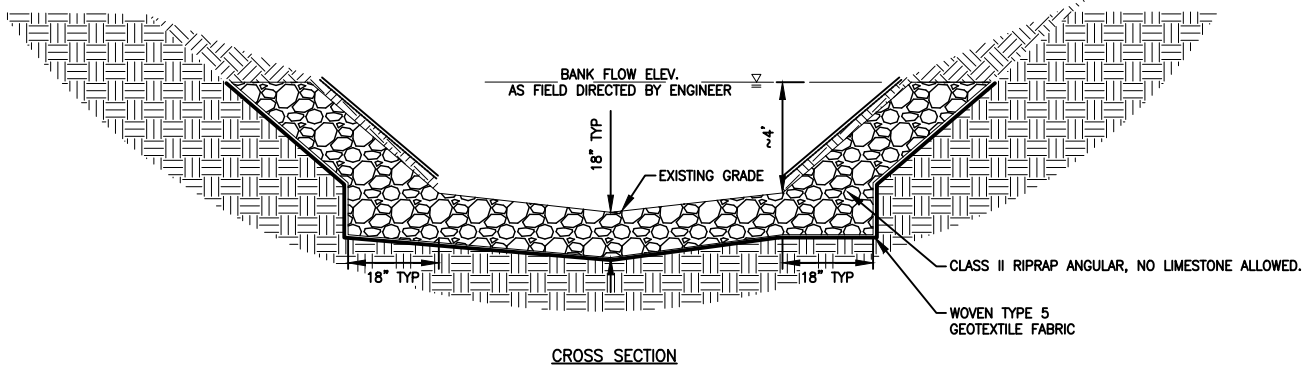
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FLARED END SECTIONS DETAIL

NOT TO SCALE

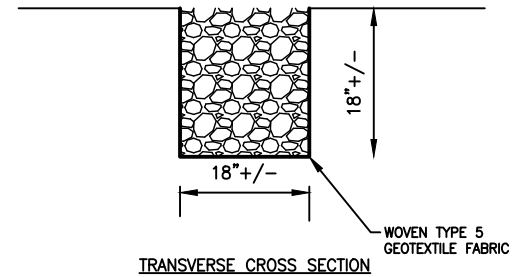
1  
D-106



ROCK GRADE CONTROL STRUCTURE

NOT TO SCALE

2  
D-106



- NOTES:
1. EXCAVATE TRENCH AND PLACE CLASS II RIPRAP PER MNDOT SPEC 3601.2A INTO TRENCH APPROX. 18" DEEP
  2. EXTEND CLASS II ROCK TRENCH BOTH WAYS FROM CENTER LINE TO CREATE A 18" DEPRESSION
  3. CONTRACTOR TO MAINTAIN EXISTING CHANNEL GRADE BY PLACING CLASS II RIPRAP FLUSH WITH SURROUNDING CREEK BED
  4. CLASS II RIPRAP SHALL NOT INCREASE THE FLOOD ELEVATION OF THE CREEK

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1	90% DESIGN	SJB	EAM	06/30/17
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DATE 08/01/17 REG. NO. 16800

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CITY OF PLYMOUTH	3400 PLYMOUTH BOULEVARD PLYMOUTH, MN 55447

SHEET TITLE				
DETAILS				
DWN BY	CHK'D	APP'D	DWG DATE	MAR 2017
SJB	LNJ	EAM	SCALE	AS SHOWN
PROJECT NO.		SHEET NO.		REV NO.
1756-10		D-106		3



### Tree Removals



# Tree Survey Removals List

ID #	Common Name	Scientific Name	DBH (inches)	Status
1	Box elder	Acer negundo	34	
2	Box elder	Acer negundo	10	
3	Box elder	Acer negundo	9	
4	American elm	Ulmus americana	10	
5	Green ash	Fraxinus pennsylvanica	13	
6	Green ash	Fraxinus pennsylvanica	11	
7	Green ash	Fraxinus pennsylvanica	13	Remove
8	Sugar maple	Acer saccharum	12	
9	Sugar maple	Acer saccharum	9	
10	Green ash	Fraxinus pennsylvanica	11	
11	Green ash	Fraxinus pennsylvanica	10	
12	Basswood	Tilia americana	10	
13	Cottonwood	Populus deltoides	17	
14	Cottonwood	Populus deltoides	15	
15	Green ash	Fraxinus pennsylvanica	11	
16	Green ash	Fraxinus pennsylvanica	10	
17	Green ash	Fraxinus pennsylvanica	11	
18	Cottonwood	Populus deltoides	18	
19	Cottonwood	Populus deltoides	12	
20	Cottonwood	Populus deltoides	17	
21	Green ash	Fraxinus pennsylvanica	9	
22	Green ash	Fraxinus pennsylvanica	11	
23	Green ash	Fraxinus pennsylvanica	10	
24	Cottonwood	Populus deltoides	22	
25	Cottonwood	Populus deltoides	10	
26	Cottonwood	Populus deltoides	14	
27	Cottonwood	Populus deltoides	11	
28	Cottonwood	Populus deltoides	14	
29	Cottonwood	Populus deltoides	14	
30	Cottonwood	Populus deltoides	16	
31	Cottonwood	Populus deltoides	9	
32	Cottonwood	Populus deltoides	13	
33	Cottonwood	Populus deltoides	9	
34	Cottonwood	Populus deltoides	16	
35	Cottonwood	Populus deltoides	9	
36	Basswood	Tilia americana	9	
37	Cottonwood	Populus deltoides	8	
38	Basswood	Tilia americana	8	
39	Basswood	Tilia americana	13	
40	Basswood	Tilia americana	12	
41	Green ash	Fraxinus pennsylvanica	9	
42	Cottonwood	Populus deltoides	9	
43	Cottonwood	Populus deltoides	9	
44	Cottonwood	Populus deltoides	12	
45	Cottonwood	Populus deltoides	15	
46	Cottonwood	Populus deltoides	14	



# Tree Survey Removals List

47	Cottonwood	Populus deltoides	14
48	Cottonwood	Populus deltoides	14
49	Basswood	Tilia americana	8
50	Basswood	Tilia americana	11
51	Green ash	Fraxinus pennsylvanica	10
52	Cottonwood	Populus deltoides	14
53	Green ash	Fraxinus pennsylvanica	8
54	Basswood	Tilia americana	13
55	Cottonwood	Populus deltoides	14
56	Cottonwood	Populus deltoides	14
57	Cottonwood	Populus deltoides	24
58	Cottonwood	Populus deltoides	11
59	Box elder	Acer negundo	10
60	American elm	Ulmus americana	9
61	Cottonwood	Populus deltoides	13
63	Cottonwood	Populus deltoides	9
64	Cottonwood	Populus deltoides	16
65	Sugar maple	Acer saccharum	10
66	Black cherry	Prunus serotina	8
67	Basswood	Tilia americana	11 Remove
68	Green ash	Fraxinus pennsylvanica	8 Remove
69	American elm	Ulmus americana	8 Remove
70	Cottonwood	Populus deltoides	13
71	Basswood	Tilia americana	8
72	Green ash	Fraxinus pennsylvanica	8
73	Cottonwood	Populus deltoides	16
74	Cottonwood	Populus deltoides	10
75	Green ash	Fraxinus pennsylvanica	8
76	Cottonwood	Populus deltoides	10
77	Cottonwood	Populus deltoides	11
78	Cottonwood	Populus deltoides	10
79	Basswood	Tilia americana	9
80	Cottonwood	Populus deltoides	10
81	Cottonwood	Populus deltoides	12
82	Cottonwood	Populus deltoides	8
83	Cottonwood	Populus deltoides	9
84	Green ash	Fraxinus pennsylvanica	10
85	Cottonwood	Populus deltoides	18 Remove
86	Cottonwood	Populus deltoides	10 Remove
87	Cottonwood	Populus deltoides	14 Remove
88	Basswood	Tilia americana	8 Remove
89	Sugar maple	Acer saccharum	8
90	Cottonwood	Populus deltoides	12
91	Cottonwood	Populus deltoides	8
92	Cottonwood	Populus deltoides	12
93	Cottonwood	Populus deltoides	10
93	Cottonwood	Populus deltoides	11



# Tree Survey Removals List

95	Cottonwood	Populus deltoides	13
96	Cottonwood	Populus deltoides	8
97	Cottonwood	Populus deltoides	9
98	Cottonwood	Populus deltoides	10
99	Basswood	Tilia americana	13
100	Basswood	Tilia americana	13
101	Cottonwood	Populus deltoides	8
102	Cottonwood	Populus deltoides	12
103	Cottonwood	Populus deltoides	14
104	Cottonwood	Populus deltoides	11
105	Cottonwood	Populus deltoides	10
106	Cottonwood	Populus deltoides	8
107	Sugar maple	Acer saccharum	12
108	Sugar maple	Acer saccharum	14
109	Cottonwood	Populus deltoides	12
110	Bitternut hickory	Carya cordiformis	8
111	Box elder	Acer negundo	11
112	Cottonwood	Populus deltoides	11
113	Cottonwood	Populus deltoides	8
114	Cottonwood	Populus deltoides	13
116	Cottonwood	Populus deltoides	9
117	Cottonwood	Populus deltoides	13
118	Cottonwood	Populus deltoides	13
119	Cottonwood	Populus deltoides	11
120	Cottonwood	Populus deltoides	12
121	Cottonwood	Populus deltoides	13
122	Cottonwood	Populus deltoides	8
123	Cottonwood	Populus deltoides	8
124	Red oak	Quercus rubra	13
125	Sugar maple	Acer saccharum	12
126	American elm	Ulmus americana	11
127	Bitternut hickory	Carya cordiformis	10
128	Black cherry	Prunus serotina	8
129	Box elder	Acer negundo	8
130	White oak	Quercus alba	32
131	Box elder	Acer negundo	12 Remove
132	Box elder	Acer negundo	8 Remove
133	Black cherry	Prunus serotina	8
134	Black cherry	Prunus serotina	10
135	Red oak	Quercus rubra	14
136	Red oak	Quercus rubra	8
137	Black cherry	Prunus serotina	13
138	Sugar maple	Acer saccharum	27
139	White oak	Quercus alba	27
140	Black cherry	Prunus serotina	14 Remove
141	Cottonwood	Populus deltoides	12
142	Cottonwood	Populus deltoides	17 Remove



# Tree Survey Removals List

143	Cottonwood	Populus deltoides	11 Remove
144	Cottonwood	Populus deltoides	11 Remove
145	Cottonwood	Populus deltoides	9
146	Cottonwood	Populus deltoides	18
147	Cottonwood	Populus deltoides	11
148	Cottonwood	Populus deltoides	10
149	Cottonwood	Populus deltoides	11
150	Cottonwood	Populus deltoides	10
151	Cottonwood	Populus deltoides	9
152	Sugar maple	Acer saccharum	10
153	Cottonwood	Populus deltoides	10
154	Cottonwood	Populus deltoides	8
155	Cottonwood	Populus deltoides	8
156	Cottonwood	Populus deltoides	11 Remove
157	Cottonwood	Populus deltoides	14 Remove
158	Cottonwood	Populus deltoides	10 Remove
159	Cottonwood	Populus deltoides	8
160	Red oak	Quercus rubra	11
161	Red oak	Quercus rubra	25
162	Box elder	Acer negundo	8
163	Cottonwood	Populus deltoides	11
164	Cottonwood	Populus deltoides	9
165	Cottonwood	Populus deltoides	20
166	Cottonwood	Populus deltoides	12 Remove
167	Cottonwood	Populus deltoides	14 Remove
168	Cottonwood	Populus deltoides	9
169	Cottonwood	Populus deltoides	14 Remove
170	Cottonwood	Populus deltoides	10 remove
171	Cottonwood	Populus deltoides	14 remove
172	Cottonwood	Populus deltoides	10 remove
173	Cottonwood	Populus deltoides	11 remove
174	Cottonwood	Populus deltoides	8
175	American elm	Ulmus americana	10
177	Cottonwood	Populus deltoides	20
178	Cottonwood	Populus deltoides	18
179	Cottonwood	Populus deltoides	12 Remove
180	Cottonwood	Populus deltoides	14 Remove
181	Cottonwood	Populus deltoides	14 Remove
183	Silver maple	Acer saccharinum	8
184	Cottonwood	Populus deltoides	11
185	Cottonwood	Populus deltoides	31
186	Cottonwood	Populus deltoides	11
187	Cottonwood	Populus deltoides	13
188	Cottonwood	Populus deltoides	9
189	Cottonwood	Populus deltoides	13 remove
190	Cottonwood	Populus deltoides	11 remove
191	Cottonwood	Populus deltoides	12 remove



# Tree Survey Removals List

192	Black willow	Salix nigra	8
193	Cottonwood	Populus deltoides	13 remove
194	Cottonwood	Populus deltoides	15 remove
195	Cottonwood	Populus deltoides	14 remove
196	Cottonwood	Populus deltoides	14 remove
197	Box elder	Acer negundo	8
198	Sugar maple	Acer saccharum	10
199	Black willow	Salix nigra	10 remove
200	Basswood	Tilia americana	8
201	Basswood	Tilia americana	8
202	Black cherry	Prunus serotina	9
203	Cottonwood	Populus deltoides	18
205	Red oak	Quercus rubra	8
206	Green ash	Fraxinus pennsylvanica	9
207	Red oak	Quercus rubra	9
208	Black cherry	Prunus serotina	8
209	Sugar maple	Acer saccharum	8
210	Green ash	Fraxinus pennsylvanica	9
211	Green ash	Fraxinus pennsylvanica	9
214	Black cherry	Prunus serotina	8
215	Black cherry	Prunus serotina	9
216	Black cherry	Prunus serotina	10 remove
217	Green ash	Fraxinus pennsylvanica	12 remove
218	Black willow	Salix nigra	18 remove
219	American elm	Ulmus americana	9 Remove
220	Green ash	Fraxinus pennsylvanica	8
221	Green ash	Fraxinus pennsylvanica	8 Remove
222	Black cherry	Prunus serotina	9 Remove
223	Apple	Malus spp	8
224	Box elder	Acer negundo	9
225	Box elder	Acer negundo	9 Remove
226	Box elder	Acer negundo	9
227	Cottonwood	Populus deltoides	16 remove
228	Box elder	Acer negundo	8
229	Box elder	Acer negundo	8
230	Black cherry	Prunus serotina	12
231	Green ash	Fraxinus pennsylvanica	8
232	Green ash	Fraxinus pennsylvanica	12 remove
233	Black willow	Salix nigra	12
234	Black cherry	Prunus serotina	13 Remove
235	Box elder	Acer negundo	88 Remove
236	Cottonwood	Populus deltoides	9
237	Sugar maple	Acer saccharum	9
238	Cottonwood	Populus deltoides	11 Remove
239	Sugar maple	Acer saccharum	8
240	Red oak	Quercus rubra	8
241	Cottonwood	Populus deltoides	12



# Tree Survey Removals List

242	Cottonwood	Populus deltoides	11 Remove
243	Cottonwood	Populus deltoides	12 Remove
244	Cottonwood	Populus deltoides	14
244	Cottonwood	Populus deltoides	14
246	Cottonwood	Populus deltoides	8
247	Cottonwood	Populus deltoides	12
248	Cottonwood	Populus deltoides	14
249	Cottonwood	Populus deltoides	11
250	Cottonwood	Populus deltoides	11
251	Cottonwood	Populus deltoides	13
252	Cottonwood	Populus deltoides	11
253	Cottonwood	Populus deltoides	10
254	Cottonwood	Populus deltoides	14
255	Cottonwood	Populus deltoides	10
256	Cottonwood	Populus deltoides	13
257	Cottonwood	Populus deltoides	8
258	Cottonwood	Populus deltoides	9
259	Cottonwood	Populus deltoides	10
260	Cottonwood	Populus deltoides	12
261	Cottonwood	Populus deltoides	9
262	Cottonwood	Populus deltoides	13
263	Cottonwood	Populus deltoides	8
264	Cottonwood	Populus deltoides	9
265	Cottonwood	Populus deltoides	9
266	Cottonwood	Populus deltoides	14
267	Cottonwood	Populus deltoides	9 Remove
268	Cottonwood	Populus deltoides	8
269	American elm	Ulmus americana	9
270	Cottonwood	Populus deltoides	10
271	Cottonwood	Populus deltoides	8
272	Cottonwood	Populus deltoides	34
273	Cottonwood	Populus deltoides	31
274	Basswood	Tilia americana	9
275	Basswood	Tilia americana	8 Remove
276	White oak	Quercus alba	30
277	Sugar maple	Acer saccharum	22
278	White oak	Quercus alba	20
279	Basswood	Tilia americana	10 Remove
280	Basswood	Tilia americana	9 Remove
281	Bitternut hickory	Carya cordiformis	10 Remove
282	Box elder	Acer negundo	9 Remove
283	Box elder	Acer negundo	9
284	Green ash	Fraxinus pennsylvanica	12
285	Box elder	Acer negundo	11
286	Sugar maple	Acer saccharum	8
287	Sugar maple	Acer saccharum	13
288	Box elder	Acer negundo	9



# Tree Survey Removals List

289	Box elder	Acer negundo	9
290	Sugar maple	Acer saccharum	9
291	Box elder	Acer negundo	9
292	Box elder	Acer negundo	10
293	American elm	Ulmus americana	12 Remove
294	American elm	Ulmus americana	11 Remove
295	Box elder	Acer negundo	13
296	American elm	Ulmus americana	11
297	American elm	Ulmus americana	13
298	American elm	Ulmus americana	12
299	Bitternut hickory	Carya cordiformis	10
300	American elm	Ulmus americana	10
301	Box elder	Acer negundo	10 Remove
302	Basswood	Tilia americana	9 Remove
303	American elm	Ulmus americana	10 Remove
304	American elm	Ulmus americana	11 Remove
305	American elm	Ulmus americana	8
306	American elm	Ulmus americana	9
307	Basswood	Tilia americana	9
308	Basswood	Tilia americana	9
309	Bitternut hickory	Carya cordiformis	10
310	Sugar maple	Acer saccharum	10
311	Sugar maple	Acer saccharum	18
312	Basswood	Tilia americana	8
313	Sugar maple	Acer saccharum	33
314	American elm	Ulmus americana	12
315	Basswood	Tilia americana	14
316	Basswood	Tilia americana	10
317	Basswood	Tilia americana	13
318	Box elder	Acer negundo	9
319	Black cherry	Prunus serotina	9
320	Bitternut hickory	Carya cordiformis	12
321	Bitternut hickory	Carya cordiformis	8 Remove
322	Box elder	Acer negundo	10
323	Sugar maple	Acer saccharum	8
324	Sugar maple	Acer saccharum	8
325	Bitternut hickory	Carya cordiformis	9
326	Box elder	Acer negundo	9
327	Box elder	Acer negundo	10
328	Green ash	Fraxinus pennsylvanica	12 Remove
329	Bitternut hickory	Carya cordiformis	9
330	Basswood	Tilia americana	13
331	Sugar maple	Acer saccharum	9
332	Green ash	Fraxinus pennsylvanica	12
333	Basswood	Tilia americana	9
334	Box elder	Acer negundo	13
335	Box elder	Acer negundo	9



# Tree Survey Removals List

336	Green ash	Fraxinus pennsylvanica	10 Remove
337	American elm	Ulmus americana	8 Remove
338	Green ash	Fraxinus pennsylvanica	13 Remove
339	Green ash	Fraxinus pennsylvanica	13 Remove
340	American elm	Ulmus americana	8
341	Green ash	Fraxinus pennsylvanica	8 Remove
342	Bitternut hickory	Carya cordiformis	13
343	Green ash	Fraxinus pennsylvanica	10
344	Basswood	Tilia americana	11
345	Basswood	Tilia americana	11
346	Green ash	Fraxinus pennsylvanica	12 Remove
347	Basswood	Tilia americana	12 remove
348	Green ash	Fraxinus pennsylvanica	10
349	Box elder	Acer negundo	14 Remove
350	Box elder	Acer negundo	13
352	American elm	Ulmus americana	8 Remove
353	Sugar maple	Acer saccharum	8
354	Basswood	Tilia americana	21
355	Green ash	Fraxinus pennsylvanica	8
356	Basswood	Tilia americana	13
357	Bitternut hickory	Carya cordiformis	12
358	Basswood	Tilia americana	10
359	Green ash	Fraxinus pennsylvanica	9 Remove
360	Basswood	Tilia americana	13
361	Green ash	Fraxinus pennsylvanica	15
362	Basswood	Tilia americana	15
363	Basswood	Tilia americana	9
364	Bitternut hickory	Carya cordiformis	10
365	Green ash	Fraxinus pennsylvanica	9
366	Green ash	Fraxinus pennsylvanica	9
367	Green ash	Fraxinus pennsylvanica	10
368	Basswood	Tilia americana	10
369	Cottonwood	Populus deltoides	10
372	Box elder	Acer negundo	8
373	Box elder	Acer negundo	8
374	Cottonwood	Populus deltoides	17
375	Cottonwood	Populus deltoides	15
376	Cottonwood	Populus deltoides	20
377	American elm	Ulmus americana	10
378	Sugar maple	Acer saccharum	9
379	Box elder	Acer negundo	15
380	Black willow	Salix nigra	28
381	American elm	Ulmus americana	9
382	American elm	Ulmus americana	9
383	Box elder	Acer negundo	10
385	Cottonwood	Populus deltoides	35 Remove
386	Black willow	Salix nigra	14 Remove



# Tree Survey Removals List

387	Black willow	Salix nigra	12 Remove
388	Green ash	Fraxinus pennsylvanica	11 Remove
389	Green ash	Fraxinus pennsylvanica	9 Remove
390	Green ash	Fraxinus pennsylvanica	9 Remove
391	Green ash	Fraxinus pennsylvanica	8 Remove
392	Green ash	Fraxinus pennsylvanica	8 Remove
393	Box elder	Acer negundo	8 Remove
394	Black willow	Salix nigra	13
395	American elm	Ulmus americana	12
396	American elm	Ulmus americana	9
397	American elm	Ulmus americana	13
398	American elm	Ulmus americana	8
399	Green ash	Fraxinus pennsylvanica	8
400	Cottonwood	Populus deltoides	24 Remove
401	Box elder	Acer negundo	13 Remove
402	Box elder	Acer negundo	12 Remove
403	Box elder	Acer negundo	12 Remove
404	Box elder	Acer negundo	13 Remove
405	Box elder	Acer negundo	14
406	Box elder	Acer negundo	11
407	Box elder	Acer negundo	11
408	Box elder	Acer negundo	20
409	Sugar maple	Acer saccharum	12
410	Box elder	Acer negundo	10
411	Box elder	Acer negundo	9 Remove
412	Box elder	Acer negundo	10 Remove
413	Basswood	Tilia americana	13 Remove
414	Cottonwood	Populus deltoides	34
415	Box elder	Acer negundo	8
416	Red oak	Quercus rubra	11
417	Basswood	Tilia americana	12
418	Basswood	Tilia americana	16
419	Red oak	Quercus rubra	15
420	Basswood	Tilia americana	10
421	American elm	Ulmus americana	10
422	Box elder	Acer negundo	11
423	Box elder	Acer negundo	10
424	Box elder	Acer negundo	13
425	Box elder	Acer negundo	10
426	Box elder	Acer negundo	12
427	Box elder	Acer negundo	11
428	Box elder	Acer negundo	13
429	Basswood	Tilia americana	8
430	Box elder	Acer negundo	8
431	Quaking aspen	Populus tremuloides	10 Remove
432	American elm	Ulmus americana	8
433	American elm	Ulmus americana	9



# Tree Survey Removals List

434	American elm	Ulmus americana	13 Remove
435	Sugar maple	Acer saccharum	8
436	Box elder	Acer negundo	10 Remove
437	Box elder	Acer negundo	13 Remove
438	American elm	Ulmus americana	9
439	Box elder	Acer negundo	13 Remove
440	American elm	Ulmus americana	12 Remove
441	Box elder	Acer negundo	10 Remove
442	Green ash	Fraxinus pennsylvanica	11 Remove
443	American elm	Ulmus americana	13 Remove
444	American elm	Ulmus americana	11 Remove
445	Basswood	Tilia americana	14
446	Basswood	Tilia americana	8
447	Sugar maple	Acer saccharum	8
449	Green ash	Fraxinus pennsylvanica	12
450	Sugar maple	Acer saccharum	8
451	Quaking aspen	Populus tremuloides	9
453	American elm	Ulmus americana	8
454	American elm	Ulmus americana	12
455	Cottonwood	Populus deltoides	10
456	Cottonwood	Populus deltoides	11
457	Cottonwood	Populus deltoides	13
458	Cottonwood	Populus deltoides	14
459	American elm	Ulmus americana	8
460	Cottonwood	Populus deltoides	12
461	Cottonwood	Populus deltoides	14
462	Cottonwood	Populus deltoides	10
463	Sugar maple	Acer saccharum	15
464	Cottonwood	Populus deltoides	13
465	Cottonwood	Populus deltoides	14
466	Sugar maple	Acer saccharum	20
467	Cottonwood	Populus deltoides	10
468	Cottonwood	Populus deltoides	9
469	Cottonwood	Populus deltoides	10
470	American elm	Ulmus americana	8
471	Cottonwood	Populus deltoides	12
472	Cottonwood	Populus deltoides	13
473	Cottonwood	Populus deltoides	11
474	Cottonwood	Populus deltoides	14
475	Green ash	Fraxinus pennsylvanica	11
476	Cottonwood	Populus deltoides	9
477	Red oak	Quercus rubra	10
478	Basswood	Tilia americana	12
479	Box elder	Acer negundo	8
480	Sugar maple	Acer saccharum	9
481	Sugar maple	Acer saccharum	13
482			



# Tree Survey Removals List

482	Box elder	Acer negundo	11
483	Red oak	Quercus rubra	11
484	Box elder	Acer negundo	9
485	Basswood	Tilia americana	8
486	Box elder	Acer negundo	9
487	Black willow	Salix nigra	11 Remove
488	Sugar maple	Acer saccharum	15
489	Sugar maple	Acer saccharum	14
490	Sugar maple	Acer saccharum	13
491	American elm	Ulmus americana	11
492	Sugar maple	Acer saccharum	13 Remove
493	Sugar maple	Acer saccharum	11
494	Sugar maple	Acer saccharum	16
495	Sugar maple	Acer saccharum	13 Remove
496	Sugar maple	Acer saccharum	13
497	Sugar maple	Acer saccharum	13
498	Sugar maple	Acer saccharum	14
499	Sugar maple	Acer saccharum	14 Remove
500	Sugar maple	Acer saccharum	18
501	Sugar maple	Acer saccharum	13
502	Basswood	Tilia americana	8
503	Green ash	Fraxinus pennsylvanica	8
504	Sugar maple	Acer saccharum	20 Remove
505	Sugar maple	Acer saccharum	15 Remove
506	Green ash	Fraxinus pennsylvanica	11
507	Sugar maple	Acer saccharum	8
508	Sugar maple	Acer saccharum	8
509	Sugar maple	Acer saccharum	11
510	American elm	Ulmus americana	11
511	Basswood	Tilia americana	16
512	Black cherry	Prunus serotina	8
513	Green ash	Fraxinus pennsylvanica	9 Remove
514	Quaking aspen	Populus tremuloides	8
515	Quaking aspen	Populus tremuloides	8
516	Quaking aspen	Populus tremuloides	8
517	Quaking aspen	Populus tremuloides	8
518	Quaking aspen	Populus tremuloides	9
519	Quaking aspen	Populus tremuloides	9
520	White oak	Quercus alba	40
521	Basswood	Tilia americana	18 Remove
522	Basswood	Tilia americana	18 Remove
523	Black cherry	Prunus serotina	13
524	Sugar maple	Acer saccharum	8
525	Sugar maple	Acer saccharum	8
526	Sugar maple	Acer saccharum	9
527	Sugar maple	Acer saccharum	8
528	Sugar maple	Acer saccharum	9



# Tree Survey Removals List

529	Basswood	Tilia americana	15	
530	Green ash	Fraxinus pennsylvanica	13	
531	Green ash	Fraxinus pennsylvanica	8	
532	Black cherry	Prunus serotina	13	
533	Sugar maple	Acer saccharum	9	
534	Sugar maple	Acer saccharum	8	
535	Green ash	Fraxinus pennsylvanica	8	
536	Sugar maple	Acer saccharum	17	
537	Sugar maple	Acer saccharum	19	
538	Sugar maple	Acer saccharum	20	
539	Basswood	Tilia americana	8	
540	Sugar maple	Acer saccharum	10	
541	Basswood	Tilia americana	13	Remove
542	Black cherry	Prunus serotina	9	
543	Red oak	Quercus rubra	12	Remove
544	Red oak	Quercus rubra	9	Remove
545	Sugar maple	Acer saccharum	18	
546	Sugar maple	Acer saccharum	18	
547	Sugar maple	Acer saccharum	15	Remove
548	Sugar maple	Acer saccharum	20	Remove
549	Red oak	Quercus rubra	8	
550	Sugar maple	Acer saccharum	22	Remove
551	Sugar maple	Acer saccharum	12	Remove
552	Sugar maple	Acer saccharum	15	Remove
553	American elm	Ulmus americana	8	
554	Black cherry	Prunus serotina	9	
802	Unknown	Unknown	Unknown	Remove

**Total for Bioengineering ≥ 10" DBH 94**

**Trees removed too small for Reuse 26**

**Total Removed: 120**