

Project Manual

2025 Alley Improvements

Windom, Minnesota



June 2025

DGR Project No. 373179



Project Manual

2025 Alley Improvements
Windom, Minnesota

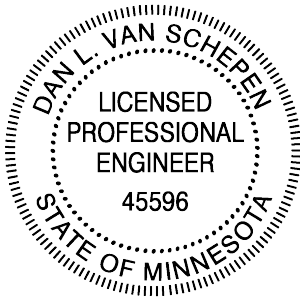
Mayor – Hilary Mathis

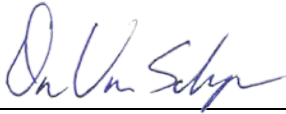
City Administrator – Steve Nasby

COUNCIL

Jayesun Sherman Dennis Esplan
Scott Benson Jenny Quade
James Nelson

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.



By 
Dan L. Van Schepen, P.E.

Registration No. 45596

Date 5/29/25

DGR Project No. 373179

DGR Engineering

1302 South Union Street
Rock Rapids, IA
(712) 472-2531
dgr@dgr.com

2025 Alley Improvements
Windom, Minnesota

May 2025

TABLE OF CONTENTS

	<u>Page No.</u>
ADVERTISEMENT FOR BIDS	
Advertisement for Bids	AB-1 – AB-2
BID DOCUMENTS	
Instructions to Bidders	IB-1 - IB-10
State of Minnesota - Responsible Contractor Certificate	1
Bid Bond	1 - 2
Contractor's Proposal	CP-1 - CP-9
CONTRACT DOCUMENTS	
Notice of Award	1
Agreement	A-1 - A-8
Performance Bond	1 - 2
Payment Bond	1 - 2
Notice to Proceed	1
MISCELLANEOUS FORMS	
Certificate for Payment	
Certificate of Contractor and Indemnity Agreement	
Waiver and Release of Lien	
Engineer's Statement of Final Completion and Owner's Acceptance of Contract Construction	
Field Order	
Work Change Directive	
Change Order	
Certificate of Substantial Completion	
CONTRACT CONDITIONS	
General Conditions	1 - 65
Supplementary Conditions	SC-1 - SC-6

SPECIAL PROVISIONS

Division G – General Requirements

G-1 – G-3

Division U – Utilities

U-1 – U-17

Division S – Streets (Pavement)

(033000) PCC Pavement

S-1 – S-10

(MnDOT 2360) Plant Mix Asphalt Pavement

S-11

Division E – Earthwork

E-1 – E-27

Appendix A – Storm Water Pollution Prevention Plan

STANDARD PLATES AND DETAIL DRAWINGS

PLAN DRAWINGS (Bound Separately)

ADVERTISEMENT FOR BIDS

ADVERTISEMENT FOR BIDS

Sealed proposals will be received by the City Council of Windom, Cottonwood County, Minnesota at the City Offices, 444 9th Street, P.O. Box 38, Windom, Minnesota 56101-0038 on Wednesday, the 25th of June, 2025 at 10:00 A.M. for the 2025 Alley Improvements, Windom, Minnesota, at which time the proposals shall be publicly opened and read aloud by the Engineer and City Administrator.

The approximate quantities of work on which proposals will be received are as follows:

Base Bid

230 L.F.	PCC Curb and Gutter
280 S.Y.	7" PCC Approach Pavement
1,165 Tons	Bituminous Paving
1,567 L.F.	Storm Sewer

Alternate 1

84 Tons	Bituminous Paving
522 L.F.	Storm Sewer

and other related items of construction.

All bids shall be made on proposal forms furnished by the Engineer and shall be accompanied by bid security in the form of a certified check or bid bond, made payable to the City of Windom, Minnesota, in the amount of ten percent (10%) of the bid, which security becomes the property of the City in the event the successful bidder fails to enter into contract and post satisfactory bond. Work shall commence on or after July 21st, 2025. Work shall be completed on or before **October 24, 2025**.

The City reserves the right to reject any or all proposals and to waive technicalities and irregularities. The City also reserves the right to increase, decrease or delete items of work to comply with budget limitations.

The City is an Equal Opportunity Employer.

The Contractor and all subcontractors shall submit to the Owner a signed statement verifying compliance with each of the criteria described in the State of Minnesota "Responsible Contractor" law as codified in Minnesota Statute section 16C.285. See the Instructions to Bidders for more details.

Complete digital project bidding documents are available at www.questcdn.com. You may download the digital plan documents for \$22.00 by inputting Quest project **#9718971** on the website's Project Search page. Please contact QuestCDN.com at 952-233-1632 or info@questcdn.com for assistance in free membership registration, downloading, and working with this digital project information. An optional paper set of the proposal forms and specifications for individual use may be obtained from the office of the Engineer, DGR Engineering, 1302 South Union, P.O. Box 511, Rock Rapids, Iowa 51246, telephone 712-472-2531, Fax 712-472-2710, e-mail: dgr@dgr.com, upon payment of \$50.00, none of which is refundable.

Published upon order of the City Council of Windom, Minnesota.

CITY OF WINDOM, MINNESOTA

By /s/ Hilary Mathis
Mayor

BID DOCUMENTS

INSTRUCTIONS TO BIDDERS

ARTICLE 1 – DEFINED TERMS

- 1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:
- A. *Issuing Office* – The office from which the Bidding Documents are to be issued and where the bidding procedures are to be administered.
 - B. *Successful Bidder*--The lowest responsible Bidder submitting a responsive Bid to whom OWNER (on the basis of OWNER's evaluations as hereinafter provided) makes an award.

ARTICLE 2 – COPIES OF BIDDING DOCUMENTS

- 2.01 Complete sets of the Bidding Documents in the number and for the deposit sum, if any, stated in the Advertisement for Bids or Notice of Public Hearing and Letting may be obtained from the Issuing Office.
- 2.02 Complete sets of Bidding Documents shall 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.
- 2.03 Owner and Engineer, in making copies of Bidding Documents available on the above terms, do so only for the purpose of obtaining Bids for the Work and do not authorize or confer a license or grant for any other use.

ARTICLE 3 – QUALIFICATIONS OF BIDDERS

- 3.01 To demonstrate Bidder's qualifications to perform the Work, prior to award, within five days of Owner's request, Bidder shall submit written evidence such as financial data, previous experience, present commitments, and such other data as may be deemed appropriate by OWNER for making a complete evaluation

ARTICLE 4 – EXAMINATION OF BIDDING DOCUMENTS, OTHER RELATED DATA, AND SITE

- 4.01 *Subsurface and Physical Conditions*

No subsurface reports were completed for this work.

- A. The Supplementary Conditions identify:

- 1. Those reports known to Owner of explorations and tests of subsurface conditions at or contiguous to the Site that Engineer has used in preparing the Bidding Documents.

2. Those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) that Engineer has used in preparing the Bidding Documents.
- B. Copies of reports and drawings referenced in Paragraph 4.01.A 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 Paragraph 4.02 of the General Conditions has been identified and established in Paragraph 4.02 of the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any “technical data” or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

4.02 *Underground Facilities*

- A. Information and data shown or indicated in the Bidding Documents with respect to existing 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, including Owner, or others. Owner and Engineer do not assume responsibility for accuracy of said information and data.

4.03 *Hazardous Environmental Condition*

- A. The Supplementary Conditions identify any reports and drawings known to Owner relating to a Hazardous Environmental Condition identified at the Site, if any, that Engineer has used in preparing the Bidding Documents.
- B. Copies of reports and drawings referenced in Paragraph 4.03.A 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 Paragraph 4.06 of the General Conditions has been identified and established in Paragraph 4.06 of the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any “technical data” or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

- 4.04 Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions, and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated subsurface or physical conditions appear in Paragraphs 4.02, 4.03, and 4.04 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work, appear in Paragraph 4.06 of the General Conditions.

- 4.05 On request, Owner will provide Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies as Bidder deems necessary for submission

of a Bid. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies. Bidder shall comply with all applicable Laws and Regulations relative to excavation and utility locates.

4.06 Reference is made to Article 7 of the Supplementary Conditions for the identification of the general nature of other work that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) that relates to the Work contemplated by these Bidding Documents. On request, Owner will provide to each Bidder for examination access to or copies of Contract Documents (other than portions thereof related to price) for such other work.

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

- A. examine and carefully study the Bidding Documents, and the other related data identified in the Bidding Documents, and any Addenda;
- B. visit the Site and become familiar with and satisfy Bidder as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;
- C. become familiar with and satisfy Bidder as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work;
- D. carefully study 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) that have been identified in Paragraph 4.02 of the Supplementary Conditions as containing reliable "technical data," and (2) reports and drawings of Hazardous Environmental Conditions, if any, at the Site that have been identified in the Paragraph 4.06 of the Supplementary Conditions as containing reliable "technical data";
- E. consider the information known to Bidder; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents; and (3) Bidder's safety precautions and programs;
- F. agree at the time of submitting its Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price(s) bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents;
- G. become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;

- H. promptly give Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder; and
 - I. determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work.
- 4.08 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4, that without exception the Bid is premised upon performing and furnishing the Work required by the Bidding Documents and applying any specific means, methods, techniques, sequences, and procedures of construction that may be shown or indicated or expressly required by the Bidding Documents, that Bidder has given Engineer written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Bidding Documents and the written resolutions thereof by Engineer are acceptable to Bidder, and that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.

ARTICLE 5 – PRE-BID CONFERENCE

- 5.01 Not Required.

ARTICLE 6 – SITE AND OTHER AREAS

- 6.01 The Site is identified in the Bidding Documents. Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by Owner unless otherwise provided in the Bidding Documents. All additional lands and access thereto required for temporary construction facilities, construction equipment, or storage of materials and equipment to be incorporated in the Work are to be obtained and paid for by Contractor.

ARTICLE 7 – INTERPRETATIONS AND ADDENDA

- 7.01 All questions about the meaning or intent of the Bidding Documents are to be submitted to Engineer in writing. Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by Engineer as having received the Bidding Documents. Questions received less than ten days prior to the date for opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.
- 7.02 Addenda may be issued to clarify, correct, or change the Bidding Documents as deemed advisable by Owner or Engineer.

ARTICLE 8 – BID SECURITY

- 8.01 Each Bid must be accompanied by Bid security made payable to Owner in an amount of ten percent (10%) of the Bidder's maximum Bid price if in the form of a certified or bank

check or a Bid Bond issued by a surety meeting the requirements of Paragraph 5.01 and 5.02 of the General Conditions.

- 8.02 Bid security of other Bidders whom Owner believes do not have a reasonable chance of receiving the award will be released on request within seven days after the Bid opening.

ARTICLE 9 – CONTRACT TIMES

- 9.01 The number of days within which, or the dates by which, the Work is to be substantially completed and ready for final payment are set forth in the Agreement.

ARTICLE 10 – LIQUIDATED DAMAGES

- 10.01 Provisions for liquidated damages, if any, are set forth in the Agreement.

ARTICLE 11 – SUBSTITUTE AND “OR-EQUAL” ITEMS

- 11.01 The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents, or those substitute or “or-equal” materials and equipment as defined in Paragraph 6.05 of the General Conditions, approved by the Engineer and identified by Addendum. The materials and equipment described in the Bidding Documents establish a standard of required type, function and quality to be met by any proposed substitute or “or-equal” item. Request for Engineer's clarification of materials and equipment considered “or-equal” prior to the Effective Date of the Agreement must be received by the Engineer at least 5 days prior to the date for receipt of Bids. No item of material or equipment will be considered by Engineer as a substitute or “or-equal” unless written request for approval has been submitted by Bidder and has been received by Engineer at least 15 days prior to the date for receipt of Bids. Each such request shall conform to the requirements of Paragraph 6.05 of the General Conditions. The burden of proof of the merit of the proposed item is upon the Bidder. Engineer's decision of approval or disapproval of a proposed item will be final. If Engineer approves any proposed substitute item, such approval will be set forth in an Addendum issued to all prospective Bidders. Bidders shall not rely upon approvals made in any other manner.

ARTICLE 12 – SUBCONTRACTORS, SUPPLIERS AND OTHERS

- 12.01 If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, individuals, or entities to be submitted to Owner in advance of a specified date prior to the Effective Date of the Agreement, the apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening, submit to Owner a list of all such Subcontractors, Suppliers, individuals, or entities proposed for those portions of the Work for which such identification is required. Such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, individual, or entity if requested by Owner. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit a substitute, without an increase in the Bid.

- 12.02 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, individuals, or entities. Declining to make requested substitutions will not constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to revocation of such acceptance after the Effective Date of the Agreement as provided in Paragraph 6.06 of the General Conditions.
- 12.03 Contractor shall not be required to employ any Subcontractor, Supplier, individual, or entity against whom Contractor has reasonable objection.

ARTICLE 13 – PREPARATION OF BID

- 13.01 The Bid Form is included with the Bidding Documents. Additional copies may be obtained from Engineer.
- 13.02 All blanks on the Bid Form shall be completed by printing in ink or by typewriter and the Bid Form signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each Bid item, alternative, adjustment unit price item, and unit price item listed therein. In the case of optional alternatives, the words “No Bid” may be entered.
- 13.02.A Where the Bid Form includes more than one item, the Bidder may attach a substitute Proposal Form printed by a computer in lieu of completing the printed Proposal Form. If a substitute Proposal Form is used, it shall be attached to the back side of the printed Proposal Form. Such computer printed substitute Proposal Form shall include the following at the top of each page:
- a. Project Title
 - b. Letting Date
 - c. Bidder’s Name

The substitute computer printed Proposal Form shall have column headings that include the Item Number, Number of Units, Item Description, Unit Bid Price, Amount Bid for each item, Total Gross Sum Bid below the last bid item and bidder’s name, signature in ink and title at the end of the Proposal Form. The signature on the substitute computer printed Proposal Form shall be the same as that on the bound Bid Form. The total gross sum bid shall also be written in ink in the space provided in the bound Bid Form. In case of a discrepancy between the item number, item description, and/or quantity shown in the bound Bid Form and those shown in the substitute computer printed Proposal Form, the bid item description and/or quantity shown in the bound Bid Form shall govern. The unit bid price shown on the substitute computer printed Proposal Form shall govern whether or not the amount bid shown is correct. The

substitute Proposal Form page size and size of printed characters shall be approximately the same as the bound Bid Form. Solid lines for separating may be arranged either vertically or horizontally on the substitute Proposal Form. Pages must be numbered by page number of the total pages (Page 1 of 4). Item numbers must follow the Item numbers on the Bid Form. Any abnormalities which are not waived by the Owner as a technicality will result in rejection of the bid.

- 13.03 A Bid by a corporation shall be executed in the corporate name by the president or a vice-president or other corporate officer accompanied by evidence of authority to sign. If required by State where work is to be performed, the corporate seal shall be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown.
- 13.04 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership shall be shown.
- 13.05 A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm shall be shown.
- 13.06 A Bid by an individual shall show the Bidder's name and official address.
- 13.07 A Bid by a joint venture shall be executed by each joint venturer in the manner indicated on the Bid Form. The official address of the joint venture shall be shown.
- 13.08 All names shall be typed or printed in ink below the signatures.
- 13.09 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.
- 13.10 Postal and e-mail addresses and telephone number for communications regarding the Bid shall be shown.
- 13.11 The Bid shall contain evidence of Bidder's authority and qualification to do business in the state where the Project is located or covenant to obtain such qualification prior to award of the Contract. Bidder's state contractor license number, if any, for the state of the Project, shall also be shown on the Bid Form.

ARTICLE 14 – BASIS OF BID; COMPARISON OF BIDS

14.01 *Lump Sum*

- A. Bidders shall submit a Bid on a lump sum basis for the base Bid and include a separate price for each alternate described in the Bidding Documents as provided for in the Bid Form. The price for each alternate will be the amount added to or deleted from the base Bid if Owner selects the alternate.

14.02 *Unit Price*

- A. Bidders shall submit a Bid on a unit price basis for each item of Work listed in the Bid schedule.
- B. The total of all estimated prices will be the sum of the products of the estimated quantity of each item and the corresponding unit price. The final quantities and Contract Price will be determined in accordance with Paragraph 11.03 of the General Conditions.
- C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between words and figures will be resolved in favor of the words.

ARTICLE 15 – SUBMITTAL OF BID

- 15.01 With each copy of the Bidding Documents, a Bidder is furnished one separate unbound copy each of the Bid Form, and, if required, the Bid Bond Form. The unbound copy of the Bid Form is to be completed and submitted with all attachments listed in Article 7 of the Bid.
- 15.02 A Bid shall be submitted no later than the date and time prescribed and at the place indicated in the Advertisement or Invitation to Bid and shall be enclosed in a plainly marked package with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted), the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate package plainly marked on the outside with the notation "BID ENCLOSED." Whether using the mail, personal delivery, or some other delivery system, the Bidder is totally responsible for the mail or other delivery system delivering the Bid at the place and prior to that time indicated in the Advertisement for Bid. Note that the location for the Bid opening may be a rural location not reliably covered by the "delivery time guarantee" of various delivery services. A mailed Bid shall be addressed to the Owner at the address specified by the Bidding Notice.

ARTICLE 16 – MODIFICATION AND WITHDRAWAL OF BID

- 16.01 A Bid may be modified or withdrawn by an appropriate document duly executed in the same manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids.
- 16.02 If within 24 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, if the Work is rebid, that Bidder will be disqualified from further bidding on the Work. This provision to withdraw a Bid without forfeiting the Bid Security does not apply to Bidder's errors in judgment in preparing the Bid

ARTICLE 17 – OPENING OF BIDS

- 17.01 Bids will be opened at the time and place indicated in the Advertisement or Invitation to Bid and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the base Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.

ARTICLE 18 – BIDS TO REMAIN SUBJECT TO ACCEPTANCE

- 18.01 All Bids will remain subject to acceptance for the period of time stated in the Bid Form, but Owner may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

ARTICLE 19 – EVALUATION OF BIDS AND AWARD OF CONTRACT

- 19.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner further reserves the right to reject the Bid of any Bidder whom it finds, after reasonable inquiry and evaluation, to not be responsible. Owner may also 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. Owner also reserves the right to waive all informalities not involving price, time, or changes in the Work and to negotiate contract terms with the Successful Bidder.
- 19.02 More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any Bidder has an interest in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.
- 19.03 In evaluating Bids, Owner will consider 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.
- 19.04 In evaluating Bidders, Owner will consider the qualifications of Bidders and may consider the qualifications and experience of Subcontractors, Suppliers, and other individuals or entities proposed for those portions of the Work for which the identity of Subcontractors, Suppliers, and other individuals or entities must be submitted as provided in the Supplementary Conditions.
- 19.05 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders, proposed Subcontractors, Suppliers, individuals, or entities proposed for those portions of the Work in accordance with the Contract Documents.
- 19.06 If the Contract is to be awarded, Owner will award the Contract to the responsible Bidder whose Bid is in the best interests of the Project for each Schedule of work listed separately.

ARTICLE 20 – CONTRACT SECURITY AND INSURANCE

- 20.01 Article 5 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner's requirements as to performance and payment bonds and insurance.

When the Successful Bidder delivers the executed Agreement to Owner, it shall be accompanied by such bonds.

ARTICLE 21 – SIGNING OF AGREEMENT

21.01 When Owner issues a Notice of Award to the Successful Bidder, it shall be accompanied by the required number of unsigned counterparts of the Agreement along with the other Contract Documents which are identified in the Agreement as attached thereto. Within 15 days thereafter, Successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached documents to Owner. Within ten days thereafter, Owner shall deliver one fully signed counterpart to Successful Bidder with a complete set of the Drawings with appropriate identification.

ARTICLE 22 – SALES AND USE TAXES

22.01 The unit prices for construction units in this Proposal shall be deemed to include provisions for the payment of all moneys which will be payable by the Bidder or the Owner in connection with the construction of the project on account of taxes imposed by any taxing authority upon the sale, purchase or use of materials, supplies, labor, and equipment to be incorporated in the project as part of such construction units. The Bidder shall furnish to the appropriate taxing authorities, all required information and reports pertaining to materials and services used in the construction of the project.

ARTICLE 23 – DAVIS-BACON AND RELATED ACTS

23.01 Not Applicable.

ARTICLE 24 – RETAINAGE

24.01 Provisions concerning Contractor's rights to deposit securities in lieu of retainage are set forth in the Agreement.

STATE OF MINNESOTA - RESPONSIBLE CONTRACTOR CERTIFICATE

Applies to all prime contracts in excess of \$50,000

A responsible contractor is defined in Minnesota Statutes §16C.285, subdivision 3.

Any prime contractor or subcontractor who does not meet the minimum criteria under Minnesota Statutes §16C.285, subdivision 3, or who fails to verify that it meets those criteria, is not a responsible contractor and is not eligible to be awarded a construction contract for the project or to perform work on the project.

A false statement under oath verifying compliance with any of the minimum criteria shall render the prime contractor or subcontractor that makes the false statement ineligible to be awarded a construction contract for the project and may result in termination of a contract awarded to a prime contractor or subcontractor that makes a false statement.

A prime contractor shall submit to the contracting authority upon request copies of the signed verifications of compliance from all subcontractors of any tier pursuant to subdivision 3, clause 7.

By signing this statement, I, _____(typed or printed name),
_____(title) certify that I am an owner or officer of the company and do
verify under oath that my company is in compliance with each of the minimum criteria listed in
the law.

(name of the person, partnership or corporation submitting this proposal)

(business address)

Signed: _____
(bidder or authorized representative)

Date

BID BOND

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

BIDDER (*Name and Address*):

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

OWNER (*Name and Address*):

BID

Bid Due Date:

Description (*Project Name— Include Location*):

BOND

Bond Number:

Date:

Penal sum _____ \$ _____
(Words) (Figures)

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

BIDDER

SURETY

Bidder's Name and Corporate Seal

Surety's Name and Corporate Seal

By: _____
Signature

By: _____
Signature (Attach Power of Attorney)

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title

Title

Note: Addresses are to be used for giving any required notice.

Provide execution by any additional parties, such as joint venturers, if necessary.

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond shall be Owner's sole and exclusive remedy upon default of Bidder.
2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.
3. This obligation shall be null and void if:
 - 3.1 Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or
 - 3.2 All Bids are rejected by Owner, or
 - 3.3 Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from the Bid due date without Surety's written consent.
6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case later than one year after the Bid due date.
7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.
9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.
10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.
11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

CONTRACTOR'S PROPOSAL

ARTICLE 0 – BID RECIPIENT

PROJECT IDENTIFICATION:

2025 Alley Improvements

Windom, Minnesota

0.01 This Bid is submitted to:

City of Windom

P.O. Box 38

444 9th Street

Windom, MN 56101-0038

This Bid is due: Before 10:00 o'clock A.M. on June 25, 2025.

0.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 1 – BIDDER'S ACKNOWLEDGEMENTS

1.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 35 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

ARTICLE 2 – BIDDER’S REPRESENTATIONS

2.01 In submitting this Bid, Bidder represents that:

- A. Bidder has examined and carefully studied the Bidding Documents, and any data and reference items identified in the Bidding Documents, and hereby acknowledges receipt of the following Addenda:

<u>Addendum No.</u>	<u>Addendum Date</u>
_____	_____
_____	_____
_____	_____

- B. Bidder has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfied itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. Bidder is familiar with and has satisfied itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. Bidder has carefully studied, if any are available, all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.
- E. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and any Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder’s safety precautions and programs.

- F. Bidder agrees, based on the information and observations referred to in the preceding paragraph, that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.
- G. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
- H. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and confirms that the written resolution thereof by Engineer is acceptable to Bidder.
- I. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work.
- J. The submission of this Bid constitutes an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, and that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 3 – BIDDER’S CERTIFICATION

3.01 Bidder certifies that:

- A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
- C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
- D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:
 - 1. “corrupt practice” means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process;

2. “fraudulent practice” means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
3. “collusive practice” means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
4. “coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

ARTICLE 4 – BASIS OF BID

- 4.01 Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

PROJECT NAME: 2025 Alley Improvements

The Bid for the following items shall be a unit price or lump sum Bid as indicated for each item for all construction work described in the Contract Documents. Quantities indicated for unit price Bid items are estimates only.

**2025 Alley Improvements
Windom, Minnesota**

PROJECT BID SCHEDULE

Base Bid

<u>Item No.</u>	<u>Specification Reference</u>	<u>No. of Units</u>	<u>Item Description</u>	<u>Unit Price</u>	<u>Total Price</u>
1.	2021.501	JOB	Mobilization, lump sum	\$ _____ L.S. \$ _____	
2.	2051.501	JOB	Maint & Restoration of Access, lump sum	\$ _____ L.S. \$ _____	
3.	2051.504	4,950	Remove Pavement, per sq. yd.	\$ _____ \$ _____	
4.	2105.501	2,050	Common Excavation (P), per cu. yd.	\$ _____ \$ _____	
5.	2112.604	4,950	12" Subgrade Preparation, per sq. yd.	\$ _____ \$ _____	
6.	2211.501	4,950	12" Aggregate Base Class 5, per sq. yd.	\$ _____ \$ _____	
7.	2360.501/502	1,165	Bituminous Pavement, 4", per ton	\$ _____ \$ _____	
8.	2531.501	230	Concrete Curb and Gutter Match, per lin. ft.	\$ _____ \$ _____	
9.	2531.507	280	7" Concrete Approach Pavement, per sq. yd.	\$ _____ \$ _____	
10.	2502.541	160	4" Perforated Drain Pipe, per lin. ft.	\$ _____ \$ _____	
11.	2502.541	24	Subdrain/Roof Drain Outlet, per ea.	\$ _____ \$ _____	
12.	2503.511	209	6" PVC Pipe Sewer, SDR-35, per lin. ft.	\$ _____ \$ _____	
13.	2503.511	211	8" PVC Pipe Sewer, SDR-35, per lin. ft.	\$ _____ \$ _____	
14.	2503.511	118	10" PVC Pipe Sewer, SDR-35, per lin. ft.	\$ _____ \$ _____	
15.	2503.511	1,029	15" RC Pipe Sewer, Class III, per lin. ft.	\$ _____ \$ _____	

<u>Item No.</u>	<u>Specification Reference</u>	<u>No. of Units</u>	<u>Item Description</u>	<u>Unit Price</u>	<u>Total Price</u>
16.	2503.602	2	Connect to Existing Storm Sewer, per ea.	\$ _____	\$ _____
17.	2503.602	10	Connect to Existing Roof Drain, per ea.	\$ _____	\$ _____
18.	2502.602	9	Roof Drain Inserta-Tee, 6", per ea.	\$ _____	\$ _____
19.	2503.602	8	Roof Drain Inserta-Tee, 8", per ea.	\$ _____	\$ _____
20.	2506.502	1	Storm Manhole 4x4 Minimum, per ea.	\$ _____	\$ _____
21.	2506.502	7	Single Grate Intake, per ea.	\$ _____	\$ _____
22.	2105.501	80	Terrace Grading, per sq. yd.	\$ _____	\$ _____
23.	2563.601	JOB	Traffic Control, lump sum	\$ _____ L.S.	\$ _____
24.	2564.536	2	Install Handicap Sign, per ea.	\$ _____	\$ _____
25.		JOB	SWPPP Management, lump sum	\$ _____ L.S.	\$ _____
26.	2573.53	8	Storm Drain Inlet Protection, per ea.	\$ _____	\$ _____
27.	2575.501	JOB	Seeding, Fertilizing, and Hydromulching, lump sum	\$ _____ L.S.	\$ _____
28.	2582.501	2	Pavement Markings – Symbol, per ea.	\$ _____	\$ _____
29.	2581.502	1,082	Pavement Markings – 4" Parking Stalls, per lin. ft.	\$ _____	\$ _____

TOTAL BASE BID IN FIGURES

\$ _____

TOTAL BASE BID IN WORDS _____

Dollars

Alternate Bid

<u>Item No.</u>	<u>Specification Reference</u>	<u>No. of Units</u>	<u>Item Description</u>	<u>Unit Price</u>	<u>Total Price</u>
A1.	2051.504	330	Remove Pavement, per sq. yd.	\$ _____	\$ _____
A2.	2105.501	17	Common Excavation (P), per cu. yd.	\$ _____	\$ _____
A3.	2112.604	330	12" Subgrade Preparation, per sq. yd.	\$ _____	\$ _____
A4.	2211.501	330	12" Aggregate Base Class 5, per sq. yd.	\$ _____	\$ _____
A5.	2360.501/502	84	Bituminous Pavement, 4", per ton	\$ _____	\$ _____
A6.	2503.511	161	6" PVC Pipe Sewer, SDR-35, per lin. ft.	\$ _____	\$ _____
A7.	2503.511	337	8" PVC Pipe Sewer, SDR-35, per lin. ft.	\$ _____	\$ _____
A8.	2503.511	24	10" PVC Pipe Sewer, SDR-36, per lin. ft.	\$ _____	\$ _____
A9.	2503.602	16	Connect to Existing Roof Drain, per ea.	\$ _____	\$ _____

TOTAL ALTERNATE BID IN FIGURES

\$ _____

TOTAL ALTERNATE BID IN WORDS _____

Dollars

ARTICLE 5 – TIME OF COMPLETION

- 5.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.
- 5.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 6 – ATTACHMENTS TO THIS BID

- 6.01 The following documents are submitted with and made a condition of this Bid:
- A. Required Bid security in the form of _____;
 - B. Evidence of authority to do business in the state of the Project; or a written covenant to obtain such license within the time for acceptance of Bids;
 - C. Signed statement of compliance with Minnesota Statute section 16C.285 (the “Responsible Contractor” law).
 - D. List of Project References (upon request).

ARTICLE 7 – DEFINED TERMS

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

ARTICLE 8 – BID SUBMITTAL

BIDDER: *[Indicate correct name of bidding entity]*

By:

[Signature] _____

[Printed name] _____

(If Bidder is a corporation, a limited liability company, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest:

[Signature] _____

[Printed name] _____

Title: _____

Submittal Date: _____

Address for giving notices:

Telephone Number: _____

Fax Number: _____

Contact Name and e-mail address: _____

Bidder's License No.: _____

(where applicable)

CONTRACT DOCUMENTS

NOTICE OF AWARD

Date of Issuance: _____

Owner: _____

Owner's Contract No.: _____

Engineer: DGR Engineering

Engineer's Project No.: _____

Project: _____

Contract Name: _____

Bidder: _____

Bidder's Address: _____

TO BIDDER:

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

[describe Work, alternates, or sections of Work awarded]

The Contract Price of the awarded Contract is: \$ _____ *[note if subject to unit prices, or cost-plus]*

[] unexecuted counterparts of the Agreement accompany this Notice of Award, and one copy of the Contract Documents accompanies this Notice of Award, or has been transmitted or made available to Bidder electronically. *[revise if multiple copies accompany the Notice of Award]*

☐ a set of the Drawings will be delivered separately from the other Contract Documents.

You must comply with the following conditions precedent within 15 days of the date of receipt of this Notice of Award:

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

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

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

Owner: _____

Authorized Signature

By: _____

Title: _____

Copy: DGR Engineering

AGREEMENT
BETWEEN OWNER AND CONTRACTOR
FOR CONSTRUCTION CONTRACT

THIS AGREEMENT is by and between City of Windom, Minnesota (“Owner”) and
_____ (“Contractor”).

Owner and Contractor hereby agree as follows:

ARTICLE 1 – WORK

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

2025 Alley Improvements

ARTICLE 2 – THE PROJECT

2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows: 2025 Alley Improvements, Windom, Minnesota.

ARTICLE 3 – ENGINEER

3.01 The Project has been designed by DGR Engineering.

3.02 The Owner has retained DGR Engineering (“Engineer”) to act as Owner’s representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 – CONTRACT TIMES

4.01 Time of the Essence

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

4.02 Contract Times: Dates

A. All work shall be substantially complete on or before **October 24, 2025** and shall be fully complete and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before November 13, 2025.

4.03 Liquidated Damages

- A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with the Contract. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):
1. Milestone Date (15th Avenue): Contractor shall pay Owner \$500.00 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.A above for Substantial Completion until the Work is substantially complete.
 2. Substantial Completion: Contractor shall pay Owner \$500.00 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.A above for Substantial Completion until the Work is substantially complete.
 3. Completion of Remaining Work: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner \$500.00 for each day that expires after such time until the Work is completed and ready for final payment.
 4. Liquidated damages for failing to timely attain Substantial Completion and final completion are not additive and will not be imposed concurrently.

ARTICLE 5 – CONTRACT PRICE

- 5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents the amounts that follow, subject to adjustment under the Contract:

- A. For all Work, at the prices stated in Contractor's Bid, attached hereto as an exhibit.
- B. For all Unit Price Work, an amount equal to the sum of the established unit price for each separately identified item of Unit Price Work times the estimated quantity of that item as indicated in the Contractor's Bid.

As provided in Paragraph 11.03 of the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by Engineer as provided in Paragraph 9.07 of the General Conditions. Unit prices have been computed as provided in Paragraph 11.03 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 15 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

6.02 Progress Payments; Retainage

- A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment on or about the 15th day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.
 - 1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract
 - a. 95 percent of Work completed (with the 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, then as long as the character and progress of the Work remain satisfactory to Owner and Engineer, 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).
- B. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to 95 percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less 200 percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.

6.03 Final Payment

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

ARTICLE 7 – INTEREST

7.01 All amounts not paid when due shall bear interest at the rate of 7 percent per annum.

ARTICLE 8 – CONTRACTOR’S REPRESENTATIONS

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

- A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.
- B. Contractor has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. Contractor is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings. If no such reports have been made available to Contractor, Contractor agrees that none are required from Owner.
- E. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (3) Contractor’s safety precautions and programs.
- F. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
- G. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
- H. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.

- I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
- J. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

ARTICLE 9 – CONTRACT DOCUMENTS

9.01 Contents

- A. The Contract Documents consist of the following:
 - 1. This Agreement (pages 1 to 8, inclusive).
 - 2. Performance bond (pages 1 to 2, inclusive).
 - 3. Payment bond (pages 1 to 2, inclusive).
 - 4. General Conditions (pages 1 to 65, inclusive).
 - 5. Supplementary Conditions (pages SC-1 to SC-6 inclusive).
 - 6. Specifications as listed in the table of contents of the Project Manual.
 - 7. Drawings (not attached but incorporated by reference) consisting of 47 sheets with each sheet bearing the following general title: **2025 Alley Improvements [or]** the Drawings listed on the attached sheet index.
 - 8. Addenda (numbers ____ to ____, inclusive).
 - 9. Exhibits to this Agreement (enumerated as follows):
 - a. Contractor's Bid (pages CP-1 to CP-9, inclusive).
 - 10. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
 - a. Notice to Proceed.
 - b. Work Change Directives.
 - c. Change Orders.
 - d. Field Orders.

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

ARTICLE 10 – MISCELLANEOUS

10.01 Terms

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

10.02 Assignment of Contract

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

10.03 Successors and Assigns

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

10.04 Severability

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

10.05 Contractor's Certifications

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 10.05:
1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process or in the Contract execution;
 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
 3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
 4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

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

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

OWNER:

CONTRACTOR:

City of Windom, MN

By: _____

By: _____

Title: _____

Title: _____

*(If Contractor is a corporation, a partnership,
or a joint venture, attach evidence of authority
to sign.)*

Attest: _____

Attest: _____

Title: _____

Title: _____

Address for giving notices:

Address for giving notices:

City of Windom

PO Box 38

Windom, MN 56101-0038

License No.: _____

(where applicable)

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

PERFORMANCE BOND

CONTRACTOR *(name and address):*

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

OWNER *(name and address):*

City of Windom, Minnesota
444 9th Street
PO Box 38
Windom, Minnesota 56101-0038

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location):*

BOND

Bond Number:

Date *(not earlier than the Effective Date of the Agreement of the Construction Contract):*

Amount:

Modifications to this Bond Form: ☐ None ☐ See Paragraph 16

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

CONTRACTOR AS PRINCIPAL

Contractor's Name and Corporate Seal

By: _____
Signature

Print Name

Title

Attest: _____
Signature

Title

SURETY

Surety's Name and Corporate Seal

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

Print Name

Title

Attest: _____
Signature

Title

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

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.
2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after:
 - 3.1. The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;
 - 3.2. The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and
 - 3.3. The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.
4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.
5. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:
 - 5.1. Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;
 - 5.2. Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;
 - 5.3. Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or
 - 5.4. Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:
 - 5.4.1. After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
 - 5.4.2. Deny liability in whole or in part and notify the Owner, citing the reasons for denial.
6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.
7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:
 - 7.1. the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
 - 7.2. additional legal, design professional, and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and
 - 7.3. liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.
8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.
9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.
10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
11. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit shall be applicable.
12. Notice to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.
13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
14. Definitions
 - 14.1. Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.
 - 14.2. Construction Contract: The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.
 - 14.3. Contractor Default: Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.
 - 14.4. Owner Default: Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
 - 14.5. Contract Documents: All the documents that comprise the agreement between the Owner and Contractor.
15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.
16. Modifications to this Bond are as follows:

PAYMENT BOND

CONTRACTOR (*name and address*):

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

OWNER (*name and address*):

City of Windom, Minnesota
444 9th Street
PO Box 38
Windom, Minnesota 56101-0038

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description (*name and location*):

BOND

Bond Number:

Date (*not earlier than the Effective Date of the Agreement of the Construction Contract*):

Amount:

Modifications to this Bond Form: ☐ None ☐ See Paragraph 18

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

CONTRACTOR AS PRINCIPAL

SURETY

Contractor's Name and Corporate Seal

Surety's Name and Corporate Seal

By: _____
Signature

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

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title

Title

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

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.
2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.
4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.
5. The Surety's obligations to a Claimant under this Bond shall arise after the following:
 - 5.1. Claimants who do not have a direct contract with the Contractor,
 - 5.1.1. have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
 - 5.1.2. have sent a Claim to the Surety (at the address described in Paragraph 13).
 - 5.2. Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).
6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.
7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:
 - 7.1. Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
 - 7.2. Pay or arrange for payment of any undisputed amounts.
 - 7.3. The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.
8. The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.
9. Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.
10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.
11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
12. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
13. Notice and Claims to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.
14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.
16. **Definitions**
 - 16.1. **Claim:** A written statement by the Claimant including at a minimum:
 1. The name of the Claimant;
 2. The name of the person for whom the labor was done, or materials or equipment furnished;
 3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
 4. A brief description of the labor, materials, or equipment furnished;
 5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
 6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
 7. The total amount of previous payments received by the Claimant; and
 8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.
 - 16.2. **Claimant:** An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms of "labor, materials, or equipment" that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.
 - 16.3. **Construction Contract:** The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.
 - 16.4. **Owner Default:** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
 - 16.5. **Contract Documents:** All the documents that comprise the agreement between the Owner and Contractor.
17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.
18. Modifications to this Bond are as follows:

NOTICE TO PROCEED

Owner:	Owner's Contract No.:
Contractor:	Contractor's Project No.:
Engineer: DGR Engineering	Engineer's Project No.:
Project:	Contract Name:
	Effective Date of Contract:

TO CONTRACTOR:

Owner hereby notifies Contractor that the Contract Times under the above Contract will commence to run on [_____, 20__]. *[see Paragraph 4.01 of the General Conditions]*

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

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

[Note any access limitations, security procedures, or other restrictions]

Owner:

Authorized Signature

By:

Title:

Date Issued:

Copy: DGR Engineering

MISCELLANEOUS FORMS

CERTIFICATE FOR PAYMENT NO. _____

Project:

DGR Project No. _____

Owner:

For Period From: _____ to _____

<u>Line No.</u>	<u>Estimated</u>	<u>Description</u>	<u>Unit Price</u>	<u>Contract Price</u>	<u>This Application</u>		<u>Completed to Date</u>	
	<u>Units</u>				<u>Units</u>	<u>Value</u>	<u>Units</u>	<u>Value</u>
1.				\$0.00		\$0.00		\$0.00
2.				0.00		0.00		0.00
3.				0.00		0.00		0.00
4.				0.00		0.00		0.00
5.				0.00		0.00		0.00
6.				0.00		0.00		0.00
7.				0.00		0.00		0.00
8.				0.00		0.00		0.00
9.				0.00		0.00		0.00
10.				<u>0.00</u>		<u>0.00</u>		<u>0.00</u>
<u>TOTAL PROJECT COST:</u>				<u>\$0.00</u>		<u>\$0.00</u>		<u>\$0.00</u>

Total Work Completed \$0.00

Materials Stored on Site 0.00

Less Retainage 5 % 0.00

\$0.00

Less Previous Payments 0.00

TOTAL AMOUNT DUE THIS PAY REQUEST \$0.00

Payment Requested by:

(Contractor)

(signature) Date _____

Payment Recommended by: DGR Engineering

(signature) Date _____

Payment Approved by: (Owner)

(signature) Date _____

CERTIFICATE OF CONTRACTOR AND INDEMNITY AGREEMENT

_____, certifies that he is the * _____
Title or Designation

of _____, the Contractor,
Name of Contractor

in a contract No. _____ dated _____, entered into between the Contractor and

Name of Owner

the Owner, for the construction of _____

Name of Project

and that he is authorized to and does make this Certificate and Indemnity Agreement on behalf of the Contractor in order to induce the Owner to make payment to the Contractor, in accordance with the provisions of the Contract. Undersigned further certifies that:

1. The Project has been completed in accordance with provisions of the Construction Contract; provided however, that acceptance by the Owner shall not be deemed to relieve the Contractor of his obligations contained in the Construction Contract with respect to defective workmanship and materials discovered within _____ year(s) after the date of completion.

2. All persons who have furnished labor in connection with the Project have been paid in full at hourly wage rates not less than those, if any, set forth in the Construction Contract; that all manufacturers, materialmen and subcontractors which furnished any materials or services, or both, for the Project have been paid in full; that no lien has been filed against the Project and no person has any right to claim any lien against the Project.

3. That the Contractor has delivered to the Owner duplicate releases of liens executed by all manufacturers, materialmen and subcontractors that furnished materials or services for the project as follows:

Name	Kind of Material and Services
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

If the Owner pays the Contractor the total amount due under the Contract, which the Contractor agrees is \$_____, the Contractor will indemnify and hold harmless and does hereby undertake and agree to indemnify and hold harmless the Owner, including the defense of any suit, from any claim, demand or lien arising out of the acts of the Contractor in the performance of the Contract for which the Contractor is liable and which may have been or may be filed against the Owner.

Signature

- * President, Vice-President, Partner or Owner, or, if undersigned is other than one of the foregoing, Power of Attorney signed by one of the foregoing in favor of the undersigned should be attached. Indicate applicable designation.

WAIVER AND RELEASE OF LIEN

WHEREAS, the undersigned, _____
Name of Manufacturer, Materialman or Subcontractor

has furnished to _____ the following:
Name of Contractor

_____ for use in the construction of a
Kind of Material and Services Furnished

project belonging to _____, and
Name of Owner

designated as, _____
Name of Project

NOW, THEREFORE, the undersigned, _____
Name of Manufacturer, Materialman or Subcontractor

for and in consideration of \$ _____, and other good and valuable consideration, the receipt whereof is hereby acknowledged, do(es) hereby waive and release any and all liens, or right to or claim of lien, on the above described project and premises, under any law, common or statutory, on account of labor or materials, or both, heretofore or hereafter furnished by the undersigned to or for the account of said for said project.

Name of Contractor

Given under my (our) hand(s) and seal(s) this _____ day of _____, 20__.

Name of Manufacturer, Materialman or Subcontractor

By _____

President, Vice-President, Partner or Owner, or, if signed by other than one of foregoing, accompanied by Power of Attorney signed by one of the foregoing in favor of the signer. (Use designation applicable)

**ENGINEER'S STATEMENT OF FINAL COMPLETION
AND
OWNER'S ACCEPTANCE OF CONTRACT CONSTRUCTION**

To: _____

Project Designation

I, the undersigned Engineer of the above designated project, do hereby state that:

1. The construction provided for pursuant to Construction Contract No. _____, dated _____, including all approved amendments and change orders, (hereinafter called the "Project") between _____ ("Owner") and _____ ("Contractor") has been completed as of _____ and to the best of my knowledge, information and belief, based on observations made during the period of construction, is in substantial compliance with the provisions of the Construction Contract, including all plans, specifications and drawings, and modifications thereof.

To the best of my knowledge, information and belief,

2. Defects in workmanship and materials reported during the period of construction of the Project have been corrected.

3. The total cost of the project as completed is _____ dollars (\$_____).

4. The Final Inventory as shown on Certificate for Payment No. ____ - Final is a complete and accurate summary of the work performed in accordance with the Construction Contract.

Accepted:

DEWILD GRANT RECKERT AND ASSOCIATES
COMPANY d/b/a DGR ENGINEERING

Owner

By _____

Title _____

By _____

Date _____

Date _____

Attest _____

Field Order No. _____

Date of Issuance:	Effective Date:
Owner:	Owner's Contract No.:
Contractor:	Contractor's Project No.:
Engineer: DGR Engineering	Engineer's Project No.:
Project:	Contract Name:

Contractor is hereby directed to promptly execute this Field Order, issued in accordance with General Conditions Paragraph 11.01, for minor changes in the Work without changes in Contract Price or Contract Times. If Contractor considers that a change in Contract Price or Contract Times is required, submit a Change Proposal before proceeding with this Work.

Reference: _____
Specification(s) Drawing(s) / Detail(s)

Description:

Attachments:

ISSUED:	RECEIVED:
By: _____ Engineer (Authorized Signature)	By: _____ Contractor (Authorized Signature)
Title: _____	Title: _____
Date: _____	Date: _____
Copy to: Owner	

Work Change Directive No.

Date of Issuance:

Effective Date:

Owner:

Owner's Contract No.:

Contractor:

Contractor's Project No.:

Engineer: DGR Engineering

Engineer's Project No.:

Project:

Contract Name:

Contractor is directed to proceed promptly with the following change(s):

Description:

Attachments: *[List documents supporting change]*

Purpose for Work Change Directive:

Directive to proceed promptly with the Work described herein, prior to agreeing to changes on Contract Price and Contract Time, is issued due to: *[check one or both of the following]*

- ☐ Non-agreement on pricing of proposed change.
☐ Necessity to proceed for schedule or other Project reasons.

Estimated Change in Contract Price and Contract Times (non-binding, preliminary):

Contract Price \$ _____ [increase] [decrease].

Contract Time _____ days [increase] [decrease].

Basis of estimated change in Contract Price:

- ☐ Lump Sum ☐ Unit Price
☐ Cost of the Work ☐ Other

RECOMMENDED:		AUTHORIZED BY:		RECEIVED:	
By: _____	By: _____	By: _____			
Engineer (Authorized Signature)	Owner (Authorized Signature)	Contractor (Authorized Signature)			
Title: _____	Title: _____	Title: _____			
Date: _____	Date: _____	Date: _____			

Approved by Funding Agency (if applicable)

By: _____ Date: _____
 Title: _____

Change Order No. _____

Date of Issuance:

Effective Date:

Owner:

Owner's Contract No.:

Contractor:

Contractor's Project No.:

Engineer: DGR Engineering

Engineer's Project No.:

Project:

Contract Name:

The Contract is modified as follows upon execution of this Change Order:

Description:

Attachments: *[List documents supporting change]*

CHANGE IN CONTRACT PRICE	CHANGE IN CONTRACT TIMES <i>[note changes in Milestones if applicable]</i>
Original Contract Price: \$_____	Original Contract Times: Substantial Completion: _____ Ready for Final Payment: _____ days or dates
[Increase] [Decrease] from previously approved Change Orders No. ___ to No. ___: \$_____	[Increase] [Decrease] from previously approved Change Orders No. ___ to No. ___: Substantial Completion: _____ Ready for Final Payment: _____ days
Contract Price prior to this Change Order: \$_____	Contract Times prior to this Change Order: Substantial Completion: _____ Ready for Final Payment: _____ days or dates
[Increase] [Decrease] of this Change Order: \$_____	[Increase] [Decrease] of this Change Order: Substantial Completion: _____ Ready for Final Payment: _____ days or dates
Contract Price incorporating this Change Order: \$_____	Contract Times with all approved Change Orders: Substantial Completion: _____ Ready for Final Payment: _____ days or dates

RECOMMENDED:	ACCEPTED:	ACCEPTED:
By: _____ Engineer (if required)	By: _____ Owner (Authorized	By: _____ Contractor (Authorized
Title: _____	Title _____	Title _____
Date: _____	Date _____	Date _____

Approved by Funding Agency (if applicable)

By: _____ Date: _____

Title: _____

CERTIFICATE OF SUBSTANTIAL COMPLETION

Owner: Contractor: Engineer: DGR Engineering Project:	Owner's Contract No.: Contractor's Project No.: Engineer's Project No.: Contract Name:
--	---

This [preliminary] [final] Certificate of Substantial Completion applies to:

☐ All Work
 ☐ The following specified portions of the Work:

Date of Substantial Completion

The Work to which this Certificate applies has been inspected by authorized representatives of Owner, Contractor, and Engineer, and found to be substantially complete. The Date of Substantial Completion of the Work or portion thereof designated above is hereby established, subject to the provisions of the Contract pertaining to Substantial Completion. The date of Substantial Completion in the final Certificate of Substantial Completion marks the commencement of the contractual correction period and applicable warranties required by the Contract.

A punch list of items to be completed or corrected is attached to this Certificate. This list may not be all-inclusive, and the failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract.

The responsibilities between Owner and Contractor for security, operation, safety, maintenance, heat, utilities, insurance, and warranties upon Owner's use or occupancy of the Work shall be as provided in the Contract, except as amended as follows: *[Note: Amendments of contractual responsibilities recorded in this Certificate should be the product of mutual agreement of Owner and Contractor; see Paragraph 15.03.D of the General Conditions.]*

Amendments to Owner's responsibilities:
 ☐ None
☐ As follows

Amendments to Contractor's responsibilities:
 ☐ None
☐ As follows:

The following documents are attached to and made a part of this Certificate: *[punch list; others]*

This Certificate does not constitute an acceptance of Work not in accordance with the Contract Documents, nor is it a release of Contractor's obligation to complete the Work in accordance with the Contract.

EXECUTED BY ENGINEER:	RECEIVED:	RECEIVED:
By: _____ (Authorized signature)	By: _____ Owner (Authorized Signature)	By: _____ Contractor (Authorized)
Title: _____	Title: _____	Title: _____
Date: _____	Date: _____	Date: _____

CONTRACT CONDITIONS

GENERAL CONDITIONS

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

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by



Issued and Published Jointly by



These General Conditions have been prepared for use with the Agreement Between Owner and Contractor for Construction Contract (EJCDC® C-520, Stipulated Sum, or C-525, Cost-Plus, 2013 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other.

To prepare supplementary conditions that are coordinated with the General Conditions, use EJCDC's Guide to the Preparation of Supplementary Conditions (EJCDC® C-800, 2013 Edition). The full EJCDC Construction series of documents is discussed in the Commentary on the 2013 EJCDC Construction Documents (EJCDC® C-001, 2013 Edition).

Copyright © 2013:

National Society of Professional Engineers
1420 King Street, Alexandria, VA 22314-2794
(703) 684-2882
www.nspe.org

American Council of Engineering Companies
1015 15th Street N.W., Washington, DC 20005
(202) 347-7474
www.acec.org

American Society of Civil Engineers
1801 Alexander Bell Drive, Reston, VA 20191-4400
(800) 548-2723
www.asce.org

The copyright for this document is owned jointly by the three sponsoring organizations listed above. The National Society of Professional Engineers is the Copyright Administrator for the EJCDC documents; please direct all inquiries regarding EJCDC copyrights to NSPE.

NOTE: EJCDC publications may be purchased at www.ejcdc.org, or from any of the sponsoring organizations above.

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

TABLE OF CONTENTS

	Page
ARTICLE 1 – Definitions and Terminology.....	1
1.01 Defined Terms	1
1.02 Terminology.....	5
ARTICLE 2 – Preliminary Matters	6
2.01 Delivery of Bonds and Evidence of Insurance.....	6
2.02 Copies of Documents.....	6
2.03 Before Starting Construction	6
2.04 Preconstruction Conference; Designation of Authorized Representatives	7
2.05 Initial Acceptance of Schedules	7
2.06 Electronic Transmittals	7
ARTICLE 3 – Documents: Intent, Requirements, Reuse	8
3.01 Intent	8
3.02 Reference Standards	8
3.03 Reporting and Resolving Discrepancies.....	8
3.04 Requirements of the Contract Documents.....	9
3.05 Reuse of Documents.....	10
ARTICLE 4 – Commencement and Progress of the Work	10
4.01 Commencement of Contract Times; Notice to Proceed.....	10
4.02 Starting the Work	10
4.03 Reference Points.....	10
4.04 Progress Schedule.....	10
4.05 Delays in Contractor’s Progress	11
ARTICLE 5 – Availability of Lands; Subsurface and Physical Conditions; Hazardous Environmental Conditions.....	12
5.01 Availability of Lands.....	12
5.02 Use of Site and Other Areas	12
5.03 Subsurface and Physical Conditions	13
5.04 Differing Subsurface or Physical Conditions	14
5.05 Underground Facilities	15
5.06 Hazardous Environmental Conditions at Site	17

ARTICLE 6 – Bonds and Insurance.....	19
6.01 Performance, Payment, and Other Bonds.....	19
6.02 Insurance—General Provisions.....	19
6.03 Contractor’s Insurance	20
6.04 Owner’s Liability Insurance.....	23
6.05 Property Insurance	23
6.06 Waiver of Rights	25
6.07 Receipt and Application of Property Insurance Proceeds	26
ARTICLE 7 – Contractor’s Responsibilities	26
7.01 Supervision and Superintendence.....	26
7.02 Labor; Working Hours.....	26
7.03 Services, Materials, and Equipment	26
7.04 “Or Equals”	27
7.05 Substitutes.....	28
7.06 Concerning Subcontractors, Suppliers, and Others.....	29
7.07 Patent Fees and Royalties.....	31
7.08 Permits.....	31
7.09 Taxes	32
7.10 Laws and Regulations	32
7.11 Record Documents	32
7.12 Safety and Protection	32
7.13 Safety Representative.....	33
7.14 Hazard Communication Programs.....	34
7.15 Emergencies	34
7.16 Shop Drawings, Samples, and Other Submittals	34
7.17 Contractor’s General Warranty and Guarantee	36
7.18 Indemnification.....	37
7.19 Delegation of Professional Design Services.....	37
ARTICLE 8 – Other Work at the Site.....	38
8.01 Other Work.....	38
8.02 Coordination.....	39
8.03 Legal Relationships	39
ARTICLE 9 – Owner’s Responsibilities	40
9.01 Communications to Contractor	40
9.02 Replacement of Engineer	40
9.03 Furnish Data.....	40

9.04	Pay When Due	40
9.05	Lands and Easements; Reports, Tests, and Drawings.....	40
9.06	Insurance	40
9.07	Change Orders.....	40
9.08	Inspections, Tests, and Approvals	41
9.09	Limitations on Owner’s Responsibilities.....	41
9.10	Undisclosed Hazardous Environmental Condition	41
9.11	Evidence of Financial Arrangements	41
9.12	Safety Programs.....	41
ARTICLE 10 – Engineer’s Status During Construction		41
10.01	Owner’s Representative	41
10.02	Visits to Site	41
10.03	Project Representative	42
10.04	Rejecting Defective Work	42
10.05	Shop Drawings, Change Orders and Payments	42
10.06	Determinations for Unit Price Work.....	42
10.07	Decisions on Requirements of Contract Documents and Acceptability of Work	42
10.08	Limitations on Engineer’s Authority and Responsibilities	42
10.09	Compliance with Safety Program	43
ARTICLE 11 – Amending the Contract Documents; Changes in the Work.....		43
11.01	Amending and Supplementing Contract Documents	43
11.02	Owner-Authorized Changes in the Work.....	44
11.03	Unauthorized Changes in the Work.....	44
11.04	Change of Contract Price	44
11.05	Change of Contract Times	45
11.06	Change Proposals	45
11.07	Execution of Change Orders	46
11.08	Notification to Surety	47
ARTICLE 12 – Claims.....		47
12.01	Claims	47
ARTICLE 13 – Cost of the Work; Allowances; Unit Price Work		48
13.01	Cost of the Work.....	48
13.02	Allowances.....	50
13.03	Unit Price Work	51

ARTICLE 14 – Tests and Inspections; Correction, Removal or Acceptance of Defective Work.....	52
14.01 Access to Work	52
14.02 Tests, Inspections, and Approvals	52
14.03 Defective Work	53
14.04 Acceptance of Defective Work	53
14.05 Uncovering Work.....	53
14.06 Owner May Stop the Work.....	54
14.07 Owner May Correct Defective Work	54
ARTICLE 15 – Payments to Contractor; Set-Offs; Completion; Correction Period.....	55
15.01 Progress Payments	55
15.02 Contractor’s Warranty of Title.....	58
15.03 Substantial Completion	58
15.04 Partial Use or Occupancy.....	59
15.05 Final Inspection.....	59
15.06 Final Payment	59
15.07 Waiver of Claims	61
15.08 Correction Period.....	61
ARTICLE 16 – Suspension of Work and Termination	62
16.01 Owner May Suspend Work.....	62
16.02 Owner May Terminate for Cause	62
16.03 Owner May Terminate For Convenience.....	63
16.04 Contractor May Stop Work or Terminate.....	63
ARTICLE 17 – Final Resolution of Disputes	64
17.01 Methods and Procedures	64
ARTICLE 18 – Miscellaneous	64
18.01 Giving Notice	64
18.02 Computation of Times	64
18.03 Cumulative Remedies	64
18.04 Limitation of Damages.....	65
18.05 No Waiver	65
18.06 Survival of Obligations	65
18.07 Controlling Law	65
18.08 Headings	65

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.

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.

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.
 - 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).
 4. Foreign voluntary worker compensation (if applicable).
- B. *Commercial General Liability—Claims Covered:* Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against:
1. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees.
 2. claims for damages insured by reasonably available personal injury liability coverage.
 3. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.
- C. *Commercial General Liability—Form and Content:* Contractor's commercial liability policy shall be written on a 1996 (or later) ISO commercial general liability form (occurrence form) and include the following coverages and endorsements:
1. Products and completed operations coverage:
 - a. Such insurance shall be maintained for three years after final payment.
 - b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.
 2. Blanket contractual liability coverage, to the extent permitted by law, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.
 3. Broad form property damage coverage.
 4. Severability of interest.
 5. Underground, explosion, and collapse coverage.
 6. Personal injury coverage.
 7. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together); or CG 20 10 07 04 and CG 20 37 07 04 (together); or their equivalent.
 8. For design professional additional insureds, ISO Endorsement CG 20 32 07 04, "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.
- D. *Automobile liability:* Contractor shall purchase and maintain automobile liability insurance against claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy shall be written on an occurrence basis.
- E. *Umbrella or excess liability:* Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer's liability, commercial general liability, and automobile liability insurance described in the paragraphs above. Subject to

industry-standard exclusions, the coverage afforded shall follow form as to each and every one of the underlying policies.

- F. *Contractor's pollution liability insurance:* Contractor shall purchase and maintain a policy covering third-party injury and property damage claims, including clean-up costs, as a result of pollution conditions arising from Contractor's operations and completed operations. This insurance shall be maintained for no less than three years after final completion.
- G. *Additional insureds:* The Contractor's commercial general liability, automobile liability, umbrella or excess, and pollution liability policies shall include and list as additional insureds Owner and Engineer, and any individuals or entities identified in the Supplementary Conditions; include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds; and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis. Contractor shall obtain all necessary endorsements to support these requirements.
- H. *Contractor's professional liability insurance:* If Contractor will provide or furnish professional services under this Contract, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance shall provide protection against claims arising out of performance of professional design or related services, and caused by a negligent error, omission, or act for which the insured party is legally liable. It shall be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. If such professional design services are performed by a Subcontractor, and not by Contractor itself, then the requirements of this paragraph may be satisfied through the purchasing and maintenance of such insurance by such Subcontractor.
- I. *General provisions:* The policies of insurance required by this Paragraph 6.03 shall:
 - 1. include at least the specific coverages provided in this Article.
 - 2. be written for not less than the limits of liability provided in this Article and in the Supplementary Conditions, or required by Laws or Regulations, whichever is greater.
 - 3. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least 10 days prior written notice has been given to Contractor. Within three days of receipt of any such written notice, Contractor shall provide a copy of the notice to Owner, Engineer, and each other insured under the policy.
 - 4. remain in effect at least until final payment (and longer if expressly required in this Article) and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract Documents.
 - 5. be appropriate for the Work being performed and provide protection from claims that may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable.

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

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

7.02 Labor; Working Hours

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

7.03 Services, Materials, and Equipment

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

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

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.

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 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim shall rest with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, or both, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.
- C. *Review and Resolution*: The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim shall be stated in writing and submitted to the other party, with a copy to Engineer.
- D. *Mediation*:
 - 1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate shall stay the Claim submittal and response process.
 - 2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process shall resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim 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. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of the following paragraph.
- E. Within 30 days of Engineer's written decision under the preceding paragraph, Contractor may submit a Change Proposal, or Owner may file a Claim, seeking an adjustment in the Contract Price if:
1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement;
 2. there is no corresponding adjustment with respect to any other item of Work; and
 3. Contractor believes that it is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price, and the parties are unable to agree as to the amount of any such increase or decrease.

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.

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 stipulated in the Agreement.
- C. *Review of Applications:*
1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
 2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:
 - a. the Work has progressed to the point indicated;

- b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and
 - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
- 3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
 - a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or
 - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.
- 4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
 - a. to supervise, direct, or control the Work, or
 - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
 - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
 - d. to make any examination to ascertain how or for what purposes Contractor has used the money paid on account of the Contract Price, or
 - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
- 5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.
- 6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:
 - a. the Work is defective, requiring correction or replacement;
 - b. the Contract Price has been reduced by Change Orders;
 - c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or

- 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.

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.

SUPPLEMENTARY CONDITIONS

SUPPLEMENTARY CONDITIONS

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

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

The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added thereto.

SC-1.01.A.3. Add the following language to the end of Paragraph 1.01.A.3:

The Application for Payment form to be used on this Project is bound in the Miscellaneous Forms section.

SC-1.01.A.8. Add the following language to the end of Paragraph 1.01.A.8:

The Change Order form to be used on this Project is bound in the Miscellaneous Forms section.

SC-1.01.A.40. Add the following new subparagraph to the end of Paragraph 1.01.A.40:

- a. Substantial Completion shall include, but not be limited to, all streets open to traffic. Final Acceptance will not be made until the entire project has been completed including final cleanup and project ready for final payment.

SC-3.02.A. Add the following new paragraph immediately after Paragraph 3.02.A.2:

3. All materials used and tests made shall be judged by applicable standards of the American Society for Testing Materials (A.S.T.M.), American Association of State Highway Officials (A.A.S.H.O.), Minnesota Department of Transportation (MnDOT) and other standards applicable to the particular phase of the construction being performed.

SC-4.01.A. Delete Paragraph 4.01.A in its entirety and insert the following in its place:

- A. The Contract Times will commence to run 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 Agreement.

SC-4.03. Add the following new paragraph to Paragraph 4.03:

- B. Owner will provide construction staking as further defined in the Contract Documents.

SC-5.03. Add the following new paragraphs immediately after Paragraph 5.03.B:

- A. No reports of explorations or test of subsurface conditions at or contiguous to the site or drawings of physical conditions relating to the existing surface of subsurface structures at the site are known to Owner or were used in preparation of the drawings and specifications.

SC-5.06. Delete Paragraph 5.06.A in its entirety including subparagraphs and insert the following in its place:

- A. Engineer or Engineer's Consultants obtained, used or reviewed no specific information regarding Hazardous Environmental Conditions at the site.

SC-6.01.A. Add the following new paragraph immediately after Paragraph 6.01.A:

- 1. Bonds shall remain in effect until the end of the correction period required in Paragraph 15.08 including subparagraphs and Supplemental Conditions.

SC-6.03. Add the following new paragraphs immediately after Paragraph 6.03.J:

- K. The limits of liability for the insurance required by Paragraph 6.03 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:

- 1. Workers' Compensation, and related coverages under Paragraphs 6.03.A.1 and A.2 of the General Conditions:

- a. State: Statutory
- b. Applicable Federal (e.g., Longshoreman's): Statutory
- c. Employer's Liability:
 - Bodily injury, each accident \$ 500,000
 - Bodily injury by disease, each employee \$ 500,000
 - Bodily injury/disease aggregate \$ 500,000

- 2. Contractor's General Liability under Paragraphs 6.03.B through 6.03.C of the General Conditions:

- a. General Aggregate \$ 2,000,000
- b. Products - Completed Operations Aggregate \$ 2,000,000
- c. Personal and Advertising Injury \$ 1,000,000
- d. Each Occurrence (Bodily Injury and Property Damage) \$ 1,000,000

- e. If applicable to the Project, Contractor shall maintain railroad protective liability insurance on behalf of the Railroad, as named insured with a limit of \$4,000,000 or as required by the Railroad authority. Said coverage shall be in effect whenever Work of this project is underway within the Railroad right of way.
- 3. Automobile Liability under Paragraph 6.03.D of the General Conditions:
 - a. Combined Single Limit of \$ 1,000,000
- 4. Excess or Umbrella Liability:
 - a. Per Occurrence \$ 1,000,000
 - b. General Aggregate \$ 1,000,000
- 6. The following shall be included as additional insured in addition to any other individuals or entities identified as required additional insureds by the Contract Documents.

Engineer:

DeWild Grant Reckert and Associates Company d/b/a DGR Engineering
1302 S. Union Street
Rock Rapids, IA 51246

Owner:

City of Windom, Minnesota
PO Box 38
Windom, Minnesota 56101-0038

SC-7.02. Add the following new paragraphs immediately after Paragraph 7.02.B:

- C. It shall be specifically understood that any work relating to this contract shall not be performed on Sunday unless an emergency arises and special permission is given by the Owner.
- D. Work will be permitted on Saturday; however, involvement of the Owner's personnel will not be allowed. Saturday work must be approved by the Owner.

SC-7.06. Add the following new paragraphs immediately after Paragraph 7.06.O:

- P. The Contractor shall not award work valued at more than seventy five percent (75%) of the Contract Price to Subcontractor(s), without prior written approval of the Owner.

SC-7.06. Add the following subparagraph immediately after Paragraph 7.06.P:

- Q. Prompt payment to subcontractors.** Each subcontract under this Contract must require the Contractor to pay any subcontractor within ten days of the Contractor's receipt of payment from the Owner for undisputed services provided by the subcontractor. The subcontract agreement must require the Contractor to pay interest of 1-1/2 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 or more is \$10. For an unpaid balance of less than \$100, the prime contractor shall pay the actual penalty due to the subcontractor. A subcontractor who prevails in a civil action to collect interest penalties from a prime contractor must be awarded its costs and disbursements, including attorney's fees, incurred in bringing the action.

SC-7.09. Add the following new subparagraph to the end of Paragraph 7.09.A:

1. CONTRACTOR shall pay all sales, use and excise taxes, as required by the State of Minnesota and such taxes shall be incidental to the Work and included in the Contract Prices.

SC-9.11. Add the following new paragraph immediately after Paragraph 9.11.A:

- B.** On request of Contractor prior to the execution of any Change Order involving a significant increase in the Contract Price, Owner shall furnish to Contractor reasonable evidence that adequate financial arrangements have been made by Owner to enable Owner to fulfill the increased financial obligations to be undertaken by Owner as a result of such Change Order.

SC-9.13. Add the following new paragraph immediately after Paragraph 9.12:

- 9.13 Owner will furnish an "Owner's Site Representative" to represent Owner at the Site and assist Owner in observing the progress and quality of the Work. The authority and responsibilities of Owner's Site Representative will be as defined and described at the Preconstruction Conference (Paragraph 2.04).

SC-13.03.E. Delete Paragraph 13.03.E in its entirety and insert the following in its place:

- E.** The unit price of an item of Unit Price Work shall be subject to reevaluation and adjustment under the following conditions:
1. if the Bid price of a particular item of Unit Price Work amounts to 20 percent or more of the Contract Price and the variation in the quantity of that particular item of Unit Price Work performed by Contractor differs by more than 100 percent from the estimated quantity of such item indicated in the Agreement; and
 2. if there is no corresponding adjustment with respect to any other item of Work; and

3. if Contractor believes that Contractor has incurred additional expense as a result thereof or if Owner believes that the quantity variation entitles Owner to an adjustment in the unit price, either Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Article 10 if the parties are unable to agree as to the effect of any such variations in the quantity of Unit Price Work performed.

SC-14.02. Add the following new paragraphs immediately after Paragraph 14.02.F:

- G. The Contractor shall furnish at his own expense such materials and facilities as may be required by the Engineer for inspection. This shall not include the expense of the inspector or representative of the Engineer.
- H. Tests for concrete ingredient materials, concrete mix designs and copies of test reports must be furnished by an approved testing laboratory at the Contractor's expense.
- I. Tests for concrete strength using cylinders or beams and passing soil density tests made on the project will be furnished by the Owner. All costs of breaking test cylinders or beams shall be at the Owner's expense.
- J. Decision as to the quality of materials and workmanship shall rest with the Engineer and any portion of the work rejected by the Engineer shall be replaced by the Contractor with approved work at no additional cost to the Owner.
- K. Any inspections, tests, or approvals, or waiver of tests will in no way relieve the Contractor of full responsibility for meeting the guaranteed performance and requirements of the Contract.

SC-15.01.B.3. Add the following language at the end of Paragraph 15.01.B.3:

No payments will be made that would deplete the retainage, place in escrow any funds that are required for retainage, or invest the retainage for the benefit of the Contractor.

SC-15.01.D.1. Delete Paragraph 15.01.D.1 in its entirety and insert the following in its place:

1. The Application for Payment with Engineer's recommendations will be presented to the Owner for consideration. If the Owner finds the Application for Payment acceptable, the recommended amount less any reduction under the provisions of Paragraph 15.01.E will become due ten days after the Application for Payment is approved by the Owner, and when due will be paid by Owner to Contractor.

SC-15.08.F. Add the following subparagraph to paragraph 15.08:

- F. Contractor shall provide a correction period (warranty) of two (2) years from date of substantial completion for the following items:

1. All materials and workmanship.

SC-17.01. Add the following subparagraphs to Paragraph 17.01:

- C. If Owner or Contractor have a disputed matter per Paragraph 17.01.A, the following process shall apply:
 1. Within 30 days of the submittal of such claim, Owner and Contractor shall meet and confer regarding the Claim. A good-faith effort to negotiate resolution shall be made by both parties.
 2. If the negotiations contemplated by Paragraph SC-17.01.C.1 are unsuccessful, management representatives of Owner and Contractor at least one tier above the individuals who met under SC 17.01.C.1 shall meet, confer, and negotiate within 30 days of the closure of the unsuccessful negotiations.
 3. If the Claim is not resolved by negotiation, Engineer's decision regarding Change Proposals or other requests for decisions shall become final and binding 30 days after termination of the negotiations unless, within that time period, Owner or Contractor:
 - a. gives to the other party written notice of intent to submit the Claim to a court of competent jurisdiction, or
 - b. agrees with the other party to submit the Claim to another dispute resolution process.
 4. Notwithstanding any applicable statute of limitations, a party giving notice under Paragraph SC 17.01.C.3.a shall commence an action on the Claim within one year of giving such notice. Failure to do so shall result in the Claim being time-barred and Engineer's action or denial shall become final and binding.

* * * END OF SECTION * * *

SPECIAL PROVISIONS

DIVISION G – GENERAL REQUIREMENTS

SECTION 01390

CONSTRUCTION SURVEY STAKING BY ENGINEER

PART 1 - GENERAL

1.01 SCOPE:

- A. The work covered by this Section of the Project Manual shall include furnishing all horizontal alignment and vertical elevations by the Engineer necessary to complete the installation of manholes, sanitary sewer, storm sewer, water main and street paving.

1.02 RELATED WORK SPECIFIED ELSEWHERE:

- A. Storm Sewer: Section 02571.
- B. Plastic Pipe: Section 15064.
- C. Plastic Pipe: Section 15065.
- D. Precast Concrete Manholes: Section 03440.

PART 2 - PRODUCTS - None

PART 3 - EXECUTION

3.01 STAKING:

- A. The Contractor shall notify the Engineer of all staking needs a minimum of one (1) week prior to the start of construction.
- B. For street paving, a centerline stake at 100 foot intervals will be set for rough grading when the finish grade differs more than 2 feet from existing ground. Offset line and grade stakes will be set at 25-foot intervals on each side of the specified street paving or back of curb width.
- C. For the storm sewers, the Engineer will set line and grade stakes on an offset line for the laser beam method of construction consisting of two (2) line stakes and one (1) grade stake at each structure. The Contractor shall make his own arrangements with the Engineer for any additional staking.

SECTION 01390

- D. For sanitary sewer, the Engineer will set line and grade stakes for the laser beam method of construction consisting of two (2) line stakes and two (2) grade stakes at each manhole. The Contractor shall make his own arrangements with the Engineer for any additional staking.
- E. For water main, the location for fire hydrants and bends will be staked. The depth will only be staked when vertical clearance with other utilities is critical and the finished street surface elevation has not been staked.
- F. The Contractor shall protect the stakes from unnecessary disturbance until permission is given to remove same. Replacement of stakes which have been negligently damaged or removed by the Contractor shall be made by the Engineer and the cost of said replacement paid for by the Contractor.
- G. It shall be the Contractor's responsibility to periodically check the stakes for accuracy of alignment and grade as construction proceeds.
- H. The cost of initial construction staking as described in this section will be paid for by the Owner. Additional staking or replacement of stakes negligently damaged or removed by the Contractor will be the Contractor's responsibility.
- I. Additional staking not described above shall be the Contractor's responsibility and expense.

* * * END OF SECTION * * *

SECTION 01500

COORDINATION OF SPECIFICATIONS, PLANS,
AND SPECIAL PROVISIONS

PART 1 - GENERAL

1.01 SCOPE:

- A. In case of discrepancy between various items included in the Contract Documents, the items shall prevail, or govern, in the following order:
1. Change Orders
 2. Addenda
 3. Proposal and Contract form
 4. Plans, including all plan notes
 5. Technical Specifications/Special Provisions
 6. Supplementary Conditions
 7. General Conditions
 8. LTAP Local Road Specifications for the State of Minnesota
 9. Minnesota Department of Transportation Standard Specifications for Construction.

* * * END OF SECTION * * *

DIVISION U - UTILITIES

SECTION 02221

TRENCHING, BACKFILLING, AND COMPACTING

PART 1 - GENERAL

1.01 GENERAL:

- A. Work included in this Section involves the trenching (open trench), laying of pipe, backfilling, compacting, disposition of excess excavated material, sedimentation and siltation control, and clean-up.

1.02 QUALITY ASSURANCE:

- A. When requested by the Engineer, the Contractor shall excavate and expose the pipe previously laid at any point.

1.03 PAYMENT:

- A. Trenching, backfilling and compacting, disposition of excess excavated material, sedimentation and siltation control, and clean-up are considered incidental Work with no separate measurement and payment to be made.

PART 2 - PRODUCTS

2.01 TRENCHING METHODS:

- A. Open trenching shall be done with a ladder or wheel type trencher where possible. The use of other type equipment such as a backhoe or excavator will be permitted for 6" and larger diameter pipe when conditions permit or necessitate and by authorization from the Engineer or Resident Project Representative.
- B. Trenching work shall include the removal, handling, and disposal of all materials so removed and shall further include:
 - 1. Stripping of the trench and other areas, including trees, stumps, brush, debris, and roots within the construction limits.
 - 2. Removal of pavement as required.
 - 3. Removal of debris and structures or portions thereof.
 - 4. Sheet piling, shoring, bracing, and protection of adjacent property, trees, and structures.

SECTION 02221

5. Protection or repair/replacement (if required) of existing pipelines, electric lines, buried telephone cables, drains, field drain tiles, conduits, culverts, sewers, poles, road signs, overhead utilities, fences, etc.
6. Removal of rocks encountered greater than twelve (12) inches in diameter.
7. Preparation of subgrades, pipe embedment, backfilling, and disposal of excess excavation and other materials.
8. Assurance that pipe is being installed at proper depth and debris is not entering pipe whenever groundwater is encountered.

2.02 DEWATERING:

- A. Do all work in dry conditions; do not install pipes on excessively wet soil.
- B. Submit dewatering and bypass pumping methods to Engineer/Owner for review.
- C. Install dewatering system approximate for the soil conditions.
- D. Maintain water levels sufficiently below the bottom of trench excavation to prevent upward seepage.
- E. Provide for handling water encountered during construction.
 1. Prevent surface water from flowing into excavation. Remove water as it accumulates.
 2. Avoid using sanitary sewers for disposal of ground water. Some ground water flow into the sanitary sewer is expected. Discharging water into storm sewers requires Engineer's/Owner's approval. Do not discharge sanitary sewer water into the storm sewer system.
 3. Do not discharge water onto adjacent property without property owner's approval.
- F. Backfill pipes prior to stopping dewatering operations.
- G. All dewatering shall be incidental if a bid item is not provided.
- H. Dewatering discharge shall be filtered and treated according to MPCA Standards as required in the project SWPPP permit.
- I. Special Rock bedding placed due to inadequate dewatering will not be reimbursed for payment.

SECTION 02221

PART 3 - EXECUTION

3.01 TRENCHING:

A. Open Trenching:

1. Place excavated material suitable for backfilling in an orderly manner sufficiently away from banks of excavation to avoid overloading and prevent slides or cave-ins.
 - a. Keep banks as nearly vertical as practicable while complying with all safety requirements.
 - b. Assure that all shoring and sheeting required complies with applicable local, state, and federal regulations.
2. Trenches shall be of sufficient width to provide ample room for workmen engaged in the handling of pipe and making the joints. Trench shall not be wider than 12 inches on either side of pipe.
3. Minimum pipe cover for water main shall be:
 - a. Eighty-four (84) inches for all pipe except as modified below as measured from original ground level to nearest surface of pipe.
 - b. Where the pipe elevation is determined by minimum depth only, excavation at all points shall be of sufficient depths to properly grade the pipe on tangents and vertical curves dictated by the minimum bending radius of the pipe recommended by the manufacturer.
4. Accurately grade trench bottom to provide uniform bearing and support for each pipe section.
 - a. Backfill unauthorized over depth excavation to the proper grade with tamped backfill.
 - b. Protect trench bottom from frost and freezing.
5. The Contractor shall excavate under existing utilities as required to maintain or exceed minimum cover.

SECTION 02221

3.02 LAYING OF PIPE - OPEN TRENCH:

A. General:

1. Only competent and experienced individuals at laying pipe shall be employed on this phase of work. Any incompetent individuals or work observed by the Engineer shall be replaced at his request.
2. Perform dewatering operations as required.
3. Remove all unsuitable bedding material.
4. All material including pipe, fittings, valves, etc., shall be placed with care. Under no circumstances shall material be dumped or dropped into the trench.
5. Pipe shall be thoroughly cleaned of all foreign material before lowering into the trench and shall be kept clean during all laying operations.
6. Pipe shall lay on suitable soil at every point along its length.

B. Installation:

1. See appropriate pipe section of Specifications.

3.03 BACKFILLING AND COMPACTING - OPEN TRENCH:

A. General:

1. All backfilling shall be carefully done in a manner that will not harm the pipe and be satisfactory to the Engineer.
2. Backfilling in yards or any landscaped area shall be done with rubber tired equipment.

B. Initial Backfill of Pipe:

1. Placing of initial backfill shall be done by hand or a mechanical method approved by the Engineer.
 - a. The method selected and approved shall be such that material is not dropped from the top of the trench.
 - b. Deposit selected earth or sand at the sides of the pipe and to a depth of not less than twelve (12) inches above the top of the pipe.

SECTION 02221

2. Backfill material to be utilized for mechanical methods shall contain no stones which may damage the pipe and shall be free from large clods and frozen material.

C. Final Backfill and Compaction of Trenches:

1. Backfilling and compacting shall be completed immediately after placement of the pipe.
 - a. Backfill shall be free from boulders, frozen clods, large roots, excessive sod or other vegetation.
 - b. The backfill material shall be placed in such a manner that it is not dropped from the top of trench onto the unprotected pipe.
 - c. Hand tamp backfill under and around pipes to 6 inches above top of pipe in lifts not exceeding 4 inch loose thickness.
 - d. Do not disturb joint alignment or grade of pipe during backfill operation.
 - e. Continue backfill and compaction process in 6 inch lifts.
 - f. Backfill and compact remaining trench. Moisten, aerate or dry backfill material and tamp as required to assure no backfill settlement in trenches under paved or graveled surfaces or other areas subject to vehicular traffic. Backfill settlement in trenches under sodded areas shall not exceed 2 percent of the trench depth.
 - (1) Where backfill settlement exceeding these specification requirements occurs during the contract guarantee periods, the Contractor shall remove street surfaces, remove and replace backfill material, and replace street surfaces as required to meet the requirements of this specification section.
 - (2) Corrective work required shall be performed at the Contractor's expense.
 - g. Standard soil density tests may be run at all installations. **Backfill shall be compacted to a minimum of 95% of Standard Proctor Density and a minimum of 98 percent of Standard Proctor Density as determined by ASTM D698 for the top foot where the trench is beneath a street, driveway, parking lot, sidewalk or other traveled surface. Moisture content shall be -4% to -1% of optimum. A minimum density of 95 percent of Standard Proctor**

SECTION 02221

(ASTM 698) shall be provided beneath grassed or untraveled areas. Moisture content shall be -4% to -1% of optimum.

- (1) All tests that initially meet the specifications shall be paid for by the **Contractor**.
 - (2) All tests that fail to meet the specifications and all subsequent retesting costs including additional engineering costs shall be paid for by the Contractor.
 - (3) Contractor shall be responsible for scheduling the work, notifying the testing laboratory and engineer, and allowing adequate time for all tests.
 - (4) Tests shall be taken during the compaction process, not in a single trip and pot holed.
- h. Conduct backfill operations so that no more than 100 feet of trench will be left open at any one time.
 - i. Remove and dispose of excess or unsuitable backfill material, at no expense to the Owner.
2. Gravel and paved surfaces disturbed shall be replaced or repaired immediately upon completion of the Work.

3.04 CLEAN-UP:

A. Initial Clean-Up:

1. The accomplishment of initial clean-up by the Contractor shall be made daily and shall be considered as a factor of prime importance in the completion of the project.
 - a. The backfill requirements shall be strictly adhered to as specified herein.
 - b. Any excavated material not meeting the backfill provisions as herein specified and/or inconsistent with surrounding surface material shall be removed from the site at no expense to the Owner.
2. Initial clean-up must be completed as a prerequisite to Substantial Completion. **Prior to the end of day's construction, remove and sweep any trench backfill material that is on existing paved streets, incidental.**

SECTION 02221

B. Final Clean-Up:

1. Final clean-up and seeding shall be completed prior to final inspection and final acceptance and shall include as a minimum:
 - a. Restoration of the specified mounds should backfill settlement occur between initial and final clean-up.
 - b. At least two (2) passes with a small tandem disk followed by a thorough dragging in uncultivated areas such as public right-of-way (road ditches) and pasture ground.
 - c. All 2" and larger rock at the surface and all other materials not consistent with the surrounding ground surface shall be stockpiled and removed by the Contractor.
 - d. All backfill around structures and through maintained yards/lawns shall be left in such a manner that the land owner may re-establish his yard or lawn.
2. The Contractor shall notify the Engineer of his request for final inspection for the project or part of the project if so sectionalized by the Engineer.
 - a. The Engineer, Owner, Contractor, and a representative of any applicable governing agency shall be present for the inspection.
 - b. The Engineer shall have the authorization for the on-sight acceptance of the Contractor's clean-up.
 - c. Any expense involved on the part of the Engineer to make return inspections due to the Contractor's presenting the project in a known unacceptable manner shall be compensated for by the Contractor prior to final payment.
3. Final repair of backfill settlement shall be accomplished prior to the end of the warranty period.
 - a. Backfill shall be allowed to settle over one growing season prior to final repair.
 - b. The Contractor shall begin final repair not less than 20 calendar days following the Owner's notification that job conditions are ready for final repair, and shall complete final repair not more than 30 calendar days after beginning.

SECTION 02221

- c. If the Contractor is unable to mobilize sufficient equipment to the site to accomplish the work in a timely manner, the Owner may notify the Contractor of Owner's intent to complete final repair. If the Contractor does not respond with additional equipment within 7 days, the Owner may proceed with final repair and bill the costs thereof to the Contractor and/or Bonding Company.

* * * END OF SECTION * * *

SECTION 03440
PRECAST CONCRETE MANHOLES

PART 1 - GENERAL

1.01 GENERAL:

- A. Related requirements specified elsewhere:
 - 1. Shop Drawings, Project Data, and Samples: Section 01340.
 - 2. Trenching, Backfilling, and Compacting: Section 02221.
 - 3. Plastic Pipe: Section 15064. (water main)
 - 4. Plastic Pipe: Section 15065. (sanitary sewer)

PART 2 - PRODUCTS

2.01 MANHOLE SECTIONS:

- A. Precast reinforced concrete risers, tops, and adjustment rings, ASTM C478, minimum diameter 48 inches and eccentric cone tops unless otherwise noted on the Drawings.

2.02 RING AND COVER:

- A. Neenah R-1668 machined, non-vented, non-rocking cover, or approved equal. Water manhole shall have the word "WATER" on the lid. Sanitary Sewer manhole shall have the word "SEWER" on the lid. Storm sewer manhole shall have the word "STORM" on the lid.
- B. Provide and install Cretex external chimney seal on all project castings.

2.03 STEPS:

- A. Polypropylene plastic with ½" Grade 60 steel core reinforcement.

PART 3 - EXECUTION

3.01 INVERT CONSTRUCTION OPTIONS:

- A. Half-tile laid in concrete of manhole base.

SECTION 03440

- B. Lay full tile through manhole, pour base, allow concrete to set and break or saw out top half of tile.
- C. Hand form smooth semi-circular invert of same size as pipe in concrete manhole base. Carry edge to at least level with the top of pipe.
- D. Regardless of the invert construction option used, all water shall freely drain from the manhole.

3.02 BASE CONSTRUCTION:

- A. Bases may be poured-in-place or integral with bottom manhole section. Groundwater shall be kept below bottom of base for 24 hours following pouring of base. Base to be minimum of 6 inches in thickness - diameter of poured-in-place shall be 12 inches greater than barrel O.D.
- B. Where soil conditions are not adequate to support the manhole without settlement, the unsuitable soils shall be over-excavated and replaced with compacted granular or rock fill material on which the bases shall be constructed.

3.03 CHANGES IN FLOW DIRECTION:

- A. Make smooth, semi-circular curve of as large a radius as practical.

3.04 JOINT CONSTRUCTION:

- A. Construct joints between precast concrete manhole wall sections with Tylox rubber gaskets, Ram-Nek plastic gaskets or waterproofing mastic to insure a watertight joint. Additional joint material or gaskets may be required to produce a watertight manhole.
- B. Manhole section lifting holes/inserts shall not extend through walls of manhole section.
- C. Completely fill manhole section lifting holes to achieve watertight construction.

3.05 PIPE CONNECTION TO MANHOLE:

- A. Install flexible, watertight connection for joining pipe to manhole as specified.

3.06 ADJUSTMENT RINGS:

- A. Finish manholes below frame and cover with **8 inches of removable polybutylene** rings to facilitate future adjustment.
- B. Caulk to secure polybutylene rings and frame in place.

SECTION 03440

3.07 EXTERIOR WATERPROOFING

- A. Thoroughly coat exterior surfaces of sanitary sewer manholes with two coats of a heavy bodied tar or bituminous paint including all pores, chips and voids to prevent manhole section from moisture penetration.
- B. Provide and install Cretex external chimney seal on all project castings (new and existing).

* * * END OF SECTION * * *

SECTION 15065

PLASTIC PIPE (Sewer Only)

PART 1 - GENERAL

1.01 SCOPE:

- A. Related requirements specified elsewhere:

- 1. Soil Testing: 312326

1.02 QUALITY ASSURANCE:

- A. Provide manufacturer's certificate that materials meet or exceed minimum requirements as specified.

1.03 SUBMITTALS:

- A. Certificates: Submit manufacturer's certificates of conformance.
- B. Test Reports: Submit copies of test reports.
- C. Manufacturer's Recommendations: Submit manufacturer's gasket lubricant recommendations for review of Engineer.

1.04 PRODUCT DELIVERY, STORAGE, AND HANDLING:

- A. Exercise care in transporting and handling to avoid damage to pipe and fittings.
- B. Pipe ends shall be covered during delivery from the manufacturer to the job site.
- C. Store materials on site in enclosure or under protective coverings.
- D. Do not store materials directly on the ground.
- E. Keep inside of pipes and fittings free of dirt and debris.
- F. Do not drop pipe or fittings.

PART 2 - PRODUCTS

2.01 PIPE:

- A. General:

SECTION 15065

1. The pipe shall be precision extruded from new polyvinyl chloride material and shall be homogeneous throughout and free from cracks, holes, foreign inclusions or other defects. The pipe shall be extruded in strict accordance with the raw material manufacturer's recommendations and specifications.
2. Pipe shall be marked to indicate nominal pipe size, material code designation, standard dimension ratio, pressure rating, manufacturer's name or trademark, National Sanitation Foundation seal and appropriate ASTM or AWWA designation numbers.
3. The PVC pipe shall be supplied in standard laying lengths of 20 or 40 feet. However, 40 feet or longer lengths of pipe will be approved only upon adequate information the Installer has equipment capable of fully supporting the pipe while being transported and distributed over the project.
4. Rubber gasketing shall conform to ASTM D1869.

B. Polyvinyl Chloride Pipe for Gravity Sanitary Sewers:

NOTICE: PVC sewer pipe shall not be used in line segments (manhole) where the depth of bury at any point, exceeds fifteen (15) feet.

1. Gasketed PVC pipe for gravity storm sewer roof drain.
2. Gasketed PVC pipe for house service connections and branch lines.
3. Pipe and fittings shall meet requirement of ASTM D3034, but shall conform to a minimum pipe nominal diameter ratio to wall thickness (SDR) of 35 for the pipe and all fittings shall be heavy wall type. Type PSM (XH) (Poly Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
4. Joints shall be gasketed, push-on type in accordance with ASTM D3212.
5. Material used to produce pipe and fittings shall conform to ASTM D1784 for Rigid Poly (vinyl chloride) compounds and Chlorinated Poly (vinyl chloride Compounds).
6. Rings for gasketing shall be locked-in rubber sealing rings and shall conform to ASTM D1869.
7. Pipe shall be supplied in standard laying lengths of 12.5 and 20 feet.
8. Wyes shall be Heavy Wall and shall conform to ASTM F1336.

SECTION 15065

2.02 COUPLINGS:

A. Use gasket joint coupling.

1. Couplings shall be furnished by the pipe manufacturer and shall accommodate the pipe for which they are to be used.
2. Couplings shall have a minimum pressure rating equal to that of the pipe.
3. Couplings used shall be twin gasketed coupling with a positive stop in the center that will automatically position the pipe ends within the coupling. Single gasket couplings welded to one end of the pipe will not be accepted.
4. Pipe that has an integral bell, designed to be at least as strong as the pipe wall, as a part of the pipe with a single gasket shall be approved.
5. All couplings or bells shall have a seating depth of at least one diameter of the pipe.
6. The male ends of the pipe shall be beveled at the factory for ease of entry into the coupling and shall have a ring painted around the end in such a manner as to allow field checking of the setting depth of pipe in the socket.

2.03 FITTINGS:

A. PVC Fittings:

1. Fittings shall be furnished or approved by the pipe manufacturer and shall accommodate the pipe for which they are to be used.
2. Fittings shall have wall thickness no less than that for the specified pipe and shall have a minimum pressure rating equal to that of the pipe.
3. The fittings shall be socket type with the same gasket design as used on the pipe coupling. The socket depths shall meet all of the requirements listed for the adjoining pipe.

2.04 PIPE CONNECTION TO MANHOLE:

A. Provide a flexible, watertight connection joining pipe to manhole. Connection shall be one of the following:

1. A-Lok or A-Lok X-Cel as manufactured by A-Lok Products, Inc.
2. Press Seal Boots or equal as manufactured by Press-Seal Gasket Corporation.

SECTION 15065

3. Link-Seal or equal as manufactured by Thunderline Corporation.
4. Lock Joint or equal Flexible Manhole Sleeve as manufactured by Interpace Corporation.
5. An equivalent flexible, watertight connection method may be used upon prior approval by the Engineer.

2.05 TRACER WIRE:

- A. **Tracer wire is required on all roof drain lines (incidental to storm sewer). Tracer wire system shall be tested for electrical continuity in the presence of the Owner prior to final acceptance. Repair any discontinuities.**
- B. Tracer Wire Terminal Box shall be installed at ground level above each connection to the existing roof drain and shall be Copperhead Snake Pit Lite Duty Access Point with LD14BTP Lid or Copperhead Snake Pit Concrete / Driveway Access Point with LD14BTP Lid, type to be determined by the Contractor in the field.

2.06 PIPE BEDDING:

- A. Granular Bedding with the following gradation (Incidental to Pipe):

<u>Sieve</u>	<u>Percent Passing</u>
1-1/2"	100%
1"	95 to 100%
1/2"	25 to 60%
No. 4	0 to 10%
No. 8	0 to 5%

PART 3 - EXECUTION

3.01 INSPECTION:

- A. Examine areas to receive piping for:
 1. Defects that adversely affect execution and quality of work.
 2. Deviations beyond allowable tolerances for piping clearances.
- B. Start work only when conditions are corrected satisfactorily.

SECTION 15065

3.02 INSTALLATION:

A. Workmanship:

1. Examine pipe and fittings before installation and assure no defective materials are incorporated.
2. Keep inside of pipe and fittings free of dirt and debris.
3. Cut pipe in a neat workmanlike manner without damage to pipe.

B. Placement of Gravity Roof Drain Lines:

1. Each pipe shall be laid true to line and grade by use of laser beam.
2. Commence pipe laying at lowest point, with spigot ends pointing in the direction of flow.
3. Lay piping on compacted granular material bed for entire length of trench. Assure bedding conditions equal to Class B(b) of ASCE Manual No. 37, 1969, and bedding materials equal to Class II of ASTM D2321.
 - a. Class II bedding materials - coarse sands and gravels with maximum particle size of 2-½ inches.
 - b. See Standard Drawings for Class B(b) bedding conditions.
4. Employ partial backfilling and cradling to hold pipe in secure position during backfilling operations.
5. Compression Joint Installation:
 - a. Clean hub and spigot.
 - b. Apply joint lubricant to spigot and inside of hub.
 - c. Drive spigot into hub with pulling tool or suitable device.
6. Solvent weld water stops to outside of PVC pipe at points where pipe penetrates concrete manholes prior to cementing space between outside of pipe and manhole wall.
7. Commence pipe laying at lowest point, with spigot ends pointing in the direction of flow.

SECTION 15065

8. The subgrade upon which the pipe is placed shall consist of materials suitable for supporting the pipe without excessive settlement or stress development.
9. Place the pipe and fittings in the trench with care; under no circumstances shall the pipe or other materials be dropped into the trench. Pipe shall lay on trench bottom at every point along its length except for bell holes. The bottom of the trench shall be free from rocks, clods, or other sharp-edged objects.
10. The Contractor shall verify the size, type, and appropriate fitting necessary prior to completing the tie-in to existing pipe. All costs in exploratory digging, fittings to match existing, and cleaning the existing pipe are incidental to the applicable bid item.
11. At times when pipe laying is not in progress, the open ends of the pipe shall be closed by a watertight plug or other suitable means to prevent the ingress of ground water and other foreign materials. This stipulation shall apply during noon hour as well as overnight. If water is in the trench, the seal shall remain in place until the trench is pumped dry.
12. All service wyes, tees, and lines shall be capped with a watertight plug to keep the lines clean. All watertight plugs shall be in accordance with the manufacturer's recommendation for materials, size and watertight installation.
13. Backfill the trench as per Section 02221.

3.03 TESTING:

A. Trench Compaction Testing:

1. Soil Testing: 312326

* * * END OF SECTION * * *

DIVISION S – STREETS
(Pavement)

SECTION 033000

PCC PAVEMENT

PART 1 - GENERAL

- A. The PCC pavement shall be constructed in accordance with LTAP Local Road Specifications for the State of Minnesota.
- B. The GENERAL, SUPPLEMENTAL, and other CONDITIONS of the Contract and the GENERAL REQUIREMENTS are hereby made part of this Section.
- C. Material batching requirements intended adhere to MnDOT 3F32 for slipform paving and 3F52 for handwork, rectify and inconsistencies with the Engineer during the shop drawing review process.

PART 2 - PRODUCTS

2.01 PORTLAND CEMENT

Shall be Type I and conform to the requirements of ASTM C150. Cement which has been certified by the producer to comply with the above test requirements may be accepted without further testing if the cement is used within 90 days of the date of testing. At the option of the Engineer, all sampling and retesting of cement will be conducted by an approved commercial testing firm at the Contractor's expense.

The Contractor or ready-mix supplier shall provide suitable means for storing and protecting the cement against dampness. Cement that for any reason has become partially set or that contains lumps or caked cement shall be rejected.

Cement produced outside the United States shall not be used unless written certification from an independent testing laboratory is submitted that it conforms to ASTM C150.

2.02 FINE AGGREGATE

Fine aggregate shall consist of sand conforming to the following requirements and subject to the approval of the Engineer. Sand shall be composed of clean, hard, durable, uncoated pebbles free from injurious amounts of clay, dust coal, soft or flaky particles, loam, shale, alkali, organic matter or other deleterious material. Fine aggregate for concrete pavement shall conform to MnDOT Standard Specification (2016) Section 3126.

SECTION 033000

Gradation:

<u>Sieve Designation</u> <u>U.S. Std. Square Mesh</u>	<u>Percentage Passing</u> <u>by Weight</u>
3/8"	100
No. 4	95-100
No. 8	80-100
No. 200	0-2.5

When fine aggregate is sieved through the following numbered sieves, 4, 8, 16, 30, 50 and 100, not more than 40 percent shall pass one sieve and be retained on the sieve with the next higher number.

Percent by weight of clay lumps not more than 1.0. Fineness modules not less than 2.3 nor greater than 2.9.

2.03 COARSE AGGREGATE

Coarse aggregate shall consist of either crushed stone, crushed gravel, gravel, or a combination thereof. Be clean, hard, unweathered, and uncoated. Be generally spherical or cubical in shape. Contain no vegetable matter. Be reasonably free from soft, friable, thin or elongated pieces. Los Angeles Abrasion Test loss not more than 50.0 percent. Absorption not more than 3.0 percent. Deleterious materials in the coarse aggregate shall not exceed the following by weight:

Particle pass No. 200 sieve	1.5%
Soft fragments	2.0%
Clay lumps (ASTM C142)	0.5%
Removed by decantation (ASTM C177)	1.0%
Chert which will disintegrate in 5 cycles of soundness test	1.0%

Gradation:

<u>Sieve Designation</u> <u>U.S. Std. Square Mesh</u>	<u>Percentage Passing</u> <u>by Weight</u>
1"	100
3/4"	95-100
3/8"	20- 55
No. 4	0- 10

Any material that does not come within the limits herein specified shall be used only upon the written order of the Engineer. Coarse aggregate shall be Class A, **crushed quartzite**.

SECTION 033000

Aggregate shall be measured by weight. Batch weight shall be based on dry materials and shall be the required weights of dry materials plus the total weight of moisture (both absorbed and surface) contained in the aggregate. The Contractor shall provide two stockpiles for each class of aggregate. Aggregates shall not be transferred to the batch bins until they have dried on the plant site for 24 hours.

2.04 CHEMICAL ADMIXTURES

Air Entrainment: Air entraining agents shall conform to ASTM C260. The total air content of unconsolidated concrete shall be within the limits of 6 percent to 8.5 percent by volume.

Water Reducer: Water-reducing, retarding, and accelerating admixtures shall conform to ASTM C494. When one or more of the above mixtures is approved, a design mix must be prepared by a testing laboratory approved by the Engineer before the concrete mix is incorporated into the project. Any approved water-reducing agent cannot reduce the cement content by more than 5 percent.

Fly Ash: Fly ash shall conform to ASTM C618, Type C, when use is approved by the Engineer.

The addition of fly ash shall not reduce the air content of the concrete. Additional air entraining agent may need to be added to meet the specified air content. Refer to Minnesota Department of Transportation Standard Specifications Section 3115.

2.05 CONCRETE READY-MIX PROPORTIONS:

Concrete shall develop a minimum 28 day strength of 4,500 psi in compression. In general the following proportions shall apply:

- | | | |
|----|----------------------------------|---|
| 1. | Cement, per cubic yard | 624 lb. |
| 2. | Total water-cement-ratio | Maximum 0.42 |
| 3. | Fine aggregate | 50% |
| 4. | Coarse aggregate | 50% |
| 5. | Air content by volume | 6% - 8.5% |
| 6. | Water reducer | No reduction of cement content |
| 7. | Maximum allowable slump - inches | Not less than 1/2" or more than 3" for machine-finish using fixed forms; 2" max. for slip form; and 4" for hand finish. |

SECTION 033000

Contractor to submit samples of cement, admixtures, and aggregate to the testing firm for trial batch design which will produce results within the specified limits. Contractor to pay all costs.

The following test procedures shall be followed for all concrete tests.

- | | | |
|----|--|-----------|
| 1. | Making and curing laboratory specimens | ASTM C192 |
| 2. | Making and curing field specimens | ASTM C31 |
| 3. | Compressive strength | ASTM C39 |
| 4. | Flexural strength | ASTM C78 |
| 5. | Slump test | ASTM C143 |

Measurement of Ingredients:

1. Cement shall be measured by weight.
2. Water shall be measured by weight or volume and one gallon of water shall be equivalent to 8.34 pounds.
3. Powdered admixtures shall be measured by weight and paste or liquid admixtures shall be measured by weight or volume.
4. Aggregate shall be measured by weight. Batch weight shall be based on dry materials and shall be the required weights of dry materials plus the total weight of moisture (both absorbed and surface) contained in the aggregate.

PART 3 – EXECUTION

3.01 PAVEMENT JOINTS:

Joints shall be placed and finished as shown on the Drawings or as directed by the Engineer. All joints shall be perpendicular or parallel to the finished pavement edge, except where special jointing arrangements are required. Finished surfaces of adjacent slabs shall not vary from a straightedge laid across the joint by more than 1/8 inch. Joints in abutting pavements shall not be staggered. Unless specifically permitted by the Engineer joints shall be located as shown on the standard details.

Dowel Bars: Dowel bars shall new deformed billet steel, ASTM A615-72, grade 40 and conform to the requirements of MnDOT Standard Specifications, Section 3302, epoxy coated.

SECTION 033000

Contraction Joints: Extend joints entirely across pavement. Sawing of the joints at specified intervals shall begin as soon as the concrete has hardened sufficiently to permit sawing without excessive raveling, usually 4 to 24 hours. All joints shall be sawed before uncontrolled shrinkage cracks occur. All sawed joints shall have a depth equal to 1/3 of the slab thickness.

Construction Joints: Shall be installed where shown on Drawings or as directed by Engineer. All construction joints shall be edged with a grooving tool of sufficient width and depth to receive and retain joint sealing material. All construction joints shall contain 30" epoxy coated pins at 30" spacing each way.

Transverse Construction Joints: Locate where concrete placement has stopped long enough for concrete to harden and at end of day's work. Provide bulkhead with holes for required steel reinforcing bars. All construction joints shall contain 30" epoxy coated pins at 30" spacing each way.

Expansion Joints: Expansion joints shall be prepared and placed as indicated on the standard details. The expansion joint filler shall be continuous from form to form, shaped to the subgrade and to the keyway along the form. The expansion joint filler shall be held in a vertical position. Finished joints shall not deviate in horizontal alignment more than 1/4 inch from a straight line.

Sealing Joints: Joint Sealing Material shall be elastomeric sealing compound. All joints and shrinkage cracks which may occasionally occur shall be filled with approved sealing material. Before sealing, each joint shall be cleaned of foreign material, including curing compound by sandblasting, joint faces cleaned and surface-dry when seal is applied. The joints shall be filled immediately following the curing period or as soon thereafter as weather conditions permit, or as directed by the Engineer. Sealing material to be heated to temperature specified by manufacturer with temperature maintained during pouring period.

3.02 CONCRETE TESTING:

The Contractor will be required to coordinate preparation and arrange for the transportation of compressive strength cylinders to the testing laboratory. The Owner will pay for cylinder molds and transportation costs. Cost of protecting cylinders prior to shipment to be included in unit price for concrete paving. The Owner will be responsible for cost of cylinder testing at the testing laboratory. The Owners representative shall be responsible for making three representative cylinder samples for each 250 cubic yards of pavement placed. The Owner will have these cylinders tested at 7 days and 28 days.

SECTION 033000

3.03 PAVEMENT PROTECTION:

The Contractor shall protect the pavement against all damage prior to final acceptance of the work by the Owner. Traffic shall be excluded from the pavement by erecting and maintaining barricades and signs until the concrete is at least 14 days old, or for a longer period if so directed by the Engineer.

The concrete finishing machine, and similar equipment may be permitted to ride upon the edges of previously constructed slabs provided the concrete is more than 72 hours old and has attained a minimum flexural strength of 500 pounds per square inch and provided further, that adequate means are employed to prevent damage to the slab edges.

Sufficient burlap, canvas or other approved material shall be kept at hand at all times to prevent fresh concrete from being damaged by sudden showers or rainfall.

Failure to properly protect unhardened concrete will constitute cause for the removal and replacement of defective pavement at the Contractor's expense.

The Contractor shall also, at his own expense, protect fresh pavement surfaces that may be damaged from pedestrians, bicycles, malicious mischief and similar occurrences, until the pavement surface has hardened.

Any pavement surfaces which are damaged shall be removed and replaced, or repaired to the Engineer's satisfaction, at the Contractor's expense.

3.04 PAVEMENT QUALITY REQUIREMENTS:

Additional testing of the cured concrete slab may be taken at the Engineer's option when:

Any field cured cylinder tested for one day's pour falls below the specified strength. The Engineer will then have the Contractor take and pay for in place core samples in the area of question.

The Engineer reserves the right to require the Contractor to take and pay for additional cores for any area of a given day's pour when any cylinder from this day's pour fails to meet the specified 28 day strength.

SECTION 033000

Should any field cured cylinders or cores for one day's pour fall below the specified strength, the Owner may at his option reduce the unit price as follows:

<u>Ratio of Average Actual Strength to Specified Strength</u>		<u>Percent Reduction in Unit Price</u>
Greater than or equal to	1.0	0%
Greater than .90 and less than	1.0	5%
Greater than .80 or equal to	0.90	25%
Greater than .75 or equal to	0.80	50%
Less than or equal to	0.75	100%

3.05 PAVEMENT THICKNESS REQUIREMENTS:

Deficient Pavement Thickness: The Engineer may at his discretion require the Contractor to take core samples to determine pavement thickness. The Contractor shall pay for the cost of coring for all cores that prove deficient. The Owner shall pay for the cost of coring for all cores that are at or above design thickness. Payment for deficient thickness pavement shall comply with MnDOT Standard Specification Table 2301-3. Pavement that is deficient by more than 0.4" shall require removal and replacement at no cost to the Owner.

3.06 PAVEMENT SMOOTHNESS REQUIREMENTS:

In the event that the smoothness of the pavement is questionable to the Engineer and/or the Owner, the pavement shall be checked in accordance with Section 2301 of the MnDOT Specifications for Pavement Smoothness. Testing will be at longitudinal lines located parallel to the pavement centerline. Appropriate remedial action shall be taken by the Contractor in accordance with said Section 2301 after which the Contractor will be compensated for the pavement in accordance with said Section 2301. The cost of the original California profilograph test will be paid for by the Owner. The cost of additional California Profilograph tests, such as those required after corrective work has been performed, shall be paid by the Contractor. The unit bid price will be the maximum payment for completed pavement, no smoothness incentive pay shall apply.

3.07 MIXING-JOB, READY-MIX, OR PRE-BATCH

All batching and transporting equipment shall conform to MnDOT Standard Specifications, Section 2301. Water used in mixing concrete shall be potable, clean and free from deleterious amounts of acids, alkalies or organic material. The method of handling batches and charging the mixer shall ensure complete introduction of each batch separately without loss of materials. The concrete, as discharged from the mixer, shall be uniform in composition and consistency.

SECTION 033000

Ready-mix concrete shall conform to ASTM C94. Ready-mix concrete shall be prepared and delivered only by an organization which will assign sufficient capacity and transporting equipment to the work to insure delivery at a rate required to ensure efficient and proper handling, placing and finishing of the concrete. The agitating delivery units shall be rotated at their rated mixing speed for one minute immediately prior to placement of concrete.

Maximum Time before Placement: Concrete transported without continuous agitation shall not be used if the period elapsed between the time the concrete is mixed and the time it is placed is greater than 30 minutes. Concrete transported with agitation shall not be used when the cement has been in contact with the aggregate more than 1-1/2 hours before it is placed.

3.08 PLACING - CHUTING, CONVEYING AND PUMPING

Placement of Concrete: The concrete shall be placed in such manner as to require as little rehandling as possible. The subgrade, at the time of placing concrete, shall be in a uniformly moist but not muddy condition to a depth of not less than 1 inch (acceptable in early spring and late fall) or shall be covered with a single layer of plastic film (to be used during periods of hot dry weather) meeting requirements of Section 4107, IDOT Standard Specifications for Highway and Bridge Construction.

The concrete shall be distributed such that when consolidated and finished, the slab thickness and surface grade required by the Drawings will be obtained at all points. Workmen shall not be allowed to walk in the freshly mixed concrete with boots or shoes coated with earth or foreign substances. Concrete shall be thoroughly vibrated and consolidated against and along the faces of all forms and along the full length and on both sides of all joint assemblies.

Vibrators: Vibrators shall not be permitted to come in contact with a joint assembly, the grade, or a side form. The vibrator shall not be operated longer than 15 seconds in any one location.

Concrete shall be deposited as near to expansion and contraction joints as possible without disturbing them but shall not be dumped onto a joint assembly.

Weather Limitations: Concrete placement will not be permitted, when in the opinion of the Engineer, weather limitations prevent proper finishing and curing of the concrete. In hot weather, concrete placement shall be discontinued when weather conditions such as high concrete temperature, high air temperature, low humidity, and high winds prevent proper finishing, curing and a surface free of cracks. In cold weather the subgrade shall be so treated, protected and prepared to produce a frost free subgrade when the concrete is deposited. Concrete shall not be placed when the ambient temperature is below 40 degrees F. Concrete shall not be placed when it is likely to be subject to freezing temperature before final set has occurred. The concrete temperature when placed in the pavement shall not be less than 50 degrees F. nor more than 90 degrees F. Suitable means must be provided for

SECTION 033000

maintaining the concrete at a temperature of at least 50 degrees F., for not less than 72 hours after placing. Concrete damaged by freezing shall be removed and replaced at the expense of the Contractor. When approved by the Engineer, an approved retarding admixture may be used to delay the initial concrete set during extremely hot weather.

3.09 FINISHING

The concrete shall be struck-off, consolidated, and finished to the pavement cross section shown on the plans. Hand finishing will be permitted in the event of breakdowns, narrow widths and areas of irregular dimensions, to finish the concrete already in place. The finished concrete shall be smooth within the tolerance specified on these specifications. Pavement Crown: The pavement crown shall be as shown on the standard details unless otherwise specified by Engineer. Pavement Finish: The final surface of the pavement shall be transverse grooving using a broom or carpet drag to produce a uniform, skid-resistant texture.

Finishing Integral Curb or Curb and Gutter: Curbs or curb and gutter shall be required along the edges of the paving where shown on the plans. Curbs or curb and gutter shall be formed in accordance with the standard details. The finished curb or curb and gutter shall be protected by a suitable curing compound on all exposed surfaces. Joints shall be placed in line with joints occurring in the pavement or in 10 ft. increments. Joints shall be in alignment with each other across the street where practical. The curb or curb and gutter shall be given a textured finish (light brooming) to match the pavement. All joints in curb and gutter, driveways and pavement back of curb shall be sealed with rubberized asphalt joint sealant (Crafco, or approved equal).

Integral Curb: Integral curb may be constructed integrally with the pavement using slip-form or extrusion equipment, or placed immediately after finishing operations by hand-forming or using facing forms.

Curb and Gutter: Curb and gutter may be constructed as a separate operation before pavement construction. Curb and gutter may be formed using forms, self-propelled slip-form or extrusion methods. The edge of the gutter line of curb and gutter may be used as a form for finishing the pavement slab. The joint between curb and gutter and concrete pavement shall be continuously keyed and contain bars at intervals not to exceed 3.0 feet. curb and gutter operations are suspended long enough for concrete to attain an initial set, two ½ inch diameter reinforcing bars 30 inches long shall be embedded in the concrete.

The Contractor may with the Engineer's approval place concrete with a slip-form paver designed to spread, consolidate, screed and float finish the freshly placed concrete in one complete pass of the machine. The proximity of utility poles may prevent the use of a slip form paver.

SECTION 033000

3.10 CONCRETE CURING:

Membrane curing compounds shall be applied immediately after final finishing of the new concrete at a rate of 15 square yards per gallon. The compound shall contain a white pigment to easily detect the areas which has been covered. The compound shall be applied to all exposed surfaces immediately after the removal of all forms. The finished concrete shall be cured with a liquid curing compound. Concrete surfaces, to which membrane compounds have been applied, shall be kept free from all foot and vehicular traffic and all other sources of abrasion for a minimum period of 72 hours. The Contractor shall protect the pavement against all damage prior to final acceptance of the work by the Owner.

Opening to Traffic: The Contractor shall exclude traffic from the pavement by erecting and maintaining barricades and signs until the concrete is at least 14 days old, or for a longer period if so directed by the Engineer. Part of the pavement shall be used, for even the lightest vehicles, until the concrete is 72 hours old. The Contractor may allow his equipment to run up on the edge of a new concrete slab at least 72 hours old, if he provides adequate means to protect the slab. Sufficient burlap, canvas, or other approved material shall be kept on hand at all times to prevent fresh concrete from being damaged due to showers or rainfall. Failure to properly protect unhardened concrete will constitute cause for the removal and replacement of defective pavement at the Contractor's expense.

SECTION 033000

(2360) PLANT MIXED ASPHALT PAVEMENT (LOCAL AGENCY)

MnDOT 2360 is modified and/or supplemented with the following:

Mix Designation Numbers for the bituminous mixtures on this Project are as follows:

Type SP 12.5 Wearing Course	SPWEB240C
Type SP 12.5 Non-Wearing Course	SPNWB240C

NOT APPLICABLE

NOT APPLICABLE

S-1.4 The sentence “In addition to the list the above the pavement surface must meet requirements of 2399 (Pavement Surface Smoothness) requirements.” is deleted from MnDOT 2360.3.E Surface Requirements. The requirements of MnDOT 2360.3.E Surface Requirements will apply.

S-1.5 NOT APPLICABLE

S-1.6 **The first paragraph of MnDOT 2360.3.D.1** is hereby deleted and replaced with the following:

D.1 Maximum Density

Compact the pavement to at least the minimum required maximum density values in accordance with Table 2360-19, “Required Minimum Lot Density (Mat)”.

S-1.7 **MnDOT Table 2360-20 Longitudinal Joint Density Requirement** is hereby deleted.

MnDOT 2360.3.D.1.h Mat Density Cores is hereby deleted and replaced with the following:

D.1.h Mat Density Cores

Obtain four cores in each lot. Take two cores from random locations as directed by the Engineer. Take the third and fourth cores, the companion cores, within 1 foot [0.3 m] longitudinally from the first two cores. Submit the companion cores to the Engineer immediately after coring and sawing. If the random core location falls on an unsupported joint, at the time of compaction, (the edge of the mat being placed does not butt up against another mat, pavement surface, etc.) cut the core with the outer edge of the core barrel 1 foot [0.3 meters] away (laterally) from the edge of the top of the mat (joint). If the random core location falls on a confined joint (edge of the mat being placed butts up against another mat, pavement surface, curb and gutter, or fixed face), cut with the outer edge of the core barrel 6 inches $\pm$ 0.5 inch [150 mm $\pm$ 12.5 mm] from the edge of the top of the mat (ex. center of 4 inch [100 mm] core barrel 8 $\pm$ 0.5 inches [200 mm $\pm$ 12.5 mm] from the edge of the top of the mat). Cores will not be taken within 1 foot [300 mm] of any unsupported edge. The Contractor is responsible for maintaining traffic, coring, patching the core holes, and sawing the cores to the paved lift thickness before density testing.

The Engineer may require additional density lots to isolate areas affected by equipment malfunction, heavy rain, or other factors affecting normal compaction operations.

MnDOT 2360.3.D.1.j Companion Core Testing is hereby deleted and replaced with the following:

The Department may select at least one of the two companion cores per lot to test for verification.

MnDOT 2360.3.D.1.n Longitudinal Joint Density is hereby deleted.

MnDOT 2360.3.D.1.p Shoulders is hereby deleted.

MnDOT Table 2360-24 Payment Schedule for Longitudinal Joint Density (SP Non-Wear and SP Shoulders, 4% Void) is hereby deleted.

MnDOT Table 2360-25 Payment Schedule for Longitudinal Joint Density (SP Non-wear and SP Shoulders, 3% Void) is hereby deleted.

MnDOT 2360.3.D.1.r Pay Factor Determination is hereby deleted.

DIVISION E – EARTHWORK

SECTION 310113

SUBSURFACE INFORMATION

PART 1 - GENERAL

1.01 GENERAL:

- A. The GENERAL, SUPPLEMENTAL, and other CONDITIONS of the Contract and the GENERAL REQUIREMENTS are hereby made part of this Section.
- B. Soil borings have been performed for this project and are included in the Appendix of this project manual.
- C. Additional Investigation:
 - 1. Contractor should visit site and acquaint himself with site conditions.
 - 2. Prior to bidding, Contractor may make subsurface investigations to satisfy himself with site and subsurface conditions.

1.02 QUALITY ASSURANCE:

- A. Readjust work performed that does not meet technical or design requirements.
- B. Make no deviations from the Contract Documents without specific and written approval of Owner.

* * * END OF SECTION * * *

SECTION 310116

EXISTING UTILITIES, UNDERGROUND OBSTRUCTIONS, AND SUBSURFACE CONDITIONS

PART 1 - GENERAL

1.01 SCOPE:

- A. The GENERAL, SUPPLEMENTAL, and other CONDITIONS of the Contract and the GENERAL REQUIREMENTS (Division 1) are hereby made part of this Section.
- B. This Section describes, but is not limited to, the contact to be made with existing utilities and the Work associated with location, adjustment and repair of underground utilities and obstructions.
- C. Information or data presented herein relative to existing subsurface utilities are not a part of the Contract Documents and shall not be used by the Contractor for reference during construction of the work.

1.02 PAYMENT:

- A. Repair by the Contractor of any utilities, sewer service lines and main, field and drain tiles and other underground obstructions damaged by the Contractor's activities is considered incidental Work with no separate measurement and payment to be made.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION

3.01 GENERAL:

- A. The Contractor shall take all necessary precautions to locate, protect and repair existing utilities, underground obstructions and structures.
- B. The Contractor shall be responsible for all damage to field tiles, streets, roads, highways, ditches, shoulders, embankments, culverts, bridges or other public or private property or facility, regardless of location or character, which may be caused by moving, hauling, or otherwise transporting equipment, materials or men to or from the work or any site thereof, whether by him or his subcontractor(s).
- C. The Contractor shall protect, shore, brace, support and maintain all underground pipes, conduits, drains and other underground construction uncovered or otherwise affected by the construction work performed by him. All pavements, surfacing, driveways, curbs, walks, buildings, utility poles, guy wires and other surface

SECTION 310116

structures affected by construction operations in connection with the performance of the contract, together with all shrubs in yards and parking crossed by or adjacent to the pipeline shall be maintained, and if removed or otherwise damaged, shall be restored to the original condition thereof as determined and approved by the Resident Project Representative. All replacements of such underground construction and surface structures or replacements of such underground construction and surface structures or parts thereof shall be made with new materials conforming to the requirements of these specifications or, if not specified, as approved by the Engineer.

- D. Information and data shown or indicated on drawings of the site with respect to existing underground facilities or utilities are based on information and data furnished to the Owner or Engineer by owners of such underground facilities or by others.
- E. The Owner and Engineer are not responsible for the accuracy, completeness or precision of any such information, data or drawings. In general, it is not the intent of the Owner or Engineer to provide complete information relative to existing utilities on the Drawings.
- F. The Contractor shall have full responsibility for reviewing and checking all such information and data, for locating all existing underground facilities including water drainage projects affected by construction, for contact with owners of affected underground facilities, and for such other requirements as may be included in the specifications, the cost of all of which will be considered as incidental to the Contract Price.
- G. Information, data or drawings describing existing underground facilities or utilities are not a part of the Contract Documents.
- H. If, during the course of any land disturbance related to the project, any bones, artifacts, foundations, or other indications of past human occupation of the area are uncovered, work at this location shall be temporarily stopped and the Engineer shall be notified at once to ensure notification of appropriate state authorities.

3.02 SUBSURFACE CONDITIONS:

- A. In the preparation of Drawings and Specifications, the Engineer may have obtained, reviewed or been informed of subsurface information not specifically collected for design or construction of this project. Such information was of a general nature and available from sources normally open to the general public.
- B. Printed information available to the Engineer during project design, including reports referenced above, are available at the office of the Engineer for examination during regular business hours.
- C. Subsurface information or data referenced herein are not a part of the Contract Documents.

SECTION 310116

3.03 UTILITY CONTACT:

- A. Prior to any Work, a preconstruction conference may be scheduled by the Engineer to include involvement by affected utilities. Failure of any utility to be represented at the preconstruction conference, for any reason, shall not relieve the Contractor of any responsibility described herein.
- B. Prior to Work in a specific area affecting underground utilities, all utilities shall be notified by the Contractor.

3.04 UTILITY REPAIR:

- A. When a utility line or cable is exposed or damaged, the Contractor shall comply with the repair requirements of the affected utility.
- B. When a utility cable is exposed, the Contractor shall compact the backfill beneath the exposed cable before completion of the backfill operation.
- C. The Contractor shall make, without delay, satisfactory and acceptable arrangement with the owner(s) of or the agency or authority having jurisdiction over damaged property, surface, structure, or facility concerning its repair or replacement or payment of costs incurred in connection with said damage.

3.05 OTHER OBSTRUCTION CONTACT AND REPAIR:

- A. Where field and drain tiles are suspected, property owners shall be contacted by the Contractor.
 - 1. To locate and prevent damage to known tile, the Contractor shall not be required to excavate beyond twenty-five (25) feet either side of the reported centerline without additional compensation.
 - 2. Should additional excavation be required and compensation is desired, a Field Order shall be prepared as documentation prior to commencing the Work.
- B. Where county tile have been damaged, these shall be repaired according to county specifications and requirements.
- C. The Contractor shall notify the Owner when field tile have been damaged and provide drawings showing the location of repaired field tile.

SECTION 310116

D. Field and Drain Tile Repair:

1. Butt-joint Method:

- a. Expose and remove damaged sections of tile so that sound, undisturbed tile lies on both sides of trench.
- b. Connect the two sides using PVC pipe butted against both sides of the existing tile.
- c. Seal and secure joint with concrete. One bag "Sacrete" mixed with water will be considered adequate for all tile 16 inches and smaller.
- d. Replace and hand tamp the soil in twelve (12) inch lifts up to the bottom of the repaired section of tile.
- e. Continue with trench backfill as per normal procedure.
- f. All tile shall be repaired within 24 hours of the time it was damaged or disturbed.

* * * END OF SECTION * * *

SECTION 311100

MAINTENANCE OF CLEARING

PART 1 - GENERAL

1.01 CONDITIONS OF THE CONTRACT:

- A. The GENERAL, SUPPLEMENTAL and other CONDITIONS of the Contract and the GENERAL REQUIREMENTS are hereby made part of this Section.
- B. The articles contained in this Section may amend, modify, supersede, void or supplement the articles of the General Conditions, and shall take precedence over the provisions of the General Conditions. Where any part of an article of the General Conditions is amended, modified, superseded or voided by a provision of this Section, provisions of such article not so specifically amended, modified, superseded or voided shall remain in effect. Where any article of the General Conditions is supplemented by this Section, all provisions of such article shall remain in effect, and the supplementary provisions of this Section shall be considered as added thereto.

1.02 SCOPE:

- A. Related requirements specified elsewhere:
 - 1. Summary of Work: Section 011100.
 - 2. Cleaning for Specific Products or Work: Project Manual section for that Work.
- B. Maintain premises and public properties free from accumulations of waste, debris, and rubbish, caused by operations.
- C. At completion of Work, remove waste materials, rubbish, tools, equipment, machinery and surplus materials and clean all sight-exposed surfaces; leave project clean and ready for occupancy.

1.03 SAFETY REQUIREMENTS:

- A. Standards: Maintain project in accordance with safety and insurance standards.
- B. Hazards Control:
 - 1. Store volatile wastes in covered metal containers, and remove from premises daily.
 - 2. Prevent accumulation of wastes which create hazardous conditions.

SECTION 311100

- C. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
 - 1. Do not burn or bury rubbish and waste materials on project site.
 - 2. Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains.
 - 3. Do not dispose of wastes into streams or waterways.

PART 2 - PRODUCTS

2.01 MATERIALS:

- A. Use only cleaning materials recommended by manufacturer of surface to be cleaned.
- B. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3 - EXECUTION

3.01 DURING CONSTRUCTION:

- A. Execute cleaning to ensure that building, grounds, and public properties are maintained free from accumulations of waste materials and rubbish.
- B. Wet down dry materials and rubbish to lay dust and prevent blowing dust.
- C. At reasonable intervals during progress of work, clean site and public properties, and dispose of waste materials, debris and rubbish.
- D. Provide on-site containers for collection of waste materials, debris and rubbish.
- E. Remove waste materials, debris and rubbish from site and legally dispose of at public or private dumping areas off Owner's property.
- F. Handle materials in a controlled manner with as few handlings as possible; do not drop or throw materials from heights.
- G. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly painted surfaces.
- H. Protect all structures within the construction limits.

SECTION 311100

- I. The Contractor shall manage his activities and implement protective measures as necessary to minimize soil erosion during the construction process.
- J. At the end of each day's work leave construction area in such a condition so to permit unencumbered access to all private properties in vicinity of Project.

3.02 FINAL CLEANING:

- A. Employ experienced workmen, or professional cleaners, for final cleaning.
- B. In preparation for substantial completion or occupancy, conduct final inspection of project site.
- C. Broom clean paved surfaces; rake clean other surfaces of grounds.
- D. Maintain cleaning until project, or portion thereof, is occupied by Owner.
- E. For disturbed areas on the shoulders/terraces, replace final 6 inches with topsoil and finish grade suitable for seeding.

* * * END OF SECTION * * *

SECTION 311200

STORM SEWERS/DRAIN TILE

PART 1 - GENERAL

1.01 SCOPE:

- A. The CONSTRUCTION AGREEMENT and other CONDITIONS of the Contract and the GENERAL REQUIREMENTS (Division 1) are hereby made part of this Section.
- B. Related requirements specified elsewhere: none.
- C. Furnish all labor, material, and equipment necessary to complete the installation of the storm sewer.
- D. Excavate all substances encountered to depths indicated on the drawings or as herein specified.
- E. Place excavated materials suitable for backfilling in orderly manner sufficiently away from banks of trench to avoid overloading and prevent slides or cave-ins.
- F. Remove and dispose of excess or unsuitable backfill materials as directed by the Engineer.
- G. Perform site grading as required to prevent surface water from entering trenches.
- H. Perform dewatering operations and/or form water diversion ditches as required to keep base for laying pipe in trench free of water.
- I. Assure that all shoring and sheeting required complies with applicable local, state and federal safety requirements.
- J. All trenching shall be open cut except where indicated otherwise on drawings.

1.02 QUALITY ASSURANCE:

- A. Provide manufacturer's certificate that materials meet or exceed minimum requirements as specified.

1.03 PRODUCT DELIVERY, STORAGE, AND HANDLING:

- A. During loading, transporting, and unloading, exercise care to prevent damage to materials.
- B. Do not drop pipe or fittings.

SECTION 311200

PART 2 - PRODUCTS

2.01 MATERIALS: See plan sheets for pipe material.

A. Reinforced Concrete Pipe:

1. Reinforced Concrete Pipe (RCP): ASTM C76, Class 2000 D, Wall B tongue and groove, machined ends, 6 ft. minimum laying length; provide reinforcement as set forth in Table III of ASTM C76; label each piece by class and show date of manufacturer.
2. Commercial joint sealing gaskets or mastic material shall be used in all joints.
3. Bends may be prefabricated or fabricated in the field by sawing pipe and installing a concrete collar around field joint.
4. Joints shall be watertight bell and spigot.

B. High Density Polyethylene (HDPE): Perforated drain tile/subdrain.

1. Pipe shall conform to Minnesota DOT Standard Specifications Section 2502.
2. Use manufacturer's recommended fittings and couplings (incidental to pipe).

C. Corrugated Culverts.

1. Pipe and aprons shall conform to Minnesota DOT Standard Specifications 2417.
2. Use manufacturer's recommended fittings and couplings (incidental to pipe).

D. Castings: Shall conform to standard drawings. Standard castings differing in non-essential details will be acceptable, if approved by the Engineer.

2.02 JOINT LUBRICANT:

A. As recommended by pipe manufacturer.

SECTION 311200

PART 3 - EXECUTION

3.01 TRENCH EXCAVATION:

A. General Requirements:

1. Keep trench minimum width necessary for proper laying of pipe and to prevent movement of existing utilities.
2. Keep banks as nearly vertical as practicable while complying with safety requirements.
3. Reinforced concrete pipe shall lay on undisturbed suitable soil or bedding at every point along its length.
4. Accurately grade bedding to provide uniform bearing and support for each pipe section.
5. Unstable trench conditions may require special rock bedding in lieu of granular bedding on the trench bottom. Where authorized by the Engineer, remove unsuitable material below the sewer invert elevation and replace with special rock bedding to the sewer invert elevation.
6. Ledge rock, boulders and large stones encountered in the excavation shall be removed to provide a minimum clearance of 12 inches below and on each side of all pipe.
7. Each pipe will be carefully inspected before it is laid and defective pipe will be rejected.
8. The pipe shall be laid upgrade beginning at the lower end of the line and shall be laid true to the grades shown on the plans. Any pipe which has its grade disturbed after laying shall be taken up and relaid. No pipe shall be laid, when in the opinion of the Engineer, weather or trench conditions will not permit a satisfactory installation.
9. Laying of pipe to true line and grade shall be accomplished by the laser beam method.
10. When pipe connects with other structures, the end shall be placed or cut off flush with the face of the structure.

SECTION 311200

3.02 EXCAVATION FOR APPURTENANCES:

A. General Requirements:

1. Excavate to leave minimum 12 inch space between outer surface of appurtenance and side of trench.
2. Fill unauthorized overdepths with compacted granular material.

3.03 BACKFILLING AND COMPACTING:

A. General Requirements:

1. Trenches shall not be backfilled until the pipe is checked for alignment and grade and any required tests are performed.
2. When granular backfill is specified or authorized by the Engineer, the granular backfill shall be placed from 0.5 feet below the bottom of the pipe to 0.5 feet above the top of the pipe.
3. The earth or granular backfill shall be mechanically tamped under the "spring line" and around the pipe in 6 inch layers until the pipe has not less than 12 inches of compacted cover over the top of the pipe.
4. Trenches shall then be carefully backfilled with suitable earth or gravel free from boulders, large roots, sod, and vegetation.
5. Backfill remainder of trench in lifts not to exceed 1 foot in loose thickness. Compact using some type of mechanical devices or equipment and moisten or aerate as required to assure consolidation.
6. Each layer shall be compacted to Standard Proctor Density as determined by ASTM D698 according to the following:

a.	Unpaved areas	95 percent, with moisture -4 to -1 percent of optimum
b.	Cohesive soils under surfaced areas	98 percent, with moisture -4 to -1 percent of optimum
c.	Granular backfill under surfaced areas	100 percent with moisture -4 to -1 percent of optimum

SECTION 311200

7. Standard soil density tests shall be run in locations as specified or designated by the Engineer.
8. All standard soil density tests that initially meet the specifications shall be paid for by the Contractor. All tests that fail to meet the specifications and all subsequent retesting costs including additional engineering costs shall be paid for by the Contractor. Contractor shall be responsible for scheduling the work, notifying the testing laboratory and Engineer, and allowing adequate time for all tests.
9. Do not disturb joint alignment or grade of pipe during backfill operation.
10. Conduct backfill operations so that no more than 100 feet of trench will be left open at any one time.

3.04 INLETS, MANHOLES AND JUNCTION BOXES:

A. Storm Drain Inlets and Junction Boxes:

1. Shall be constructed of concrete, precast concrete sections, or as shown in the standard details. Precast PCC walls can be 5" thick.
2. The concrete cover over steel reinforcing shall not be less than 2 inches.
3. All inlet, manhole and junction box bases shall be poured in place concrete unless otherwise approved by the Engineer. Groundwater shall be kept below bottom of concrete base for 24 hours after pouring.
4. Hand form smooth inverts in bottom of inlets, manholes and junction boxes to permit water to flow freely.
5. Reinforced concrete lids may be precast; however, they shall be reinforced as shown on the plans and of the size required for each specific inlet or junction box.
6. Inlets, manholes and junction boxes shall be of such size and construction as shown on the detail drawings. However, in special cases the contractor shall modify dimensions as necessary to accommodate multiple pipes at the same structure.
7. Contractor shall construct intake with a fuel resistant boot providing for a watertight connection where indicated in the standard details.

SECTION 311200

3.05 DRAIN TILE:

- A. Drain tile shall be perforated and placed as shown on the plans. Encase subdrain with 3/8" pea rock with a minimum of 12" of cover. Pea rock incidental to drain tile.

3.06 EROSION AND SEDIMENT CONTROL:

- A. Protect against erosion of soils and sediment from leaving the site.
- B. Provide inlet protection once the new intake is installed. Place silt fence and rock around the inlet to prevent sediment from entering the storm sewer. Maintain silt fence and remove sediment deposits.
- C. Minimize the amount of native vegetation disturbed beyond the construction site. Vegetation will help prevent sediment from leaving the site. Install silt fence as shown on the plans and as needed to prevent sediment from running off the site. Maintain silt fence and remove sediment deposits when it reaches 1/3 the height of the silt fence.

Contractor shall be careful to not track mud from trucks leaving the site. Contractor shall clean mud from trucks and clean adjacent streets and pavement immediately if tracking of soil occurs.

Contractor shall execute, pay for and submit MPCA Storm Water Permit (partially completed on the SWPPP in the Appendix). This contract shall be completed to abide by the regulations granted as specified by the Permit.

* * * END OF SECTION * * *

SECTION 311600

SEEDING, FERTILIZING, AND HYDROMULCHING:

PART 1 - GENERAL

1.01 SCOPE:

- A. The work covered by this section of the specifications shall consist of preparing the ground surface, furnishing and applying fertilizer, furnishing and sowing seed, compacting and repairing in accordance with this specification at the locations shown on the Drawings or as directed by the Owner.

PART 2 - PRODUCTS

2.01 SEED:

The seed or seed mixture to be furnished and the minimum percentage by weight of pure live seed of each species in each lot of seed and the maximum percentage of weed seed shall be as stated below. All seed used shall be labeled in accordance with U.S. Department of Agriculture "Rules and Regulations under the Federal Seed Act" in effect on the date of the execution of this Agreement. All seed shall be furnished in standard containers, unless exception is granted by the Owner. Seed which has become wet, moldy, or otherwise damaged in transit or storage will not be acceptable.

For the designated disturbed areas the seed mixture shall be:

1. Site seeding -

Urban Turf Mix

- 70% Bluegrass, Kentucky
- 10% Ryegrass, Perennial (fine leaf variety)
- 20% Fescue, Creeping Red

Application Rate: 4 lbs. per 1,000 sq. ft.

-Alternate seed blends that are conducive to the site soils, are low maintenance, and require minimal mowing will be considered upon submittal to the Owner.

NOTE: The Contractor is reminded that the above mixtures are for live seed.

SECTION 311600

Seed Test:

1. Each lot of seed shall be subject to sampling and testing at the discretion of the Owner. Sampling and testing will be in accordance with the latest "Rules and Regulations Under the Federal Seed Act" in effect on the date of the purchase order. Tags from bags used on the project should be submitted to the Owner.
2. In the event that reports of seed analysis are not received prior to sowing, and tests made thereafter indicate the seed used did not meet the specification requirements, the Owner may require the Contractor to reseed the entire area affected during the next suitable season with sufficient seed to provide the total quantity of pure live seed specified, or will deduct from the contract payment an amount sufficient to cover the cost of seed and reseeding operations.

2.02 FERTILIZER:

Lime: No lime application is required.

Fertilizer: Fertilizers shall be commercial carriers of available plant food elements or combinations thereof, either as inorganic or organic materials, and shall conform to the applicable State fertilizer laws. The fertilizer shall be uniform in composition, dry, and free-flowing material in condition for application by suitable equipment. The fertilizer shall be delivered in unopened bags or other convenient standard containers, each fully labeled with the manufacturer's guaranteed analysis. Any fertilizer which becomes caked or otherwise damaged, making it unsuitable for use, will not be acceptable.

All areas seeded shall be fertilized with a commercial fertilizer having a nitrogen, phosphorus, potassium analysis ratio of 13-13-13 at the minimum rate of 650 lbs./acre.

Fertilizer Test:

1. The Owner shall be furnished with tags from bags of fertilizer used on the project.
2. In the event that reports of fertilizer analysis are not received prior to the application of fertilizer and tests when made show the fertilizer used did not meet the minimum specification requirement, the Contractor may be required, at the discretion of the Owner, to supply and distribute sufficient additional materials over the entire areas affected to bring the amounts up to specification requirements, or have deducted from the contract payments an amount sufficient to cover the cost of such quantities of fertilizer and the application thereof.

SECTION 311600

2.03 HYDRO-MULCHING:

- A. Required on all disturbed areas.
- B. Materials to be 3000 lb. dry cellulose fiber and 50 lb. tackifier per acre.
- C. Use a slurry that can be applied with standard hydraulic mulching equipment.
- D. Dye the slurry green to facilitate visual metering during application.
- E. Do not use materials that have growth on germination inhibiting factors or any toxic effect on plant or animal life when combined with seed or fertilizer.

PART 3 - EXECUTION

3.01 GENERAL:

Areas to be seeded, those requiring special preparation of the ground surface, and those in a satisfactory condition to remain undisturbed, will be shown on the Drawings and/or determined by the Owner prior to the seeding phase.

Suitable equipment necessary for proper preparation of the ground surface and for handling and placing all required materials shall be on hand, in good operating condition, and shall be approved by the Owner before the various operations are started. The Contractor shall demonstrate to the Owner before starting the various operations that the application of required materials will be made at the specified rates.

During the operations of distributing fertilizer, or sowing seed, the areas covered shall be checked against the quantities of material used when one-fourth, one-half, and three-fourths of the affected areas have been covered to verify the proper rate of application. Upon completion of the distributing operations, a final check of the total quantities of materials used shall be made against the total acreage fertilized, and sown. If it is determined, by this checking of quantities used or by inspection either immediately after distributing the materials or after there is a show of green, that uniform distribution at rates at least equal to the minimum required, at the discretion of the Owner, either to distribute additional quantities of these materials on the areas designated to meet the specification requirements, providing seasonal conditions are favorable, or have deducted from his payment an amount sufficient to cover the cost of the material and also the cost of distribution. Skipped areas wider than the distance between drills, in the case of drilling operations, or areas averaging more than 4 inches in width in the case of broadcasting operations, are subject also to this provision.

When conditions are such, by reasons of extreme drought, excessive moisture, or other factors, that satisfactory results are not likely to be obtained, the work shall be stopped and it shall be resumed only when the desired results are likely to be obtained.

SECTION 311600

3.02 ORDER OF WORK:

The order of work operations shall be as follows, except as modified by the Owner.

- A. Removing of Debris: Prior to the commencement of seeding, all large stones, cables, wire, or any waste materials shall be removed from the site. All heavy growths of vegetation on the site which may interfere seriously with subsequent seeding, or sowing operations shall be mowed, raked, and used for mulch if suitable, or hauled off the site, as directed by the Owner.

During seeding operations, the ground surface shall be kept cleared of all large stones, roots, cable, wire, or any other materials which might hinder subsequent fertilizing, sowing, or maintenance operations.

1. Finished Grading: Prior to seeding the areas shall be given a finished grading as needed to correct irregularities in the surface, due to previous operations or other causes and to restore the prescribed grade.
2. Discing and Harrowing: After the finish grading has been completed, the areas to be seeded shall be thoroughly prepared to a depth of 1 to 2 inches by discing or harrowing or by other means approved by the Owner.
3. Fertilizing: Fertilizer shall be distributed uniformly over the areas to be seeded at a rate which will provide not less than the minimum quantity of each fertilizer ingredient specified. Distribution shall be by hand or by a common fertilizer distributor, or other equipment approved by the Owner. Use of a grain or seed drill, equipped to sow seed and distribute fertilizer at the same time, will be permitted.
4. Sowing Seed: All sowing of seed shall be completed prior to September 28, 2012. Sowing delayed beyond the specified dates, and due to circumstances beyond the Contractor's control, may be continued upon written approval from the Owner, but in no instance more than 10 calendar days beyond the latest date. Temporary winter seeding and mulching necessary to maintain SWPPP due to delays until spring will be at no additional cost to the Owner. The Contractor shall employ a method of sowing satisfactory to the Owner, and where practical he shall make use of approved power-drawn drills or seeders, hand seeders, or other approved equipment. When sowing seed mixtures, the Contractor shall keep the seed thoroughly mixed during the sowing operations to prevent separation of species and the subsequent lack of uniform distribution of species. When drills or other sowing equipment are used, they shall be equipped with markers or other means to provide that the successive seeded strips will overlap or be separated by a space no greater than the space between drills of the equipment being used. The sowing shall be stopped when satisfactory results are not likely to be obtained due to excessive moisture conditions, high winds, or other unfavorable conditions. It shall be resumed only when conditions are favorable again or when alternate or corrective measures and procedures which are approved by the Owner have been adopted. The rates of sowing

SECTION 311600

specified are on the basis of the minimum total of pure live seed per acre. Actual sowing rates will be in excess of this quantity because of the existence of inert materials in all lots of seed. The actual seeding rate of the seed as delivered (including the inert and other material) is determined by dividing the minimum pounds of pure live seed, as specified, by the percentage by weight of pure live seed of the delivered seed.

5. Cleaning Up: After the seed has been sown, and prior to compacting, the surface shall be cleared of all stones, or other objects larger than 2 inches in greatest diameter, and all wire, roots, brush, or other objects that may interfere with subsequent mowing operations.
6. Compacting: Immediately after the sowing operations have been completed, unless otherwise directed by the Owner, the entire area shall be compacted by means of a culti-packer, roller, or other approved equipment, in order to reduce air pockets to a minimum. When a culti-packer or other equipment that leaves a roughened surface is used, the final rolling shall be along the contour and at right angles to the existing slopes to reduce water erosion, or at right angles to the prevailing wind to reduce dust, as directed by the Owner.
7. Hydro-Mulching: Cellulose fiber mulching material shall be placed as soon as seed is sewn and final rolling is completed at a rate of 3050 pounds per acre. Mulch shall be evenly and uniformly distributed and anchored to the soil.

3.03 REPAIRING:

If the surface has become gullied or otherwise damaged, within two (2) years from the date of acceptance of this project, the affected areas shall be repaired to re-establish the grade (at no additional cost) and the condition of the soil, as directed by the Owner and provided for in this specification, and shall then be reseeded as specified herein. Later placing and compacting of fill material will be in accordance with the applicable grading specifications.

* * * END OF SECTION * * *

SECTION 312300

EARTHWORK

PART 1 - GENERAL

1.01 SCOPE:

- A. The work covered by this section of the Project Manual shall include furnishing of all labor, material and equipment necessary to complete the removal and replacements items, topsoil stripping, excavation, embankment, subgrade preparation and terrace grading necessary for construction of the project.
- B. It will be the Contractor's responsibility to protect all existing utilities. Any existing utilities damaged by the Contractor will be replaced or repaired at the Contractor's expense. The Contractor is cautioned to seek the help of the appropriate utility office in locating existing lines.
- C. No excavation or stripping shall be started until the area has been cleared and grubbed and the Contractor has staked the proposed work.

1.02 RELATED WORK SPECIFIED ELSEWHERE:

- A. Soil Testing: Section 312326.

PART 2 - PRODUCTS - NONE

PART 3 - EXECUTION

3.01 REMOVAL, ADJUSTMENT AND REPLACEMENT ITEMS:

- A. Concrete Pavement or Asphalt Pavement:
 - 1. Concrete pavement or asphalt pavement shall be removed as shown on the plans or directed by the Engineer.
 - 2. The juncture between the existing pavement or the surfacing to remain and that to be removed shall be made by sawing or milling and carefully removing the portion required in such a manner that the remaining pavement will not be damaged.
 - 3. Street excavation material removed by the Contractor shall be used as fill in widening areas of access road. The Contractor shall place the material as specified in Paragraphs 3.02-C and D.

SECTION 312300

4. Concrete or asphalt pavement removed shall remain the property of the Contractor. The Contractor shall dispose of pavement at a location arranged by the Contractor.
5. Replacement shall be as shown on the plans or directed by the Engineer.

B. Concrete Curb and Gutter:

1. Concrete curb and gutter shall be as shown on the plans or as marked/directed by the Engineer.
2. The juncture between the existing curb and gutter to remain and that to be removed shall be made by sawing and carefully removing the portion required in such a manner that the remaining curb and gutter will not be damaged.
3. New curb shall be tied to existing curb by drilling two No. 4 rebar 18 inches long with 9 inches inserted into the existing curb.
4. Replacement shall be as shown on the plans or as directed by the Engineer.
5. Any curb and gutter damaged or removed which has not been marked or approved by the Engineer shall be replaced at the Contractor's expense.
6. Expansion material/board (½-inch min.) shall be installed and the cost incidental, when new pavement is to abut the back of curb.

C. Sidewalks and Private Driveways:

1. The authorized removal and replacement of these items to be paid for by the Owner shall be marked in the field.
2. The outer most line of removal shall be made by neatly sawing parallel to the curb line and removing the approved portion without damaging the remaining driveway and/or sidewalk.
3. Replacement shall be from the approved line of removal to the back of curb line. Replacement thickness is to be # inches of PCC for driveways, # inches of PCC for sidewalk.
4. Immediately after placement, concrete shall be properly finished. The sequence of operations shall be as follows: machine or hand finishing, longitudinal floating, straightedge finishing, belting, broom finishing and the edging of joints. The machine method of finishing shall be employed, except that on odd widths or shapes of slab sidewalks, or where approved by the Engineer, hand methods will be permitted. All finishing equipment and tools shall be maintained clean, free from hardened concrete or grout,

SECTION 312300

and in a condition satisfactory to the Engineer.

5. The Contractor shall protect fresh concrete surfaces that may be damaged from pedestrians, bicycles, malicious mischief and similar occurrences, until the surface has hardened. Any surfaces which are damaged shall be removed and replaced or repaired.

D. Manhole or Valve Box Adjustments:

1. The Contractor shall adjust existing manholes, inlets and valve boxes to ¼-inch below finished grade.
2. A smooth neat transition from the casting to adjacent finished surface is required.
3. All necessary materials including rings, if used, shall be furnished by the Contractor.
 - a. High density polyethylene (HDPE) rings shall be used when adjustments are made under the casting frame. Polybutene caulking compound shall be used to seal and insure watertight joints on both sides of adjustment rings.

--- or ---

- b. This includes the installation of a metal riser as manufactured by U.M.A.R., Inc., Pella, Iowa, or approved equal for manhole casting adjustments. The Contractor will be required to anchor the risers to the existing castings with spot welds. The riser shall be ½-inch below the adjacent finished street surface. Each metal riser must be custom made for each casting.
4. Any backfill disturbed during adjustment shall be carefully and thoroughly tamped to 95% Standard Proctor Density.
5. Remove Precast manhole sections as needed to provide proper height. Cost incidental to the Manhole Adjustment bid item.
6. Adapters of proper height may be used on valve boxes.
7. Install Cretex external chimney seals on all sanitary or water castings.

3.02 EXCAVATION, EMBANKMENT, AND GRADING:

A. General:

1. The entire subgrade shall be graded to the elevation required prior to

SECTION 312300

surfacing placement.

2. Terraces shall be graded according to the plans, or as otherwise directed by the Engineer.
3. Utility appurtenances shall be located and clearly marked to avoid damage to same. Any items so damaged shall be repaired or replaced at the Contractor's expense.
4. Waste: Excavated material not needed for use on site shall be disposed of by the Contractor in locations designated by the Contractor.
5. A sufficient quantity of native topsoil, free from gravel and other foreign material and suitable for growing grass, shall be retained from the general excavation so that all terraces will have a surface at least 6 inches thick of this material.
6. Earthwork shall be suspended any time satisfactory results cannot be obtained because of weather conditions or inadequate equipment.
7. Suitable excavation from the site shall be used as embankment material prior to hauling embankment material from another source.

B. Excavation:

1. The Contractor shall perform all excavation, embankment and grading required for the site, including the requirements for moisture and density control as specified.
2. All suitable excavated materials shall be used on site to the extent necessary to raise the subgrade to the required elevation and to grade terraces. Topsoil with vegetation or sod shall not be used for embankment or have embankment placed thereon.

C. Street and Terrace Embankment and Grading:

1. Embankment (fill) material required for purposes of constructing the site subgrade to the required elevation and fill for terraces shall be furnished by the Contractor from site excavation.
2. Immediately prior to the placing of fill materials, the entire area upon which embankment is to be placed, except where limited by rock, shall be scarified by means of a disc harrow (or other approved equipment) to a depth of 6 inches. Scarifying shall be done approximately parallel to the axis of the fill. A thin layer (3 inches plus or minus) of fill material shall be spread over the scarified area and compacted as required in these specifications.

SECTION 312300

3. The upper 6 inches of the embankment shall be free from all rocks, wood, and other foreign material.
4. Site embankment material derived from excavation on the site shall not be measured for separate payment, the cost thereof shall be included in the unit price bid for excavation and embankment.
5. Upon completion of the site work, the Contractor shall excavate or fill in order to grade the terraces as described in Paragraph 3.02-A.2. or as directed by the Engineer.
6. The size and type of equipment utilized on this portion of the work shall be commensurate with the work to be accomplished.
7. Care shall be taken in working around existing utilities, trees, shrubs, and private sidewalks so as to avoid any damage to same.
8. The Contractor shall grade the gravel/rock driveways at a uniform slope as shown on the plans or as directed by the Engineer. All equipment, labor, and granular material, if required; shall be incidental to the cost of Gravel Surfacing.

D. Compaction:

1. The following procedure shall apply in the compaction process to the point of finished base under the pavement and shall be paid for as subgrade preparation:
 - a. This item includes all work associated with scarifying, drying material, applying water, discing, blading, and controlling moisture as necessary to compact 12 inches of subgrade below the proposed aggregate/recycled milling base to 98% of Standard Proctor density with -4 to -1% of optimum moisture. The Contractor shall be responsible for maintaining the subgrade (shape and density) in good condition prior to special backfill or paving. All work necessary to set string line, trim the subgrade, and prepare and maintain the subgrade prior to paving shall be included in this item and paid for in bid item Subgrade Preparation.
 - b. Remove all sod, roots, and vegetation from the area in which the embankment is required and from the embankment material.
 - c. The embankment shall be built of suitable material available from the project, in successive horizontal layers not exceeding 6 inches in compacted thickness.
 - d. Add water or air dry material as required for adequate compaction.

SECTION 312300

- e. The Contractor shall completely remove the upper 6" of material prior to scarifying and compacting the lower 6". At such time the lower 6" is at the specified density, the Contractor may proceed with building of embankment and compaction for the upper 6". Any method of subgrade preparation other than the complete removal of the top 6" of material will not be acceptable.
 - 2. Any area not accessible to large equipment shall be compacted by hand or with smaller equipment.
- E. Subgrade Preparation and Protection:
- 1. After the rough grading work has been completed, the entire graded area shall be smoothed and shaped to produce a finished subgrade in accordance with the elevations shown in the drawings or established by the Engineer.
 - 2. The Contractor shall be responsible for maintaining the finished subgrade or base under the pavement in top condition until subsequent operations are performed.
 - 3. The required moisture content of the subgrade base shall be maintained by light sprinkling immediately prior to surfacing. However, at no time shall enough water be added to soften the surface of the subgrade.
 - 4. Areas in the subgrade, which are soft or otherwise contain unsuitable material shall be excavated and replaced with material approved by the Engineer. The replacement material will, if so directed by the Engineer, be a lean clay material capable of being compacted to 98% of Standard Proctor Density and paid for as Embankment Borrow.
- F. Topsoil:
- 1. Topsoil shall be stripped, stockpiled and later spread over designated areas. When the topsoil cannot conveniently be stockpiled within the right-of-way, it shall be the Contractor's obligation to arrange for stockpile sites at his own expense. The stockpiles shall be shaped and smoothed to facilitate draining and to keep the area as neat as possible.
 - 2. Topsoil stripping and stockpiling shall be included in the price for "Terrace Grading".
 - 3. Upon completion of the pavement work outside the roadway pavement limits, 6 inches of topsoil free from gravel, sticks and other foreign material shall be placed on all newly disturbed areas behind the curb or beyond the completed surfacing. The topsoil shall be finished graded ready for seeding. All costs associated with topsoil spreading and finishing grading shall be included in Terrace Grading.

SECTION 312300

4. Excess excavation and topsoil, if any, shall be stockpiled at a location determined by the Owner. Cost shall be incidental to common excavation.
5. The final surface finish shall be one equal to a light harrowing so that the terraces will be suitable for seeding.
6. Finish grading of topsoil shall be included in the price for Terrace grading.
7. Contractor shall furnish and install all topsoil borrow necessary for grading.

* * * END OF SECTION * * *

SECTION 312326

SOIL TESTING

PART 1 - GENERAL

1.01 SCOPE:

- A. The CONSTRUCTION AGREEMENT and other CONDITIONS of the Contract and the GENERAL REQUIREMENTS (Division 1) are hereby made part of this Section.
- B. **The Contractor shall employ a testing laboratory for the purpose of performing soil testing throughout the project.**
- C. In-place density tests will be taken as directed below, with a nuclear density gauge.
- D. **The Contractor shall pay for the cost of all in-place density tests.**

1.02 RELATED WORK SPECIFIED ELSEWHERE:

- A. Earthwork: Section 312300.

PART 2 - PRODUCTS - NONE

PART 3 - EXECUTION

3.01 LOCATION OF TESTS:

- A. The in-place densities shall be taken in the finished subgrade and in maximum one foot lifts prior to the placement of surfacing in a 75' x 75' grid and in various layers in the site subgrade preparation and trench backfill for sanitary sewer mains, water mains, services and storm sewers.
- B. The in-place densities shall be performed by the independent testing firm certified by the State and locations shall be randomly selected. Test data shall be submitted to the Engineer throughout construction and will be required prior to project progress payments each period.
- C. After passing compaction testing, Contractor shall perform and pass test rolling as indicated in the plans prior to further surfacing operations.

* * * END OF SECTION * * *

APPENDIX A

STORM WATER POLLUTION PREVENTION PLAN

STORM WATER MANAGEMENT AND POLLUTION PREVENTION PLAN
FOR

2025 Alley Improvements

Windom, MN
Project No. 373179

Prepared by:
DGR Engineering
1302 South Union Street
P.O. Box 511
Rock Rapids, IA 51246
(712) 472-2531

Table of Contents

Part 1	Site Description/Site Map
Part 2	Controls
Part 3	Construction / Implementation
Part 4	Final Stabilization / Discontinuation
Part 5	Certification
Appendix A	Application for General Stormwater Permit for Construction Activity (37 pages)
Appendix B	Inspection Reports
Appendix C	Notice of Termination

PART 1: SITE DESCRIPTION/LOCATION MAP

Project Name	2025 Alley Improvements
Project Type	Street Reconstruction
Project Location (address, Section, TWP, R)	Various Streets Section 25, T105N, R36W Windom, MN, Cottonwood Co., MN
Owner	City of Windom, MN
Representative	Steve Nasby, City Administrator
Owner Address/Phone	City of Windom P.O. Box 38 Windom, MN 56101-0038
Design Engineer	DGR Engineering 1302 South Union Street Rock Rapids, Iowa 51246
Site Topographical Survey Prepared by	DGR Engineering 1302 South Union Street Rock Rapids, Iowa 51246
Site Area	1.40 Acres
Disturbed Area	1.09 Acres
Final Runoff Curve Number	Existing: 94 Proposed 94
Soil type	Topsoil, clayey sand or sandy lean clay
Receiving Waters	City of Windom Storm Sewer
Description of Proposed Activity	Reconstruct City Alleys
Expected Sequence of Major Construction Activity (Subject to change: any deviations to the plan shall be noted on this plan)	A. Temporary Erosion & Sediment Controls B. Site Grading & utilities C. Site Surfacing D. Final Stabilization E. Building Foundation F. Building Walls and Interior G. Remove Temporary Sediment Control Measures

LOCATION MAP:

The enclosed project plans shall be a part of this document.

PART 2: CONTROLS

CONTROL MEASURE MASTER INDEX

Use this index to track the status of all erosion & sediment control BMP's on your site as they relate to current construction phase. Note the corresponding number of the BMP on the erosion control plan (ie B3) and record installation and removal dates in the table. BMP's will not necessarily be removed during the same phase as their installation. Site conditions should dictate installation and removal.

NUMBER	CONTROL	DATE INSTALLED	DATE REMOVED
--------	---------	----------------	--------------

PHASE A - INITIAL SEDIMENT CONTROLS			
A1	Stabilized Construction Entrance		
A2	Silt Fence		
A3			
A4			
A5			
A6			
A7			

PHASE B – SITE GRADING & UTILITIES			
B1	Inlet Protection - Rock/compost tubes		
B2			
B3			
B4			
B5			

PHASE C - FINAL STABILIZATION			
C1	Site Surfacing & Paving		
C2	Seeding & Mulching		
C3			
C4			
C5			
C6			

Erosion and Sediment Controls

Measures to be used for controlling erosion and sediment throughout the construction project include stabilization measures for limiting soil erosion from disturbed areas and structural controls to divert runoff and remove sediment. Contractor/subcontractor is responsible for the implementation and management of control measures specific to this site. As work progresses, field investigation may indicate additional erosion control measures may be required as determined by the Contractor, Owner, Engineer, City or other governmentally regulated agencies.

1. Stabilization

- a. Preserve existing vegetation in areas not disturbed during construction.
- b. Undisturbed areas will utilize existing vegetation as a natural buffer zone to increase infiltration and sediment deposition by reducing runoff velocity.
- c. The total area of soil disturbed by construction operations at any time shall be held to a minimum.
- d. Soil Compaction - compaction of soils in area to be seeded or sodded will be kept to a minimum to increase infiltration of storm water runoff into the groundwater, reducing the amount of runoff.
- e. Temporary stabilization - areas where construction activity is not planned to occur for at least 14 days will be stabilized within 14 days of ceasing construction activities in that area by one or more of the following temporary erosion control methods:
 1. Topsoil stockpiles and disturbed portions of the site will be stabilized with temporary seed and mulch.
 2. Areas of the site to be paved will be temporarily stabilized with geotextile and stone sub-base until pavement can be installed.
 3. Frequent watering during construction in dry weather shall minimize wind erosion from exposed soil.
- f. Permanent Stabilization - areas where construction activity has permanently ended will be stabilized within 14 days of ceasing construction activities in that area by one or more of the following permanent erosion control measures:
 1. Sodding or permanent seeding/mulch and mulch in unpaved areas where final grading is complete.
- g. Dust Control - Mulch or surface watering will be utilized to control wind erosion of susceptible soils during and/or immediately after mass site grading operations.

2. Structural Controls

- a. At all areas where runoff can move offsite, silt fence, filter sock or approved equal will be installed along the perimeter of the project downstream of soil disturbing activities and storm water discharge points prior to site clearing and grading operations as required and/or shown on the plans.
- b. Provide silt fence, filter sock, or equivalent measures for all sideslopes and downstream boundaries of the disturbed area as required and/or shown on the plans.

- c. Inlet protection devices will be installed in all storm water intakes to protect storm sewers from sediment immediately after construction of the inlet.
- d. Additional erosion control measures may be required on embankments, stockpiles, and other areas to ensure runoff control.

B. Storm Water Management

Post construction storm water drainage will be facilitated by roof drains drainage swales for the developed areas. Runoff will be directed to onsite storm water management controls.

Measures implemented to control pollution of storm water after construction is complete include the following:

- 1. Undeveloped areas of the site will be graded at the slopes indicated and have permanent seeding and/or landscaping designed to reduce runoff velocities and increase infiltration.
- 2. Portions of the site will remain undisturbed and in its original vegetative state, limiting the amount of exposed soil and providing a vegetative buffer zone that will reduce runoff velocities and increase infiltration. Some of these portions will go back into row crops.
- 3. The creation of impervious area will be handled by the linear infiltration areas of the ditches and controlled by the permanent rock ditch checks.

C. Other Controls

Measures for controlling other sources of potential pollution that may exist on the construction site. During the course of construction, it is possible that situations may arise where unknown material will be encountered. When such situations occur, they will be handled according to all applicable federal, state, and local regulations in effect at the time.

1. Waste Materials

Disposal of unused construction materials and construction material wastes shall comply with applicable state and local waste disposal, sanitary sewer, or septic system regulations. In the event of a conflict with other governmental laws, rules and regulations, the more restrictive laws, rules, or regulations shall apply.

2. Hazardous Waste.

- a. Hazardous waste materials will be disposed of in accordance with applicable local, State and/or Federal regulations.
- b. Equipment refueling and maintenance operations will be carried out in such a manner so as to prevent any spills and contamination to the soil and ground water.
- c. Potentially hazardous materials will be used with great care to prevent spillage in any volume.

3. Vehicle Tracking

- a. Stabilized construction entrances and/or vehicle washing racks will be installed at all site access points to reduce vehicle tracking of sediment offsite.
- b. Paved streets adjacent to the site will be inspected daily and cleaned as necessary to remove any excess mud, dirt, or rock tracked from the site.
- c. Dump trucks hauling material from the site will be properly covered with a tarpaulin.
- d. Dust control measures will be used as necessary.

4. Sanitary Waste

A portable restroom facility may be located onsite at the contractor's discretion. Wastes will be collected and disposed of in complete compliance with local, State and Federal regulations. This facility will be located in an area where contact with storm water discharge is minimized.

D. Non-storm Water Discharges

1. Expected sources of non-storm water discharges from the site during construction may include:
 - a. Potable water sources, including water line flushing, irrigations drainage and firefighting activities.
 - b. Pavement/building wash waters where no spills or leaks of toxic or hazardous materials have occurred and excluding detergents.
 - c. Uncontaminated groundwater from de-watering excavations.
 - d. Natural springs, wetland, water sources.
 - e. Foundation or footing drains where flows have not been exposed to solvents.
2. Non-storm water flows will be discharged to a stabilized area or directed to a sediment retention device or other appropriate control measure prior to discharging off-site.

E. State and Local Requirements

1. The storm water pollution prevention plan reflects the State of Minnesota requirements for storm water management and erosion and sediment control as established in Code of Minnesota, MPCA Requirements pertaining to Erosion Control Plans.
2. Code Compliance: The contractor shall comply with the soil erosion control requirements of the Minnesota Code, the MPCA permit, and all local ordinances.

F. Sequence of Installation

1. Install perimeter silt fence, silt berms, & inlet protection where possible.
2. Grading & Installation of utilities

3. Construction of surfacing & paving
4. Complete topsoil, fine grading, permanent stabilization by seed/mulch, sod, or landscaping of all disturbed areas.
5. Building construction
6. Remove temporary sediment control measures after permanent seeding & landscaping is 70% established.

PART 3: CONSTRUCTION & IMPLEMENTATION

PROJECTED CONSTRUCTION SCHEDULE / CONSTRUCTION PROGRESS

Phase A - Initial Sediment Controls		
-------------------------------------	--	--

Initial control measure installation (Construction entrances, perimeter silt fence)			
Anticipated Start Date		Anticipated End Date	
Actual Start Date		Actual End Date	

Phase B – Grading & Utilities			
Anticipated Start Date		Anticipated End Date	
Actual Start Date		Actual End Date	

Phase C - Paving			
Anticipated Start Date		Anticipated End Date	
Actual Start Date		Actual End Date	

Phase D - Final Stabilization		
-------------------------------	--	--

Final Stabilization			
Anticipated Start Date		Anticipated End Date	
Actual Start Date		Actual End Date	

Maintenance

1. All documents related to the storm water discharge permit shall be kept on site at all times and must be presented to the MPCA or EPA upon request. This includes but is not limited to the Storm Water Pollution Prevention Plan, Notice of Intent, Proof of Publication, and project inspection diary.
2. This pollution prevention plan shall be revised as construction progresses to reflect current ownership, responsibilities, operations, and findings.
 - a. The plan will be revised due to any deficiencies in the plan or changes in conditions noted during an inspection, and the contractor will implement any and all revisions as soon as practical but no later than seven days after the inspection.
 - b. Maintain record of major construction operations start and ending dates and operators responsible for the various phases.
 - c. The plan will be modified within 14 calendar days of a hazardous condition describing the release, the date of release, and the circumstances leading to the release. Steps to prevent the reoccurrence of such releases will be identified in a plan revision and implemented.
3. Maintain all temporary and permanent erosion control measures in good working order by cleaning, repairing, replacement and sediment removal throughout the permit period. Any necessary repairs will be initiated within 24 hours of report.
 - a. Built up sediment will be removed from sediment barrier (silt fence or filter sock) or the silt barrier replaced when it has reached 1/3 the height of the barrier.
 - b. Accumulation of earth, silt or debris on adjoining properties or streets will be minimized. Remove any accumulation of earth, silt or debris immediately and take remedial actions for prevention.
 - c. Minor spill of potentially hazardous materials will be cleaned up by removing and disposing of contaminated soils properly. Major spills shall be reported in accordance with the code of Minnesota with clean-up procedures dependent on the severity of the spill.

B. Inspections

1. The contractor will be responsible for selecting a “qualified” inspector to conduct the inspections. “Qualified” is defined as a person knowledgeable in the principles and practices of erosion and sediment controls who possesses the skills to assess conditions at the construction site that could impact storm water quality and to assess the effectiveness of any sediment and erosion control measures selected to control the quality of storm water discharges from the construction activity.

2. The project area and control devices will be inspected by the personnel assigned by the contractor every 7 calendar days and within 24 hours after each rain event of 1/2" or greater or heavy snow melt. The findings and any actions taken as a result of this inspection shall be recorded in the project diary with a copy submitted weekly to the owner or owner's representative during the project.
 - a. Inspect silt fence for depth of sediment, tears, fabric securely attached to posts, posts firmly in the ground, fabric firmly in the ground, and signs of undermining.
 - b. Inspect filter socks for depth of sediment, tears, posts firmly in ground, firm contact between sock and ground, and signs of flow under the sock.
 - c. Inspect inlet protection devices for level of sediment, bypassing of flows, and ensure that overflow device is not plugged.
 - d. Inspect storm outlets for signs of sediment from the site and erosion at the outlet.
 - e. Inspect adjoining property for signs of sediment from site.
 - f. Inspect construction entrance for sediment accumulation.
 - g. Inspect street for track-out.
 - h. Inspect seeding for bare spots, washouts and healthy growth.
 - i. Inspect concrete washout area for depth of accumulated material, evidence of flows leaving the area and diversion of surface runoff away from the washout area.

C. Material Management

Site sources of pollution generated as a result of this work related to silts and sediment which may be transported as a result of a storm event are included as part of this SWPPP. However, this SWPPP provides conveyances for other (non-project related) operations. These other operations have storm water runoff, the regulation of which is beyond the control of this SWPPP.

1. Materials or substances expected to be present onsite during construction:

- a. Concrete
- b. Detergents
- c. Paints
- d. Tar
- e. Soil stabilization additives
- f. Fertilizers
- g. Petroleum based additives
- h. Cleaning solvents
- i. Wood
- j. Solids and construction wastes
- k. Pesticides
- l. Fuel
- m. Curing compounds
- n. Paint

(Contractor shall list additional materials not shown)

- o.

- p.
- q.
- r.

2. Material Management Practices - the following is a list of practices that will be used onsite to minimize the risk of spills or other accidental exposure of materials and substances to storm water runoff.

a. Good Housekeeping

- i. An effort will be made to store onsite only enough products required to complete the job.
- ii. All materials stored onsite will be kept in a neat, orderly manner and in their appropriate containers. If possible, products shall be kept under a roof or other enclosure.
- iii. Materials will be kept in their original containers with the original manufacturer's label.
- iv. Substances will not be mixed with one another unless recommended by the manufacturer.
- v. Whenever possible, all of a product will be used up before disposing of the container.
- vi. Manufacturer's recommendations for proper use and disposal will be followed.
- vii. The job site superintendent will be responsible for daily inspections to ensure proper use and disposal of materials.

b. Hazardous Products

- i. Products will be kept in their original containers with the original manufacturer's label.
- ii. The original labels and material safety data will be kept for each of the materials as they contain important product information.
- iii. Disposal of any excess product will be done in a manner that follows all manufacturers', federal, local and state recommended methods for proper disposal.

(Contractor shall list additional practices, as appropriate, used to prevent hazardous material discharge).

- iv.
- v.
- vi.
- vii.
- viii.
- ix.
- x.

Product Specific Practices - the following is a list of potential sources of pollution and specific practices to reduce pollutant discharges from materials or sources expected to be present during construction.

- c. Petroleum Storage Tanks
 - i. All onsite vehicles shall be inspected and monitored for leaks and receive preventative maintenance to reduce the chance of leakage.
 - ii. Steps will be taken by the contractor to eliminate contamination from storage tanks from entering the soil. Any petroleum storage tanks kept onsite will be located with an impervious surface between the tank and the ground.
- d. Fertilizers - shall be applied in minimal amounts as recommended by the manufacturer. It shall be worked into the soil as to minimize the contact with storm water discharge.
- e. Paints, paint solvents and cleaning solvents - Excess paints and solvents shall not be discharged into the storm sewer system. The contractor shall refer to the manufacturer's instructions and federal regulations on the proper disposal techniques.
- f. Concrete wastes
 - i. Concrete trucks will be allowed to washout or discharge excess concrete only in specifically designated areas which have been prepared to minimize contact between the concrete and storm water discharge from the site.
 - ii. The hardened product from the concrete washout areas will be disposed of as other non-hazardous waste materials or may be broken up and used on the site for other appropriate uses.
- g. Solid and construction wastes - All trash and construction debris shall be deposited into a dumpster that will be emptied as necessary. No construction waste materials will be buried on site. The dumpsters must be put in a location where contact with storm water discharge is minimized..

(Contractor shall list additional potential sources of pollution and practices to reduce pollutant discharge.)

- h.
- i.
- j.
- k.
- l.

3. Hazardous Substance Spill Prevention and Response

- a. The contractor is responsible for training all personnel in the proper handling and cleanup of spilled materials. No spilled hazardous materials or wastes will be allowed to come into contact with storm water discharges. If contact does occur, the storm water discharge will be contained on site until appropriate measures in compliance with all Federal, state, and local regulations are followed to dispose of the hazardous substance.
- b. In addition to Good Housekeeping and material management practices, the following practices shall be done to minimize the potential for hazardous materials spills and to reduce the risk of the spill coming in contact with storm water.
 - i. Manufacturer's recommended methods for spill cleanup will be clearly posted and site personnel will be trained regarding these procedures and the location of the information and cleanup supplies.

- ii. Material and equipment necessary for spill control, containment and cleanup will be provided onsite in a material storage area. Equipment and materials will include but not be limited to brooms, dust pans, mops, rags, gloves, goggles, kitty litter, sand, sawdust and plastic and meal trash containers.
- c. In the event of a spill, the following procedures will be followed:
 - i. All spills will be cleaned up immediately following discovery.
 - ii. The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with the hazardous substance.
 - iii. Spill of toxic or hazardous material will be reported to the appropriate state or local government agency and to the project manager and engineer, regardless of the size of the spill.
- d. In the event the construction site has a release of a hazardous substance of oil in an amount which exceeds a reportable quantity (RQ) as defined at 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302, then the permittee shall:
 - i. Person in charge of the site at the time of the spill shall call the EPA National Response Center to report the spill (800-424-8802, or 202-426-2675).
 - ii. Modify the Pollution Prevention Plan accordingly within 14 days of the spill, including the items mentioned below.
 - iii. Within 14 days of the release, submit a written description of the release including: a description of the release, type of material, estimated amount of spill, date of release, explanation of why the spill happened, and a description of the steps taken to prevent and control future releases.

PART 4: FINAL STABILIZATION/DISCONTINUATION

A. Final Stabilization/Discontinuation

1. The storm water discharge from a construction activity is no longer considered to be a discharge subject to the storm water permit requirements when final stabilization has been reached and temporary erosion and sediment controls have been or will be removed. A permittee must submit a Notice of Termination (NOT) to inform the MPCA that storm water discharge for the site will no longer need to be covered by the general permit.
2. "Final Stabilization" - the point at which all soil disturbing activities are complete, and a uniform perennial vegetative cover with a density of 70% of the cover for unpaved areas and areas not covered by permanent structures has been established or equivalent permanent stabilization measures have been employed.
3. Notice of Discontinuation should be mailed to the following address:

Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, MN 55155-4194
4. All plans, inspection reports and other related documents must be retained for a period of three years after project completion. The contractor shall retain a record copy and provide the original documents to the owner upon issuance of the NOT.

PART 5: CERTIFICATION

A. Storm Water Pollution Prevention Plan Certification

1. This project is subject to section 402(b) of the Clean Water Act and IAC 455 B.174 Subrule 567-64.4 (projects disturbing one or more total acres) and requires inclusion in the National Pollutant Discharge Elimination System (NPDES) General Permit No. 2 of individual NPDES Permit for storm water discharge associated with industrial activity for construction activities.
2. The Owner and prime contractor must sign the following certification statements. By doing so, the prime contractor becomes co-permittee with the owner and other co-permittee contractors. The prime contractor must identify which contracting entity will be responsible for each portion of the pollution prevention plan and maintain the site in compliance with the plan and NPDES Permit. The certification must be signed in accordance with the signatory requirements found in the general permit: i.e., principal executive officer, vice president , general partner, proprietor, elected official, and will be incorporated into the pollution prevention plan.
3. All subcontractors, including short-term contractors and subcontractors must sign the appropriate certification statement before conducting any work at the site. The Certification must be signed in accordance with the signatory requirements found in the general permit: i.e., principal executive officer, vice president , general partner, proprietor, elected official, and will be incorporated into the pollution prevention plan.
4. Upon signing the certification, the contractor or subcontractor becomes a co-permittee with the owner and other co-permittee contractors. In signing the plan, the authorizing representative certifies that the information is true and assumes liability for the plan and its implementation. Note that Section 309 of the Clean Water Act provides for significant penalties where information is false or the permittee violates, either knowingly or negligently, the permit requirements.

Owner's Certification
for
NPDES General Permit No. 2 "Storm Water Discharge
Associated with Industrial Activity for Construction Activities"

Project: 2025 Alley Improvements

Location Windom, MN

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature

Printed Name Steve Nasby

Title City Administrator

Company City of Windom

Address P.O. Box 38

Windom, MN 56101-0038

Telephone (507) 831-6129

Date of Certification

Contractor's Certification
for
NPDES General Permit No. 2 "Storm Water Discharge
Associated with Industrial Activity for Construction Activities"

Project: 2025 Alley Improvements

Location Windom, MN

I certify under penalty of law that I understand the terms and conditions of the general National Pollutant Discharge Elimination System (NPDES) permit that authorizes the storm water discharges associated with industrial activity from the construction site as part of this certification. Further, by my signature, I understand that I am becoming a co-permittee, along with the owner(s) and other contractors and subcontractors signing such certifications, to the Minnesota Pollution Control Agency NPDES General Permit No. 2 for "Storm Water Discharge Associated with Industrial Activity for Construction Activities" at the identified site. As a co-permittee, I understand that I, and my company, are legally required under the Clean Water Act and the Code of Minnesota, to ensure compliance with the terms and conditions of the storm water pollution prevention plan developed under this NPDES permit and the terms of this NPDES permit.

Signature _____

Printed Name _____

Title _____

Company _____

Address _____

Telephone _____

Date of Certification _____

APPENDIX A-1

**APPLICATION FOR GENERAL STORMWATER PERMIT
FOR CONSTRUCTION ACTIVITY**



**Minnesota Pollution
Control Agency**

520 Lafayette Road North
St. Paul, MN 55155-4194

Application for General Stormwater Permit for Construction Activity

(NPDES/SDS Permit: MN R100001)
Construction Stormwater Permit Program

Doc Type: Permit Application

Instructions on Page 4

To obtain a Submittal Number, please contact the Construction Stormwater Program staff at 651-757-2119 or 800-657-3804 or by e-mail at csw.pca@state.mn.us. **Note:** this form will be returned to sender without a Submittal Number granted by the Minnesota Pollution Control Agency (MPCA).

Submittal No.: _____

Please read: All permits must be applied for online unless granted a Submittal Number from the MPCA. Sites that disturb 50 acres or more and have a discharge point within one mile of, and flows to, a Special or Impaired Water listed in Appendix A of the Construction Stormwater General Permit must apply using this form with the MPCA-granted Submittal Number, 30 days before the anticipated start date. Mail, fax, or deliver this Permit Application, Stormwater Pollution Prevention Plan (SWPPP), and the required attachments (if applicable) to the MPCA. SWPPPs may be submitted electronically to: csw.pca@state.mn.us or you may request other electronic means of submittal.

This form is for new permit applications only. Use the *Notice of Termination/Permit Modification* form to transfer permit coverage for a project or a portion of a project to a new owner/contractor. Forms are available at the MPCA's Construction Stormwater website: <http://www.pca.state.mn.us/water/stormwater/stormwater-c.html>.

Please refer to the application instructions and the National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) General Stormwater Permit for Construction Activity (MN R100001) as you complete this form. Brackets '[']' refer to specific parts of the permit.

**Submit form and
check to:** Fiscal Services – 6th floor
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, MN 55155-4194

Questions: Call the Construction Stormwater Program at
651-757-2119 or toll-free at 800-657-3804.

Application Checklist (check to determine if ready to apply)

1. Stormwater Pollution Prevention Plan (SWPPP):

- a. Has a SWPPP been developed for this project and incorporated into the project's plans and specifications as required in the General Stormwater Permit [Part III.A]? ☒ Yes ☐ No
- b. If an environmental review was required for this project or any part of a common plan of development or sale that includes this project, has this review been completed and all Stormwater related mitigation measures contained in it incorporated into the SWPPP [Part III.A.6]? ☐ Yes ☐ No ☒ N/A

2. Discharges to special or impaired waters:

- a. If any portion of the project has a discharge point within one mile (aerial radius measurement) of a special water or a water that is impaired for sediment or a sediment related parameter [Appendix A, Part B.10], does the SWPPP contain the additional requirements found in Appendix A, Part A-C? If the project does not have a discharge point within one mile of a special water or a water that is impaired for sediment or a sediment related parameter of the permit indicate 'NA'. ☐ Yes ☐ No ☒ N/A

Stop if you responded 'No' to any question above.
A SWPPP must be developed prior to submitting a permit application.
Complete the above requirements and check 'Yes' before submitting this application.
Continue if you responded 'Yes' or 'N/A' to all questions above.

3. Additional application review:

- a. Will the project disturb 50 acres or more **and** is there a discharge point within one mile of an impaired or special water whose discharge may reach an impaired or special water listed in Appendix A of the permit? [Part II.B.1.b] If yes, this application and the SWPPP must be submitted a minimum of 30 days before construction starts. ☐ Yes ☒ No
- b. If 'Yes,' is the SWPPP (including a map of the project) included with this application or has it been submitted to the MPCA? ☐ Yes ☒ No

4. Application fee:

- a. Is the required \$400 Application Fee (payable to the MPCA) enclosed? ☒ Yes

Construction Activity Information

5. Project name:

2025 Alley Improvements

6. Project location:

- a. Briefly describe where the construction activity occurs (For example: "Intersection of 45th St. and Irving Ave.") Include address if available:

Alley between 8th/9th Street between 3rd/4th Avenue and alley between 10th/11th Street between 3rd/5th Avenue

- b. List all of the cities where the project will occur:

Windom

- c. List all of the counties where the project will occur:

Cottonwood

- d. List all of the townships where the project will occur:

Great Bend

- e. Project zip code: 56101-0038

- f. Latitude and longitude of approximate centroid of project:

Latitude: ° N (decimal) Preferred

Longitude: ° W (decimal) Preferred

43 ° 51 ' 52 " N (degrees, minutes, seconds)

95 ° 07 ' 28 " W (degrees, minutes, seconds)

- g. Method used to collect latitude and longitude:

☐ GPS ☐ USGS topographic map – map scale: _____ ☒ Other: Google Earth

7. Project size:

Number of acres to be disturbed to the nearest tenth acre: 1.09 acres

8. Project type:

- | | |
|---|---|
| ☒ Residential | ☐ Residential/Road construction |
| ☐ Commercial/Industrial | ☐ Commercial/Road construction |
| ☐ Road construction | ☐ Commercial/Residential/Road construction |
| ☐ Other: _____ | |

9. Cumulative impervious surface:

- a. Existing area of impervious surface in acres: 1.09

- b. Post-construction area of impervious surface in acres (If additional new impervious surface created by the project is less than one acre, skip to Question 11): 1.09

10. Permanent stormwater management:

Check the type (**check all that apply**) of permanent stormwater management that will be used if one or more acres of new impervious surface area is created by this project [Part III.D].

- ☐ Infiltration
☐ Stormwater harvest and reuse
☐ Filtration
☐ Wet sedimentation basin
☐ Regional ponding
☐ Other (e.g., payment in lieu of onsite treatment, green roofs or other technologies)

11. Receiving waters:

Identify surface waters within one mile of project boundary that will receive stormwater from the site or discharge from permanent stormwater management system. Include waters shown on USGS 7.5 minute quad or equivalent, and all Special Waters and Impaired waters identified in Appendix A of the permit (To find Special or Impaired Waters, use the [Special and Impaired Waters Search tool](http://www.pca.state.mn.us/water/stormwater/stormwater-c.html) at <http://www.pca.state.mn.us/water/stormwater/stormwater-c.html>). The Impaired Waters* list, also known as the Section 303(d) list can be found at <http://www.pca.state.mn.us/water/tmdl/index.html>. Attach additional paper if necessary.

* Impaired waters for the purpose of this permit are those identified as impaired for the following pollutant(s) or stressor(s): phosphorus, turbidity, dissolved oxygen, or biotic impairment.

Name of water body	Type of water body (Ditch, pond, wetland, stream, river, calcareous fen)	Special Water? (See Stormwater Permit, Appendix A)	Impaired Water? (See Stormwater Permit, Appendix A)
Des Moines	River	☐ Yes ☒ No	☒ Yes ☐ No
		☐ Yes ☐ No	☐ Yes ☐ No
		☐ Yes ☐ No	☐ Yes ☐ No
		☐ Yes ☐ No	☐ Yes ☐ No

12. Dates of construction:

Note: For the purposes of this permit, the construction start date is defined as the day land disturbing activity is expected to commence.

a. Start date (mm/dd/yyyy): 7/21/2025 b. Estimated completing date (mm/dd/yyyy): 10/24/2025

13. Applicant type:

Select the title below that best describes you as the person completing this application for this Permit.

- ☐ Owner of project or site (company)
☒ Operator/General contractor
☐ 3rd party agent of behalf of permittee

Both parties must sign

This form will not be accepted if the owner and contractor contact information sections are not completed and signed. Note: If the owner is also the contractor, or a contractor has not yet been selected, the owner must also fill out the contractor information section and sign again.

Certification

Owner

Name of firm or organization: City of Windom

Mailing address: P.O. Box 38

City: Windom State: MN Zip code: 56101-0038

Contact name: Steve Nasby Title: City Administrator

Contact phone: (507) 831-6129 E-mail: steve.nasby@windommn.com

Alternate contact: _____ Phone: _____ E-mail: _____

Operator/General Contractor

Name of firm or organization: _____

Mailing address: _____

City: _____ State: _____ Zip code: _____

Contact name: _____ Title: _____

Contact phone: _____ E-mail: _____

Alternate contact: _____ Phone: _____ E-mail: _____

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage this system, or the persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

I also certify under penalty of law that I have read, understood, and accepted all terms and conditions of the NPDES/SDS General Stormwater Permit Construction Activity (MN R100001) that authorizes stormwater discharges associated with the construction site identified on this form.

Authorized signatures

This application must be signed by:

- **Corporation:** a principal executive officer of at least the level of vice-president or the duly authorized representative or agent of the executive officer if the representative or agent is responsible for the overall operation of the facility that is the subject of the permit application.
- **Partnership or Sole Proprietorship:** a general partner or the proprietor.
- **Municipality, State, Federal, or Other Public Agency:** principal executive officer or ranking elected official.

Owner:

Print name: Steve Nasby

Title: City Administrator Date: 5/29/25

Signature: _____

Operator/General Contractor

Print name: _____

Title: _____ Date: _____

Signature: _____

Instructions

Submission of an application is notice that the owner and general contractor identified on the application intend to be authorized by an NPDES/SDS permit issued for Stormwater discharges associated with a construction activity in the State of Minnesota.

All permits must be applied for online unless granted a Submittal Number from the Minnesota Pollution Control Agency (MPCA). Sites that disturb 50 acres or more and have a discharge point within one mile of a Special or Impaired Water listed in Appendix A of the Construction Stormwater General Permit must apply using this form with the MPCA granted Submittal Number, 30 days before the anticipated start date. Mail, fax, or deliver this Permit Application, Stormwater Pollution Prevention Plan (SWPPP), and the required attachments (if applicable) to the MPCA. SWPPPs may be submitted electronically to: csw.pca@state.mn.us or you may request other electronic means of submittal.

To obtain a Submittal Number, please contact the Construction Stormwater Program staff at 651-757-2119 or 800-657-3804 or by e-mail at csw.pca@state.mn.us. Note: this form will be returned to sender without a Submittal Number granted by the Minnesota Pollution Control Agency (MPCA).

Application Checklist (check to determine if ready to apply)

1. Indicate if a **Stormwater Pollution Prevention Plan** (SWPPP) has been prepared and the appropriate sections (a. and b. of this question) have been addressed by answering “**Yes**” or “**No**.” A SWPPP is a plan for Stormwater discharge that includes erosion prevention measures and sediment controls that, when implemented, will decrease soil erosion on a parcel of land and decrease pollution in receiving waters. This plan must be developed prior to submitting a permit application. A sample plan and development tools are available from the U.S. Environmental Protection Agency (EPA) Stormwater Pollution Prevention Plans for Construction Activities website at <http://cfpub1.epa.gov/npdes/stormwater/swppp.cfm> and from the MPCA “[Stormwater Compliance Tool Kit for Small Construction Operators](#)”.

For section “b” indicate if an **Environmental Review** has been completed if required, by answering “**Yes**” or “**No**” or “**N/A**” (not applicable). Environmental review looks at how a proposed project could potentially affect the environment and looks at ways to avoid or minimize impacts before the project is permitted and built. Examples of categories that may need an environmental review include residential development; industrial, commercial, and institutional facilities; and also highway projects. For certain projects, environmental review is mandatory. For more details see the [Guide to Minnesota Environmental Review Rules, Chapter 6](#) found on the Department of Administration website at <http://www.mnplan.state.mn.us/>.

2. Discharges to Special or Impaired Waters
 - a. Special waters have qualities that warrant extra protection. There are several categories of special waters and the requirements are different for each. A list of these special water categories can be found in Appendix A of the permit. The additional requirements apply only to those portions of a project that drain to a discharge point on the project that is within one mile of and flows to the special water. Refer to Appendix A of the permit for the list of special waters and what additional requirements apply to each. The information is also available using the [Special and Impaired Waters Search Tool](#) found on the MPCA Stormwater Program for Construction Activity webpage at <http://www.pca.state.mn.us/wfhy5b>.

Impaired waters are bodies of water that do not meet the water quality standards set up for their designated use as determined by the State. Projects discharging to impaired waters also have additional requirements. The additional requirements apply only to those portions of a project that drain to a discharge point on the project that is within 1 mile of and flows to the impaired water. The specific requirements can be found in Appendix A of the permit. Impaired waters for the purpose of this permit are limited to those identified as impaired pursuant to section 303(d) of the Clean Water Act where the pollutant(s) or stressor(s) are phosphorus (nutrient eutrophication biological indicators), turbidity, dissolved oxygen, or biotic impairment (fish bioassessment, aquatic plant bioassessment and aquatic macroinvertebrate bioassessment). Use the interactive [Special and Impaired Waters Search Tool](http://www.pca.state.mn.us/wfhy5b) (found on the MPCA Stormwater Program for Construction Activity webpage at <http://www.pca.state.mn.us/wfhy5b>) to determine if your project is required to follow the additional requirements. On the application, indicate if the SWPPP for the project incorporates the additional requirements, if applicable. Consult the MPCA's Minnesota Impaired Waters and TMDLs webpage at <http://www.pca.state.mn.us/xgqx950> for additional information including a list of impaired waters.

3. Additional Application Review

- a. If the project disturbs **50 acres or more** and has a discharge point (including sheet flow) that is within one mile of and flows to an impaired or special water listed in Appendix A, the application and SWPPP need to be submitted to the MPCA a minimum of **30** days prior to the start of construction.
 - b. Include the SWPPP with the application or submit it to the MPCA electronically. SWPPPs may be submitted electronically to: csw.pca@state.mn.us or you may request other electronic means of submittal.
4. The application requires a \$400 application **fee**. Indicate that the application fee has been enclosed by answering “**Yes**.” Please make checks payable to: **Minnesota Pollution Control Agency** and submit the check with the completed application to: Fiscal Services- 6th Floor, Minnesota Pollution Control Agency, 520 Lafayette Road North, St. Paul, MN 55155-4194. Applications received without the required fee will be returned to the sender.

Construction Activity Information

5. List the construction project's **name**. Be specific. Examples: “Driveway at 123 Main St, Hudson,” “Highway 169 bridge replacement (#79605) at the Rum River.”
6. Project Location
 - a. Provide an **address** (if available) and **brief description** of the construction activity's location (*for example*, “*North West Corner of the Intersection of 45th Street and Irving Avenue, Minneapolis, MN*”). Use any type of description that accurately portrays the project location.
 - b-e. Provide the names of all cities, counties, zip codes, and townships the construction activity takes place in (*for example*, *a roadway may cross county, city, or township boundaries*).
 - f. Give the latitude and longitude of the centroid of the site. If the centroid of the site is not within the site, give the latitude and longitude of a point within the site that is closest to the centroid of the site. Give these values in degrees and decimal of degrees (preferred) alternatively in degrees, minutes and seconds. To obtain the decimals of a degree, divide the minutes by 60 and the seconds by 360 and add this to the degrees.
 - g. State how the information was gathered, if by GPS, by using a USGS topographic map (give the scale), or an online tool, such as the Toxics Release Inventory Facility Siting Tool found on the EPA's website at <http://www2.epa.gov/toxics-release-inventory-tri-program>. To use this tool, type either the zip code or the city/township and the state. Zoom in to obtain the latitude and longitude.
7. List, in acres, the **amount** of area that will be **disturbed** for this project. This is not the size of the property; do not include areas of the project that will not be disturbed.
8. Indicate the type of construction activity by **checking the appropriate box**. Check “Residential and Road Construction” if the road is part of a common plan of development and is developed in association with residential development. If you check “Other”, describe the project.
9. Indicate to the nearest quarter acre, the existing and resulting **areas of impervious surfaces**. Impervious surface means a constructed hard surface that either prevents or retards the entry of water into the soil and causes water to run off the surface in greater quantities and at an increased rate of flow than prior to development. **Examples** include rooftops, sidewalks, patios, driveways, parking lots, storage areas, and concrete, asphalt, or gravel roads. (a.) “Existing” area means the area of impervious surface that is present prior to the start of this construction project. (b.) “Post construction” means the entire area of impervious surface after construction is completed. Subtract (a.) from (b.) to determine the area of new impervious surface.
10. For projects creating one or more acres of cumulative new impervious surfaces, **check the appropriate box** to indicate which type(s) of **permanent stormwater management practices** will be used. The “Other” box is limited to those situations (such as proximity to bedrock) that are described in Part III.D of the permit. See the permit for a further description. If the “Other” box is checked, describe which situation outlined in Part III. D fits the project and what other permanent treatment (such as grassed swales, smaller ponds and/or grit chambers) will be used on the project.

11. **Briefly** describe which **water body(s)** will receive stormwater runoff from the construction site or from the discharge from permanent Stormwater management systems by **completing the table**. To determine which water body(s) will receive stormwater runoff discharges, make a brief survey of the project's surrounding area. Include the waters identified on a USGS 7.5-minute quad or equivalent map. See Appendix A [Special Waters List](#) of this permit to determine if a water body is a special water found on the MPCA Stormwater Program for Construction Activity website at <http://www.pca.state.mn.us/wfhy5b>. Impaired waters for the purpose of this permit are those identified as impaired for the following pollutant(s) or stressor(s) phosphorus (nutrient eutrophication biological indicators), turbidity, dissolved oxygen, or biotic impairment (fish bioassessment, aquatic plant bioassessment and aquatic macroinvertebrate bioassessment). The easiest way to find special or impaired waters in addition to all waterbodies is to use the interactive map tool, [Special and Impaired Waters Search tool](#) (found on the MPCA Stormwater Program for Construction Activity webpage at <http://www.pca.state.mn.us/wfhy5b>).
12. List the **start** and estimated **completion dates** of the construction project.
13. Select the title that best describes the person completing this application for this Permit.

Responsible Parties

14. **Owner Information:** Provide the information requested of the owner of the company, organization, or other entity for which this construction project is being done. The **Owner** means the person or party possessing the title of the land on which the construction activities will occur; or if the construction activity is for a lease, easement, or mineral rights license holder, the party or individual identified as the lease, easement or mineral rights license holder; or the contracting government agency responsible for the construction activity. **The owner is the party responsible for the compliance with all terms and conditions of the permit.** The **alternate contact** should be the owner's representative in charge of the project that the MPCA can, if needed, contact regarding the SWPPP or the conditions of the construction site.

After completing this application, certify it with a **signature and date** from an individual authorized to sign the application. This application form must be signed by either a principal executive officer, vice president, representative agent responsible for overall operations, general partner, or a proprietor. If the activity is being conducted by a unit of government (state, county, municipality, or township), this application must be signed by a principal executive officer or ranking elected official (**for example**, city or county engineer, administrator, or manager; director of public works; mayor, etc.) For additional information, see Minnesota Rules 7001.0060.

15. **Contractor (Operator) Information:** Provide the information requested of the contractor. The **Contractor** means the party who signs the construction contract with the owner to construct the project described in the final plans and specifications. Where the construction project involves more than one contractor, the general contractor will be the party responsible for managing the project on behalf of the owner. In some cases the owner may be the general contractor. In these cases, the owner may contract an individual as the operator who would be the co-permittee. **The operator (usually the general contractor) is jointly responsible with the owner for compliance with Part II.B., Part II.C., and Part IV of the permit.**

After this application has been completed by the owner, the contractor must certify it with a **signature and date** from an individual authorized to sign the form. The application must be signed by either a principal executive officer, vice president, representative agent responsible for overall operations, general partner, or a proprietor. If the general contractor is a unit of government (state, county, municipality, or township), this application must be signed by a principal executive officer, ranking elected official, administrator, manager, coordinator, or engineer. (For additional information, see Minnesota Rules 7001.0060.) The **alternate contact** should be the contractor's representative in charge of the project that the MPCA can, if needed, contact regarding the SWPPP or the conditions of the construction site.

APPENDIX A-2
INSPECTION REPORTS

EROSION CONTROL SITE INSPECTION REPORT

PROJECT: 2025 Alley Improvements **DATE:** _____

FILE NO: 373179 **TIME:** _____

CONTRACTOR: _____ **OWNER:** City of Windom, MN

LOCATION: _____

WEATHER: _____

INSPECTION TYPE: Scheduled / After Weather Event / Follow-Up / Complaint / Other _____

DAYS SINCE LAST RAINFALL _____ **Amount of Last Rainfall** _____

No.		Yes	No	Not Applicable
1.	Erosion control practices in place and functioning? (mulch, seeding, blankets)			
2.	Sediment traps, barriers and basins clean and functioning properly?			
3.	Sediment controls in place at site perimeter and storm drain inlets?			
4.	Discharge points free of any noticeable pollutant discharges?			
5.	Sediment, mud and debris being cleaned from public roads?			
6.	Are there adequate provisions to prevent mud tracking off site?			
7.	Is there evidence that sediment is leaving the site and onto adjacent properties?			
8.	Are utility trenches being backfilled properly, tamped and seeded immediately?			
9.	All exposed slopes protected from erosion through acceptable soil stabilization practices?			
10.	Temporary stockpiles or construction materials located in approved areas and protected from erosion?			
11.	Is the site seeded and mulched or blanketed?			
12.	Do any seeded areas require maintenance, fertilization, reseeding or weed control?			
13.	Are dust control measures appropriately implemented?			

No.		Yes	No	Not Applicable
14.	Material handling and storage, and equipment storage and maintenance areas clean and free of spills and leaks?			
15.	On-site traffic routes, parking and storage restricted to designated areas?			
16.	Do any structural measures require repair or clean-out to maintain adequate function?			
17.	Are ALL erosion control devices in place and functioning in accordance with the site's erosion control plan?			

PROBLEMS IDENTIFIED/ACTION TAKEN:

OBSERVATIONS/COMMENTS:

Inspection Report Certification Statement

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

INSPECTOR'S NAME: _____

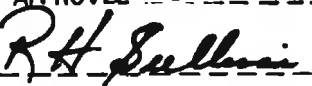
COMPANY: _____

COPIES TO:

APPENDIX A-3

NOTICE OF TERMINATION

STANDARD PLATES AND DETAIL DRAWINGS

APPROVED Aug. 31, 1989

 Director
 Materials, Research and Standards

STATE OF MINNESOTA
 DEPARTMENT OF TRANSPORTATION
 REINFORCED CONCRETE PIPE
 B WALL

SPECIFICATION
 REFERENCE
 2501, 2502, 2503
 REVISED
 4-30-99 A.K.J.

STANDARD
 PLATE
 NO.
 3000L
 1 OF 5

INTERNAL DIA. OF PIPE, INCHES	WEIGHT PER LIN. FT. OF PIPE	MIN. WALL THICKNESS INCHES	CLASS I		CLASS II		CLASS III		CLASS IV		CLASS V	
			D - LOAD TO PRODUCE A 0.01 INCH CRACK (LBS./LIN. FT. OF DIA.)				D - LOAD TO PRODUCE ULTIMATE LOAD (LBS./LIN. FT. OF DIA.)					
			800		1000		1350		2000		3000	
			D - LOAD TO PRODUCE ULTIMATE LOAD (LBS./LIN. FT. OF DIA.)		1500		2000		3000		3750	
			CONCRETE 4000 P.S.I.		CONCRETE 4000 P.S.I.		CONCRETE 4000 P.S.I.		CONCRETE 4000 P.S.I.		CONCRETE 6000 P.S.I.	
D	POUNDS	INCHES	INNER CAGE	OUTER CAGE	INNER CAGE	OUTER CAGE	INNER CAGE	OUTER CAGE	INNER CAGE	OUTER CAGE	INNER CAGE	OUTER CAGE
12	92	2	—	—	0.07 (2)	—	—	0.07	—	—	0.10	—
15	127	2-1/4	—	—	0.07 (2)	—	—	0.10	—	—	0.14	—
18	168	2-1/2	—	—	0.07 (2)	—	—	0.14	—	—	0.19	—
21	214	2-3/4	—	—	0.07 (2)	—	—	0.20	—	—	0.24	—
24	265	3	—	—	0.07 (2)	—	—	0.27	—	—	0.30	—
27	322	3-1/4	—	—	0.13	—	—	0.31	—	—	0.38	0.23
30	384	3-1/2	—	—	0.14	—	—	0.35	—	—	0.41	0.25
33	452	3-3/4	—	—	0.15	—	—	0.27	0.16	0.46	0.46	0.28
36	524	4 (3)	—	—	0.12	0.07	0.17 (3)	0.10	0.30	0.18	0.30	0.30
42	685	4-1/2	—	—	0.15	0.09	0.21	0.13	0.35	0.21	0.60	0.36
48	867	5	—	—	0.18	0.11	0.24	0.14	0.42	0.25	0.73	0.44
54	1070	5-1/2	—	—	0.22	0.13	0.29	0.17	0.50	0.30	0.74 (1)	0.44
60	1296	6	0.21	0.13	0.25	0.15	0.34	0.20	CONCRETE 5000 PSI			
									0.59	0.35	0.81 (1)	0.49
66	1542	6-1/2	0.25	0.15	0.31	0.19	0.41	0.25	0.69	0.41	0.88 (1)	0.53
72	1810	7	0.29	0.17	0.35	0.21	0.49	0.29	0.79	0.47	0.95 (1)	0.57
78	2098	7-1/2	0.32	0.19	0.40	0.24	0.57	0.34	0.70 (1)	0.42	1.03 (1)	0.62
84	2410	8	0.37	0.22	0.46	0.28	0.64	0.38	0.75 (1)	0.45	1.12 (1)	0.67
90	2740	8-1/2	0.41	0.25	0.51	0.31	CONCRETE 5000 PSI		0.82 (1)	0.49	1.20 (1)	0.72
							0.69	0.41				
96	3090	9	0.46	0.28	0.57	0.34	0.76	0.46	0.88 (1)	0.53	1.30 (1)	0.78
102	3470	9-1/2	0.54	0.32	0.68	0.41	0.90	0.54	0.94 (1)	0.56	1.42 (1)	0.85
108	3860	10	0.61	0.37	0.76	0.46	1.08	0.65	1.00 (1)	0.60	1.50 (1)	0.90

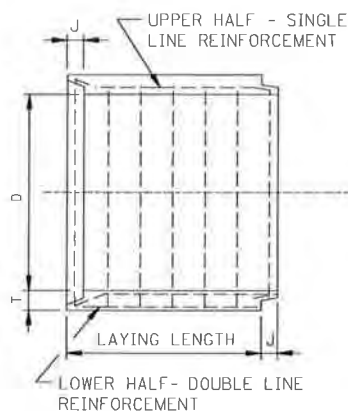
NOTES:

SEE SHEETS 2 TO 5 FOR ADDITIONAL INFORMATION ON PIPE SECTIONS AND GENERAL NOTES.

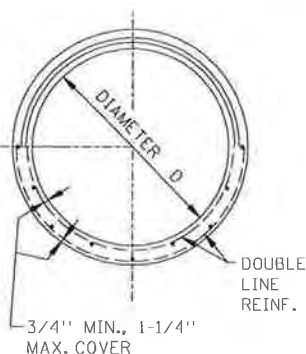
STANDARD PLATE 3006, GASKET JOINT R.C. PIPE, MAY BE FURNISHED IN LIEU OF 3000 PIPE, THE GASKET REQUIRED FOR 3006 PIPE WILL NOT BE REQUIRED; HOWEVER, THE APPROPRIATE PROVISIONS OF THE SPECIFICATIONS RELATING TO FILLING THE JOINT SPACE WITH AN APPROVED SEALER OR FULL CIRCUMFERENTIAL WRAP OF GEOTEXTILE MATERIAL SHALL APPLY.

- CLASS IV PIPE 78 INCHES OR MORE IN DIAMETER AND CLASS V PIPE 54 INCHES OR MORE IN DIAMETER ARE SPECIAL DESIGNS AND REQUIRE SHEAR STEEL. FOR SPECIAL DESIGNS SEE SHEET 4 OF 5.
- FOR THESE CLASSES AND SIZES, THE MINIMUM PRACTICAL STEEL REINFORCEMENT IS SPECIFIED. THE ACTUAL ULTIMATE STRENGTH IS GREATER THAN THE MINIMUM STRENGTH SPECIFIED FOR NONREINFORCED PIPE OF EQUIVALENT DIAMETERS IN AASHTO M86.
- AS AN ALTERNATIVE, SINGLE CAGE REINFORCEMENT MAY BE USED. THE REINFORCEMENT AREA IN SQUARE INCHES PER LINEAR FOOT SHALL BE 0.30 FOR WALL B.

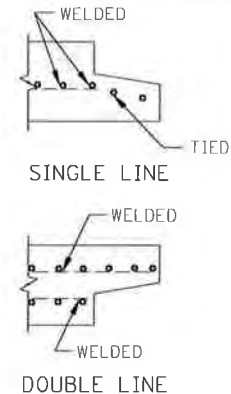
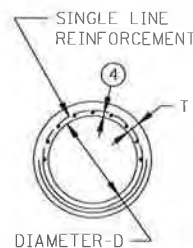
INTERNAL DIA. OF PIPE, (INCHES)	WEIGHT PER LIN. FT. OF PIPE	WALL THICKNESS	CLASS II		CLASS III		CLASS IV		CLASS V		
			D - LOAD TO PRODUCE A 0.01 INCH CRACK (POUNDS PER LIN. FT. PER FT. OF DIA.)								
			1000		1350		2000		3000		
			D - LOAD TO PRODUCE ULTIMATE LOAD (LBS. PER LIN. FT. PER FT. OF DIA.)								
			1500		2000		3000		3750		
CONCRETE 4000 P.S.I.		CONCRETE 4000 P.S.I.		CONCRETE 4000 P.S.I.		CONCRETE 6000 P.S.I.					
T		MINIMUM REINFORCEMENT SQUARE INCHES PER LINEAL FOOT OF BARREL ①									
D	LBS.	INCHES	INNER CAGE	OUTER CAGE	INNER CAGE	OUTER CAGE	INNER CAGE	OUTER CAGE	INNER CAGE	OUTER CAGE	
12	140	2-3/4	— ②	—	— ②	—	— ②	—	—	0.08 ⑤	—
15	180	3	— ②	—	— ②	—	— ②	—	—	0.08 ⑤	—
18	230	3-1/4	— ②	—	— ②	—	— ②	—	—	0.10 ⑤	—
21	280	3-1/2	— ②	—	— ②	—	— ②	—	—	0.15 ⑤	—
24	340	3-3/4	— ②	—	—	—	—	0.07	0.07	0.12	0.07
27	410	4	— ②	—	—	—	—	0.08	0.07	0.14	0.08
30	480	4-1/4	— ②	—	—	—	—	0.09	0.07	0.18	0.11
33	510	4-1/2	— ②	—	—	—	—	0.11	0.07	0.23	0.14
36	630	4-3/4 ③	0.07	0.07	0.08 ③	0.07	0.14	0.08	0.27	0.16	
42	810	5-1/4	0.10	0.07	0.12	0.07	0.20	0.12	0.36	0.22	
48	1010	5-3/4	0.14	0.08	0.16	0.10	0.26	0.16	0.47	0.28	
54	1230	6-1/4	0.17	0.10	0.21	0.13	0.34	0.20	0.58	0.35	
60	1470	6-3/4	0.22	0.13	0.25	0.15	0.41	0.25	0.70 ①	0.42	
66	1740	7-1/4	0.25	0.15	0.31	0.19	0.51	0.31	0.84 ①	0.50	
72	2010	7-3/4	0.30	0.18	0.36	0.22	CONCRETE 5000 P.S.I.				
78	2330	8-1/4	0.35	0.21	0.42	0.25	0.61	0.37	0.99 ①	0.59	
84	2640	8-3/4	0.41	0.25	0.50	0.30	0.85	0.51			
90	3000	9-1/4	0.48	0.29	CONCRETE 5000 P.S.I.						
96	3370	9-3/4	0.55	0.33	0.59	0.35					
			CONCRETE 5000 P.S.I.		0.70	0.42					
102	3760	10-1/4	0.62	0.37	0.83	0.50					
108	4170	10-3/4	0.70	0.42	0.99	0.59					



TYPICAL LONGITUDINAL SECTION



HALF SECTIONS



REINFORCING AT ENDS OF PIPE

NOTES:

SEE SHEET 5 OF 5 FOR ADDITIONAL INFORMATION ON C WALL PIPE SECTIONS AND GENERAL NOTES.

STANDARD PLATE 3006, GASKET JOINT R.C. PIPE, MAY BE FURNISHED IN LIEU OF 3000 PIPE. THE GASKET REQUIRED FOR 3006 PIPE WILL NOT BE REQUIRED; HOWEVER, THE APPROPRIATE PROVISIONS OF THE SPECIFICATIONS RELATING TO FILLING THE JOINT SPACE WITH AN APPROVED SEALER OR FULL CIRCUMFERENTIAL WRAP OF GEOTEXTILE MATERIAL SHALL APPLY.

- ① AN INNER CIRCULAR CAGE PLUS AN ELLIPTICAL CAGE SUCH THAT THE AREA OF THE ELLIPTICAL CAGE SHALL NOT BE LESS THAN THAT SPECIFIED FOR THE OUTER CAGE IN THE TABLE AND THE TOTAL AREA OF THE INNER CIRCULAR CAGE PLUS THE ELLIPTICAL CAGE SHALL NOT BE LESS THAN THAT SPECIFIED FOR THE INNER CAGE IN THE TABLE.
- ② FOR THESE CLASSES AND SIZES, THE MINIMUM PRACTICAL STEEL REINFORCEMENT IS SPECIFIED. THE ACTUAL ULTIMATE STRENGTH IS GREATER THAN THE MINIMUM STRENGTH SPECIFIED FOR NONREINFORCED PIPE OF EQUIVALENT DIAMETERS IN AASHTO M86.
- ③ AS AN ALTERNATIVE, FOR CLASS II AND III A SINGLE CAGE REINFORCEMENT MAY BE USED. THE REINFORCEMENT AREA IN SQUARE INCHES PER LINEAL FOOT SHALL BE 0.20 FOR WALL C.
- ④ 35 TO 50 PERCENT OF T EXCEPT WHEN WALL THICKNESS IS LESS THAN 3-1/2 INCHES-THEN 3/4 INCHES OF COVER.
- ⑤ SINGLE LINE REINFORCEMENT.

APPROVED Aug. 31, 1989

 Director
 Materials, Research and Standards

STATE OF MINNESOTA
 DEPARTMENT OF TRANSPORTATION
 REINFORCED CONCRETE PIPE
 C WALL

SPECIFICATION
 REFERENCE
 2501, 2502, 2503

REVISED
 4-30-99 A.K.J.

STANDARD
 PLATE
 NO.
 3000L
 2 OF 5

INTERNAL DIAMETER OF PIPE IN INCHES	CROSS SECTION WATER AREA	LENGHT OF JOINT	NOMINAL - A				
		J					
D	SQ. FT.	INCHES					
12	0.79	1-3/4	3/16	13-1/4	13-5/8	13-7/8	14-1/4
15	1.23	2	3/16	16-1/2	16-7/8	17-1/4	17-5/8
18	1.77	2-1/4	3/16	19-5/8	20	20-3/8	20-3/4
21	2.40	2-1/2	3/16	22-7/8	23-1/4	23-3/4	24-1/8
24	3.14	2-3/4	3/16	26	26-3/8	27	27-3/8
27	3.98	3	3/16	29-1/4	29-5/8	30-1/4	30-5/8
30	4.91	3-1/4	3/16	32-3/8	32-3/4	33-1/2	33-7/8
33	5.94	3-1/2	1/4	35-1/2	36	36-3/4	37-1/4
36	7.07	3-3/4	1/4	38-3/4	39-1/4	40	40-1/2
42	9.62	4	1/4	45-1/8	45-5/8	46-1/2	47
48	12.57	4-1/4	1/4	51-1/2	52	53	53-1/2
54	15.90	4-1/2	1/4	57-7/8	58-3/8	59-3/8	59-7/8
60	19.63	5	1/4	64-1/4	64-3/4	66	66-1/2
66	23.76	5-1/2	1/4	70-5/8	71-1/8	72-1/2	73
72	28.27	6	1/4	77	77-1/2	79	79-1/2
78	33.18	6-1/2	1/4	83-3/8	83-7/8	85-5/8	86-1/8
84	38.48	7	1/4	89-3/4	90-1/4	92-1/8	92-5/8
90	44.18	7	1/4	95-3/4	96-1/4	98-1/8	98-5/8
96	50.27	7	1/4	102-1/8	102-5/8	104-1/2	105
102	56.75	7-1/2	1/4	109	109-1/2	111-1/2	112
108	63.62	7-1/2	1/4	115-1/2	116	118	118-1/2

TOLERANCES IN DIMENSIONS:

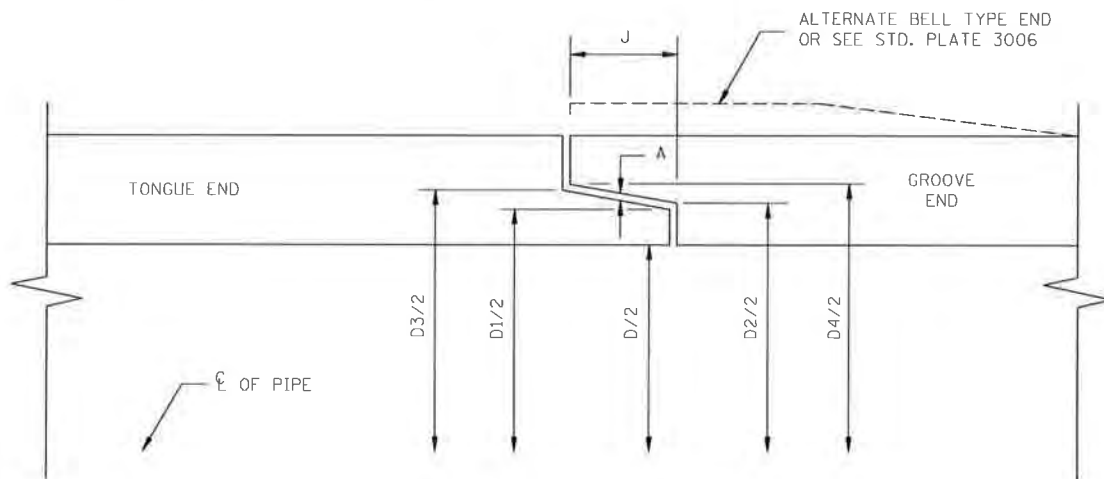
D: $\pm 1.5\%$ FOR 12" TO 24" D, $\pm 1\%$ OR 3/8"
WHICHEVER IS GREATER FOR 27" TO 108" D.

D1, D2, D3, AND D4: $\pm 3/16"$ FOR 12" TO 30" D,
 $\pm 1/4"$ FOR 33" TO 108" D.

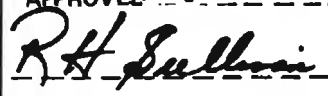
T: NOT LESS THAN THE DESIGN T BY MORE THAN
5% OR 3/16" WHICHEVER IS GREATER.

J: ALL SIZES $\pm 1/4"$.

LAYING LENGTH: SHALL NOT UNDERRUN BY MORE
THAN 1/2".



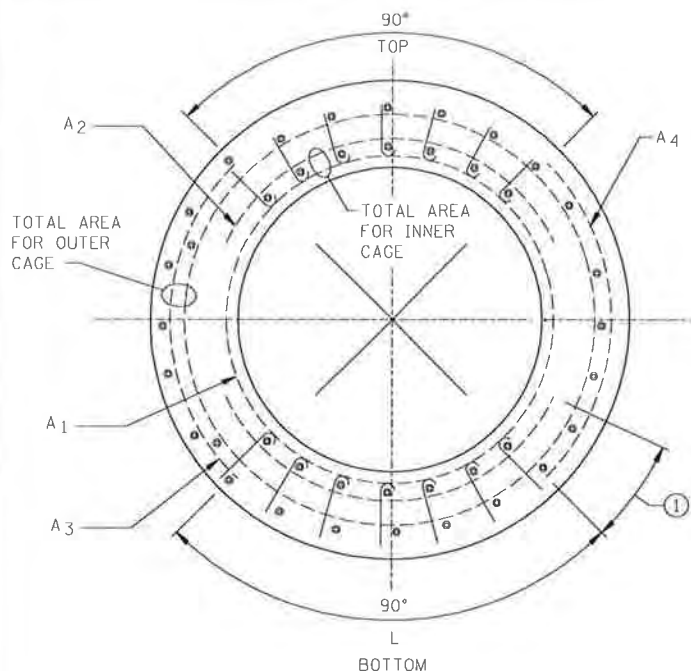
SECTION AT PIPE JOINT

APPROVED Aug. 31, 1989

 Director
 Materials, Research and Standards

STATE OF MINNESOTA
 DEPARTMENT OF TRANSPORTATION
 REINFORCED CONCRETE PIPE
 JOINT DIMENSIONS FOR B-WALL AND C-WALL

SPECIFICATION
 REFERENCE
 2501
 2502
 2503

STANDARD
 PLATE
 NO.
 3000L
 3 OF 5



CROSS SECTION FOR
SPECIAL DESIGN PIPES

NOTES:

SEE SHEET 1 FOR INNER AND OUTER CAGE REINFORCEMENT.

$A_1 + A_2$ = TOTAL INNER CAGE REINFORCEMENT.

$A_3 + A_4$ = TOTAL OUTER CAGE REINFORCEMENT.

POINT OR INDENT LEGIBLE MARKS AT ONE END OF EACH SECTION ON THE INSIDE AND OUTSIDE OF OPPOSITE WALLS DESIGNATING THE CENTER OF STIRRUP REINFORCEMENT.

THE TOP OF THE PIPE SHALL BE APPROPRIATELY MARKED OR STENCILED BOTH ON THE INSIDE AND OUTSIDE SURFACES.

① THE CAGES MUST BE ASSEMBLED WITH THE OUTER MAT OVERLAPPING THE INNER MAT BY A DISTANCE EQUAL TO ONE PIPE WALL THICKNESS OR GREATER.

A_1 = REINFORCING OF FULL CIRCULAR INNER CAGE.

A_2 = REINFORCING OF INNER LAP SECTION, 90° MINIMUM ARC.

A_3 = REINFORCING OF FULL CIRCULAR OUTER CAGE.

A_4 = REINFORCING OF OUTER LAP SECTION, 90° MINIMUM ARC.

A_r = MINIMUM RADIAL REINFORCING REQUIRED IN SQUARE INCHES PER SQUARE FOOT OF PIPE OVER A MINIMUM 90° ARC AT TOP AND BOTTOM OF PIPE. HOOK DESIGN MUST BE APPROVED BY MATERIALS SECTION.

THE FULL CIRCULAR CAGES MUST HAVE AN AREA EQUAL TO AT LEAST 40% OF THE REQUIRED TOTAL AREA.

L = LENGTH OF 90° ARC MEASURED AT INNER CAGE.

N = MINIMUM NUMBER OF ROWS OF RADIAL REINFORCING AT TOP AND BOTTOM OF PIPE.

S = MAXIMUM CIRCUMFERENTIAL SPACING OF ROWS OR RADIAL REINFORCING AT OUTER CAGE.

INTERNAL DIA. OF PIPE	LENGTH OF 90° ARC	WALL THICKNESS	SHEAR STEEL					
			CLASS IV			CLASS V		
D	L	T	N	S	A_r	N	S	A_r
54"	44"	5-1/2"	—	—	—	12	4"	0.22
60"	49"	6"	—	—	—	10	6"	0.22
66"	54"	6-1/2"	—	—	—	10	6"	0.22
72"	59"	7"	—	—	—	11	6"	0.23
78"	63"	7-1/2"	12	6"	0.25	12	6"	0.25
84"	68"	8"	13	6"	0.28	13	6"	0.28
90"	73"	8-1/2"	13	6"	0.31	13	6"	0.31
96"	77"	9"	14	6"	0.34	14	6"	0.34
102"	82"	9-1/2"	15	6"	0.37	15	6"	0.37
108"	87"	10"	16	6"	0.40	16	6"	0.40

APPROVED Aug. 31. 1989

R.H. Sullivan
Director
Materials, Research and Standards

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION
REINFORCED CONCRETE PIPE
REINFORCEMENT INFORMATION
SPECIAL DESIGN PIPES

SPECIFICATION
REFERENCE

2501
2502
2503

STANDARD
PLATE
NO.

3000L
4 OF 5

REINFORCEMENT:

REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS AASHTO M 170.

IF THE SPLICES ARE NOT WELDED, CIRCUMFERENTIAL REINFORCEMENT SHALL BE LAPPED NOT LESS THAN 20 DIAMETERS FOR DEFORMED BARS AND DEFORMED COLD-WORKED WIRE, AND 40 DIAMETERS FOR PLAIN BARS AND COLD-DRAWN WIRE. IN ADDITION, WHERE LAPPED CAGES OF WELDED-WIRE FABRIC ARE USED WITHOUT WELDING, THE LAP SHALL CONTAIN A LONGITUDINAL WIRE. ALL CIRCULAR AND LONGITUDINAL REINFORCEMENT SHALL BE ASSEMBLED AND SECURELY FASTENED CAGE FASHION SO AS TO MAINTAIN REINFORCEMENT IN EXACT SHAPE AND CORRECT POSITION WITHIN THE FORM.

REINFORCEMENT WILL BE CONSIDERED AS MEETING THE DESIGN REQUIREMENTS IF THE AREA, COMPUTED ON THE BASIS OF NOMINAL AREA OF THE WIRE OR BARS USED, EQUALS OR EXCEEDS THE ABOVE REQUIREMENT. ACTUAL AREA OF THE REINFORCING USED MAY VARY FROM THE NOMINAL AREA ACCORDING TO PERMISSIBLE VARIATIONS OF THE STANDARD SPECIFICATIONS FOR THE REINFORCING.

THE COVER OVER THE CIRCUMFERENTIAL STEEL SHALL BE AS SHOWN ON THIS PLATE BUT IN NO CASE SHALL THE COVER BE LESS THAN 3/4 INCHES AS MEASURED TO THE INSIDE WALL SURFACE OR THE OUTSIDE WALL SURFACE, EXCEPT IN THE TONGUE AND GROOVE. REINFORCING STEEL MAY BE OMITTED FROM EITHER THE TONGUE OR GROOVE ENDS OF 12 INCH THRU 33 INCH DIAMETER PLAIN ROUND PIPE ONLY OF B WALL SINGLE CAGE. BELL ENDS WITH O-RING GASKETS SHALL HAVE REINFORCEMENT IN THEM.

THE SPACING CENTER TO CENTER OF ADJACENT RINGS OF CIRCUMFERENTIAL REINFORCEMENT IN A CAGE SHALL NOT EXCEED 4 INCHES FOR PIPE UP TO AND INCLUDING PIPE HAVING A 4 INCH WALL THICKNESS NOR EXCEED THE WALL THICKNESS FOR LARGER PIPE, AND SHALL IN NO CASE EXCEED 6 INCHES. THE CONTINUITY OF THE CIRCUMFERENTIAL REINFORCING STEEL SHALL NOT BE DESTROYED DURING THE MANUFACTURE OF THE PIPE.

GENERAL NOTES:

THE STRENGTH TEST REQUIREMENTS IN POUNDS-FORCE PER LINEAL FOOT OF PIPE UNDER THE THREE-EDGE-BEARING METHOD SHALL BE COMPUTED BY MULTIPLYING THE INTERNAL DIAMETER OF THE PIPE IN FEET BY THE D-LOADS (EXPRESSED IN POUNDS-FORCE PER LINEAL FOOT OF DIAMETER) TO PRODUCE THE 0.01 INCH CRACK AND THE ULTIMATE LOAD SPECIFIED ON SHEETS 1 AND 5 OF THIS STANDARD PLATE.

PIPES 60 INCHES IN DIAMETER OR GREATER AND ALL CENTER LINE CULVERTS SHALL HAVE TIED JOINTS.

NOT MORE THAN TWO LIFT HOLES WILL BE PERMITTED IN EACH SECTION OF PIPE. TAPERED PLUGS SHALL BE FURNISHED FOR CLOSING LIFT HOLES.

GASKET LUBRICATION SHALL BE AS PER MANUFACTURER'S RECOMMENDATIONS.

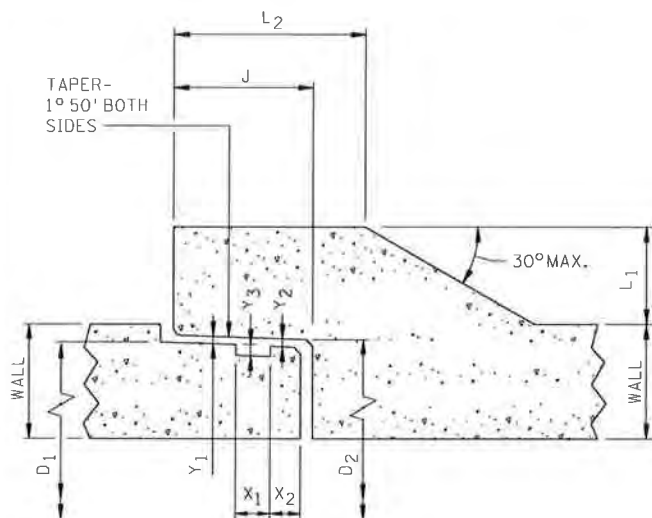
LAYING LENGTH:

THE NOMINAL LAYING OF ALL PIPE SHALL NOT BE LESS THAN 6 FEET EXCEPT THAT NOT MORE THAN TWO 4 FOOT LENGTHS OF PIPE WILL BE PERMITTED IN A LINE OF PIPE TO MAKE THE REQUIRED TOTAL LENGTH. FOR ALL DIAMETERS OF PIPE ONE SECTION OF ANY ODD LENGTH GREATER THAN 4 FEET WILL BE PERMITTED IN EACH LINE OR REACH OF PIPE TO MAKE THE REQUIRED TOTAL LENGTH. PIPE SECTIONS SHORTER THAN THE NOMINAL LAYING LENGTH SHALL BE INSTALLED NEAR THE MIDDLE OF THE LINE OR AS DIRECTED BY THE ENGINEER.

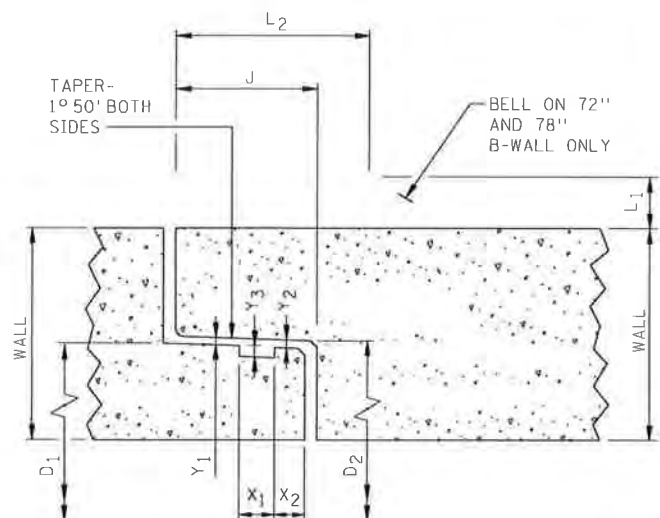
BASIS FOR DESIGN: AASHTO M170

APPROVED Aug. 31, 1989  Director Materials, Research and Standards	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION REINFORCED CONCRETE PIPE GENERAL NOTES	SPECIFICATION REFERENCE 2501 2502 2503	STANDARD PLATE NO. 3000L 5 OF 5
---	---	--	---

DIAM. D IN.	APPROX. DIA. GASKET MATERIAL INCHES NOT STRETCHED	GASKET VOLUME IN CU. IN.	LENGTH OF JOINT J INCHES	D ₁ INCHES	D ₂ INCHES	(MIN.) L ₂ INCHES	B-WALL L ₁ INCHES	C-WALL L ₁ INCHES	X ₁ INCHES	X ₂ INCHES	Y ₁ INCHES	Y ₂ INCHES	Y ₃ INCHES
12	21/32	13.5	3-5/8	15.223	15.331	5	2	0	1	7/8	0.062	0.090	0.313
15	21/32	16.5	3-5/8	18.723	18.831	4-3/4	2-3/16	0	1	7/8	0.062	0.090	0.313
18	21/32	19.5	3-5/8	22.098	22.206	5	2-3/8	0	1	7/8	0.062	0.090	0.313
21	21/32	22.5	3-7/8	25.600	25.724	5-1/4	2-9/16	0	1	7/8	0.062	0.090	0.313
24	21/32	25.5	3-7/8	28.975	29.099	5-1/2	2-3/4	2	1	7/8	0.062	0.090	0.313
27	21/32	29.0	4	32.476	32.608	5-1/2	2-3/4	2	1	7/8	0.062	0.090	0.313
30	21/32	32.0	4	35.976	36.108	5-1/2	2-3/4	2	1	7/8	0.062	0.090	0.313
33	21/32	35.0	4-1/8	39.476	39.616	5-3/4	2-7/8	2-1/8	1	7/8	0.062	0.090	0.313
36	21/32	38.0	4-1/8	42.976	43.116	6	3-1/8	2-3/8	1	7/8	0.062	0.090	0.313
42	3/4	59.0	4-5/8	50.021	50.183	6-3/4	3-3/4	3	1-3/16	1	0.067	0.129	0.376
48	3/4	67.0	4-3/4	57.023	57.193	7-1/4	4-1/8	3-3/8	1-3/16	1	0.067	0.129	0.376
54	3/4	74.0	5	63.007	63.192	7-1/2	3-5/8	2-7/8	1-3/16	1	0.067	0.129	0.376
60	3/4	81.0	5	69.007	69.192	7-1/2	3-1/8	2-3/8	1-3/16	1	0.067	0.129	0.376
66	3/4	88.0	5	75.007	75.192	7-1/2	2-3/4	2	1-3/16	1	0.067	0.129	0.376
72	13/16	106.0	5-1/4	79.250	79.400	8 *	3/4	0	1-3/16	1-1/4	0.093	0.190	0.376
78	13/16	116.0	5-1/4	86.250	86.400	8 *	3/4	0	1-3/16	1-1/4	0.093	0.190	0.376
84	13/16	123.0	5-1/4	91.500	91.650	0	0	0	1-3/16	1-1/4	0.093	0.190	0.376
90	13/16	131.0	5-1/4	97.750	97.900	0	0	0	1-3/16	1-1/4	0.093	0.190	0.376
96	13/16	140.0	5-1/4	104.250	104.400	0	0	0	1-3/16	1-1/4	0.093	0.190	0.376
102	13/16	149.0	5-1/4	110.750	110.900	0	0	0	1-3/16	1-1/4	0.093	0.190	0.376
108	13/16	157.0	6-3/8	117.250	117.400	0	0	0	1-3/16	1-1/4	0.130	0.190	0.376



66" PIPE AND SMALLER ①



72" PIPE AND LARGER

NOTES:

SEE STANDARD PLATE 3000 FOR PIPE DESIGN.

THE ENGINEER MAY APPROVE A CHANGE IN THE SIZE OF THE NOTCH AND GASKET.
A WRITTEN REQUEST FOR APPROVAL OF SUCH CHANGE WILL BE REQUIRED

TOLERANCES IN DIMENSIONS:

JOINT DIMENSIONS ARE NOMINAL AND SUBJECT TO REASONABLE MANUFACTURING TOLERANCES. THE TONGUE AND GROOVE SHALL BE SUCH THAT WHEN THE PIPE IS JOINTED WITH THE GASKET IN PLACE A PROPER FIT IS OBTAINED. FINAL ACCEPTANCE OF THE PIPE WILL BE AT THE JOB SITE AFTER EFFECTIVE JOINTING HAS BEEN OBTAINED.

DIMENSIONS SHOWN ARE DESIGN DIMENSIONS, INSPECTORS SHALL MEASURE TO THE NEAREST 1/8 OF AN INCH.

GASKET VOLUMES: ± 4 PERCENT FOR PIPE 72" AND LARGER, ± 10 PERCENT FOR UNDER 72".

① SEE SHEET 2 FOR OPTIONAL BELL REINFORCEMENT, CLEARANCES AND NOTES.

APPROVED AUGUST 8, 1994

Donald J. Rofronch
STATE DESIGN ENGINEER

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

GASKET JOINT FOR R.C. PIPE

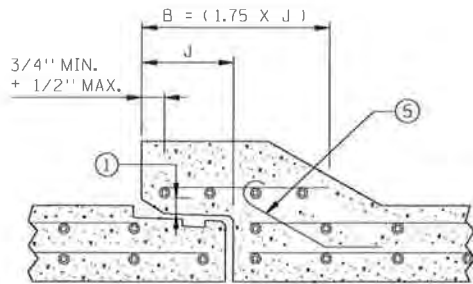
SPECIFICATION
REFERENCE

2501
2502
2503

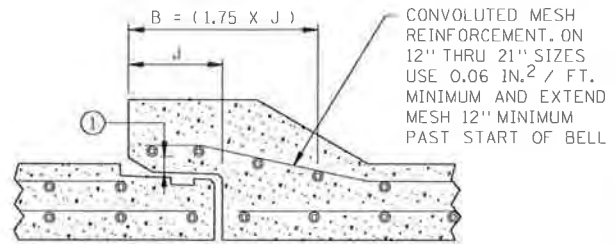
STANDARD
PLATE
NO.

3006G

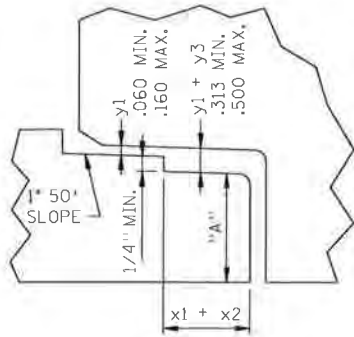
1 OF 2



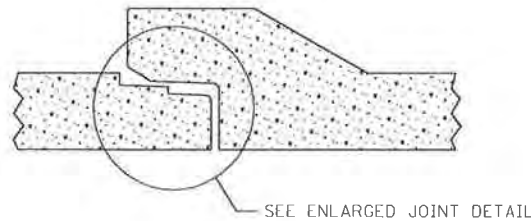
CYLINDRICAL CAGE DETAIL



CONVOLUTED CAGE DETAIL



ENLARGED JOINT DETAIL



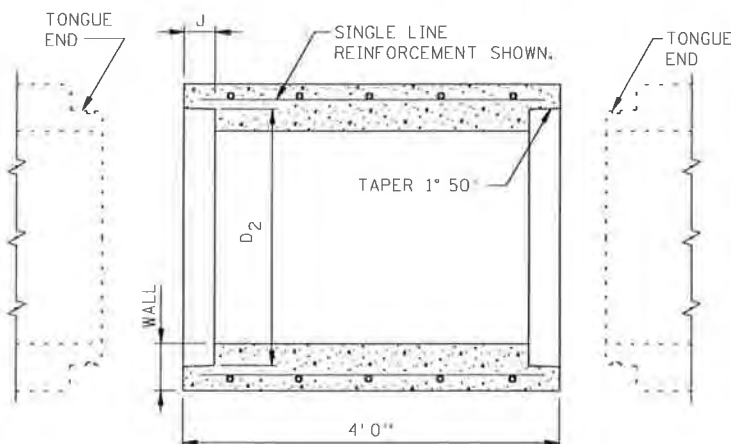
OPTIONAL TONGUE DETAIL
(REINFORCEMENT NOT SHOWN)

BASIS FOR DESIGN:
AASHTO M170

INT. DIA. PIPE	JOINT LENGTH	SPIGOT THICKNESS
	x1 + x2	"A"
12"	1.75	1.15
15"		1.50
18"		1.70
21"		1.95
24"		2.15
27"		2.40
30"		2.65
33"		2.90
36"		3.15
48"	1.75	3.15

OPTIONAL BELL STEEL REINFORCEMENT
(66" PIPE AND SMALLER PIPE)

INTERNAL DIAMETER	12"	15"	18"	21"	24"	27"	30"
WALL	4"	4-3/8"	4-7/8"	5-1/4"	5-3/4"	6"	6-1/4"
STEEL INSIDE (SQ. IN./ LIN. FT.)	.08	.08	.10	.12	.12	.14	.18
STEEL OUTSIDE (SQ. IN./ LIN. FT.)				.08	.08	.08	.11



OPTIONAL TRANSITION PIPE
(CONNECT TONGUE END TO TONGUE END)

NOTES:

- REINFORCING IN BELL SHALL BE LOCATED BETWEEN 3/4" TO 1-1/4" MESH FROM INNER FACE OF BELL.
- THE BELL CAGE SHALL BE AT LEAST AS WIDE AS DIMENSION B.
- FOR DOUBLE CAGE PIPE, REINFORCEMENT SHALL BE AT LEAST EQUAL IN AREA TO THAT OF THE OUTSIDE CAGE OR LINE FOR BELLS OR THE INSIDE CAGE OR LINE FOR SPIGOTS. FOR SINGLE CAGE PIPE, REINFORCEMENT SHALL BE AT LEAST EQUAL IN AREA TO THAT OF THE CAGE FOR EITHER THE BELL OR SPIGOT. BELL CAGES SHALL NOT HAVE FEWER LONGITUDINALS THAN THE MAIN CAGE.
- SEE SHEET 1 FOR ALL DIMENSIONS OTHER THAN BELL REINFORCEMENT.
- USE A MINIMUM OF THREE NO.3 HOOK TIES EQUALLY SPACED; MAXIMUM SPACING SHALL BE 24".

APPROVED AUGUST 8, 1994

Donald J. Rofen

STATE DESIGN ENGINEER

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

GASKET JOINT FOR R.C. PIPE
(OPTIONS)

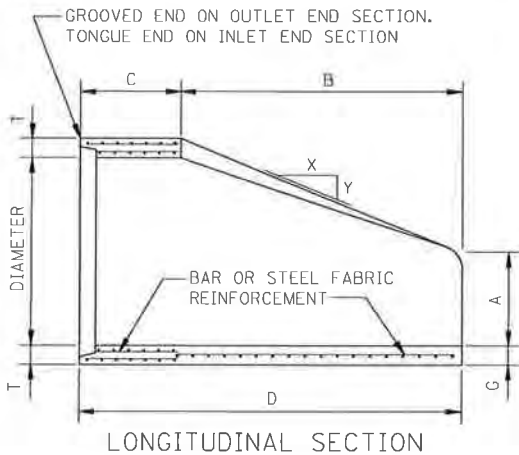
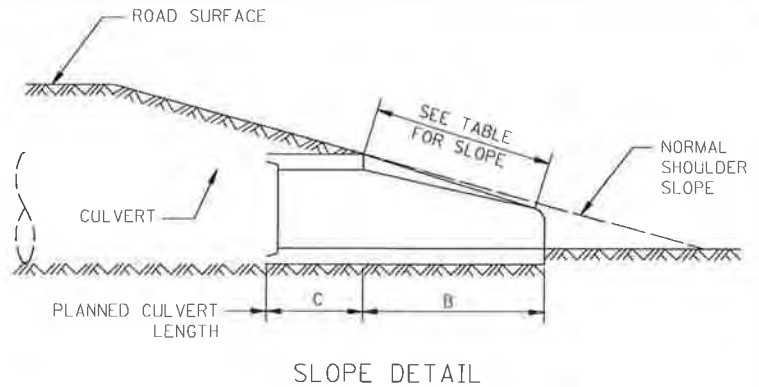
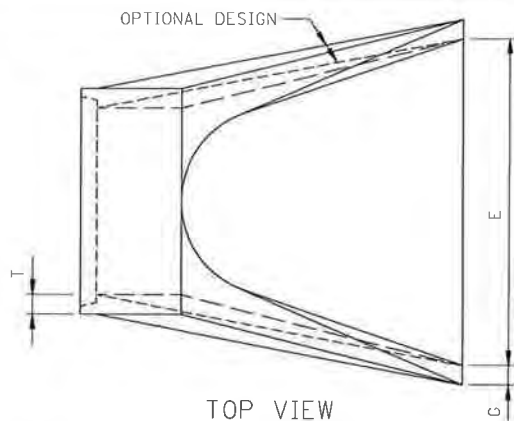
SPECIFICATION
REFERENCE
2501 2502 2503

REVISED
10-17-97

STANDARD
PLATE
NO.

3006G

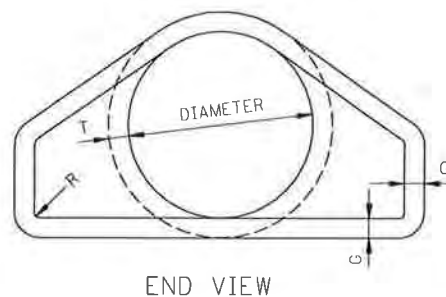
2 OF 2



SLOPE = Y TO X

ROUNDED EDGE PERMITTED ON SLOPED END "B".

HANDLING HOLES SHALL BE PROVIDED AS NECESSARY FOR HANDLING OF APRONS.



SEE STD. PLATE 3000 FOR ADDITIONAL REQUIREMENTS

DIAM.	WEIGHT PER SECTION (LBS.)	APPROX. SLOPE Y TO X	T	A	B	C	D	E	G	R	(S)
12"	530	1 TO 2.4	2"	4"	24"	48-7/8"	72-7/8"	24"	2"	1-1/2"	0.07
15"	740	1 TO 2.4	2-1/4"	6"	27"	46"	73"	30"	2-1/4"	1-1/2"	0.07
18"	990	1 TO 2.3	2-1/2"	9"	27"	46"	73"	36"	2-1/2"	1-1/2"	0.07
21"	1280	1 TO 2.4	2-3/4"	9"	36"	37-1/2"	73-1/2"	42"	2-3/4"	1-1/2"	0.07
24"	1520	1 TO 2.5	3"	9-1/2"	43-1/2"	30"	73-1/2"	48"	3"	1-1/2"	0.07
27"	1930	1 TO 2.5	3-1/4"	10-1/2"	49-1/2"	24"	73-1/2"	54"	3-1/4"	1-1/2"	0.13
30"	2190	1 TO 2.5	3-1/2"	12"	54"	19-3/4"	73-3/4"	60"	3-1/2"	1-1/2"	0.14
36"	4100	1 TO 2.5	4"	15"	63"	34-3/4"	97-3/4"	72"	4"	1-1/2"	0.12
42"	5380	1 TO 2.5	4-1/2"	21"	63"	35"	98"	78"	4-1/2"	1-1/2"	0.15
48"	6550	1 TO 2.5	5"	24"	72"	26"	98"	84"	5"	1-1/2"	0.18
54"	8240	1 TO 2.0	5-1/2"	27"	65"	33-1/4"	98-1/4"	90"	5-1/2"	1-1/2"	0.22
60"	8730	1 TO 1.9	6"	35"	60"	39"	99"	96"	5"	1-1/2"	0.25
66"	10710	1 TO 1.7	6-1/2"	30"	72"	27"	99"	102"	5-1/2"	1-1/2"	0.31
72"	12520	1 TO 1.8	7"	36"	78"	21"	99"	108"	6"	1-1/2"	0.35
78"	14770	1 TO 1.8	7-1/2"	36"	90"	21"	111"	114"	6-1/2"	1-1/2"	0.40
84"	18160	1 TO 1.6	8"	36"	90-1/2"	21"	111-1/2"	120"	6-1/2"	1-1/2"	0.46
90"	20900	1 TO 1.5	8-1/2"	41"	87-1/2"	24"	111-1/2"	132"	6-1/2"	6"	0.51

(S) CONTINUOUS BASIC REINFORCEMENT IN SQ. IN. PER LINEAL FT. FOR SLOPED END "B" (LARGER OF INNER OR OUTER CAGE ON STD. PLATE 3000). FOR WALL THICKNESSES LESS THAN 4", LOCATE REINFORCEMENT AT THE CENTER OF WALL. FOR WALL THICKNESSES 4" AND GREATER, LOCATE REINFORCEMENT WITH A MIN. OF 2" OF COVER MEASURED FROM THE OUTSIDE OF THE WALL.

NOTE: UNLESS SPECIFIED OTHERWISE IN THE PLANS, WHEN AN APRON IS REQUIRED FOR A RUN OF GASKET PIPE (STD. PLATE 3006), THE PRODUCER MAY FURNISH EITHER:

1. AN APRON WITH A STD. PLATE 3006 JOINT, OR
2. AN APRON WITH A STD. PLATE 3000 JOINT AND THE END OF THE STD. PLATE 3006 PIPE CONNECTING TO THE APRON PROVIDED WITH A STD. PLATE 3000 JOINT. THIS JOINT IS TO BE SEALED WITH A PREFORMED MASTIC SEALER.

APPROVED May 8, 1985
R.H. Sullivan
 Assistant Division Director
 Technical Services

STATE OF MINNESOTA
 DEPARTMENT OF TRANSPORTATION
 CONCRETE APRON FOR
 REINFORCED CONCRETE PIPE

SPECIFICATION
 REFERENCE
 2501, 2503
 REVISED
 10-16-2000 A.K.J.

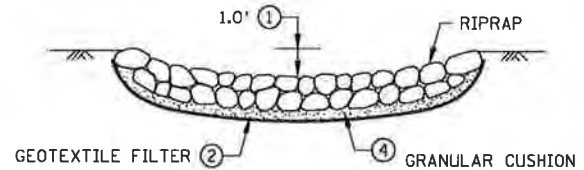
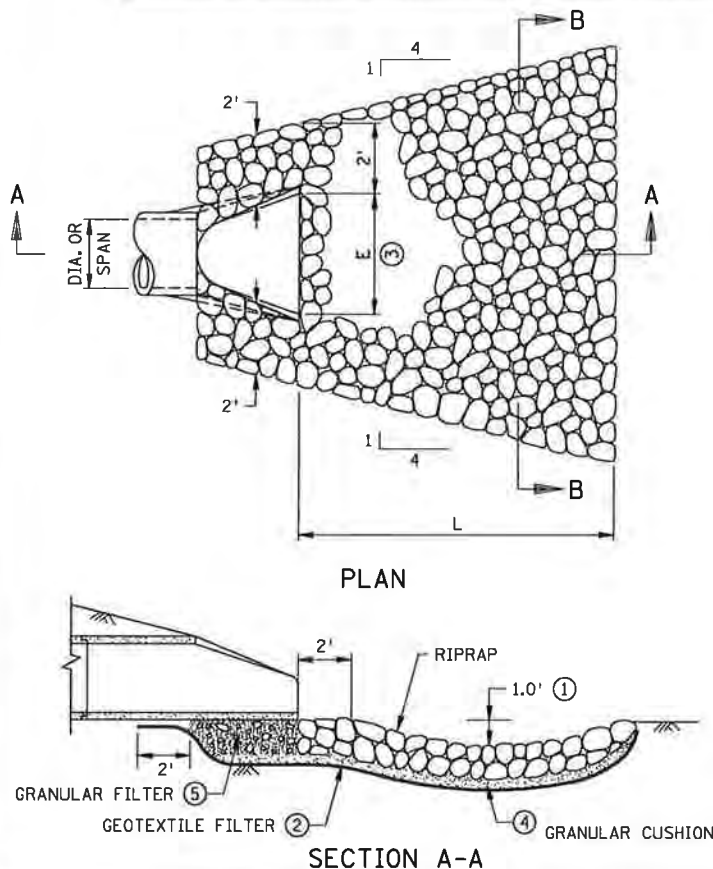
STANDARD
 PLATE
 NO.
 3100G

TABLE OF QUANTITIES
RIPRAP AT RCP OUTLETS

DIA. OF ROUND PIPE (IN.)	L (FT.)	CLASS II d ₅₀ = 6"			CLASS III d ₅₀ = 9"			CLASS IV d ₅₀ = 12"		
		GEO- TEXTILE FILTER (SQ. YD.)	GRANULAR FILTER UNDER APRON (CU. YD.)	12" DEPTH RIPRAP (CU. YD.)	GEO- TEXTILE FILTER (SQ. YD.)	GRANULAR FILTER UNDER APRON (CU. YD.)	18" DEPTH RIPRAP (CU. YD.)	GEO- TEXTILE FILTER (SQ. YD.)	GRANULAR FILTER UNDER APRON (CU. YD.)	24" DEPTH RIPRAP (CU. YD.)
12	8	16.9	0.2	3.0	19.6	0.3	4.4	22.6	0.3	5.9
15	8	18.0	0.2	3.2	20.8	0.3	4.8	23.9	0.4	6.4
18	10	22.4	0.3	4.3	25.6	0.4	6.4	29.0	0.5	8.5
21	10	24.1	0.4	4.7	27.4	0.6	7.1	30.9	0.7	9.4
24	12	29.7	0.5	6.2	33.4	0.8	9.2	37.3	1.0	12.3
27	12	31.4	0.6	6.6	35.2	0.9	9.9	39.2	1.2	13.2
30	14	37.4	0.8	8.2	41.6	1.1	12.3	46.0	1.5	16.4
36	16	45.9	1.1	10.6	50.5	1.6	15.8	55.4	2.1	21.1
42	18	52.8	1.2	12.5	57.8	1.7	18.7	63.0	2.3	24.9
48	20	61.1	1.5	14.8	66.5	2.2	22.2	72.0	2.9	29.6

TABLE OF QUANTITIES
RIPRAP AT RCP-A OUTLETS

SPAN OF PIPE ARCH (IN.)	L (FT.)	CLASS II d ₅₀ = 6"			CLASS III d ₅₀ = 9"			CLASS IV d ₅₀ = 12"		
		GEO- TEXTILE FILTER (SQ. YD.)	GRANUL FILTER UNDER APRON (CU. YD.)	12" DEPTH RIPRAP (CU. YD.)	GEO- TEXTILE FILTER (SQ. YD.)	GRANUL FILTER UNDER APRON (CU. YD.)	18" DEPTH RIPRAP (CU. YD.)	GEO- TEXTILE FILTER (SQ. YD.)	GRANUL FILTER UNDER APRON (CU. YD.)	24" DEPTH RIPRAP (CU. YD.)
22	10	22.4	0.3	4.1	25.6	0.4	6.1	29.0	0.5	8.1
28	12	29.5	0.5	5.7	33.2	0.7	8.5	37.1	0.9	11.3
36	14	37.3	0.8	7.5	41.5	1.1	11.2	45.8	1.5	14.9
43	16	45.9	1.1	9.5	50.5	1.6	14.3	55.3	2.1	19.0
51	18	52.5	1.2	11.3	57.5	1.7	16.9	62.7	2.3	22.5
58	20	59.9	1.3	13.2	65.2	1.9	19.8	70.7	2.5	26.4



SECTION B-B

NOTES:

REQUIREMENTS FOR GEOTEXTILE TYPE, RIPRAP SIZE AND THICKNESS WILL BE DESIGNATED IN THE PLANS.

PIPE SIZES LARGER THAN THOSE SHOWN REQUIRE A SPECIAL DESIGN.

- ① FOR PIPES GREATER THAN OR EQUAL TO 30", USE 1.5'.
- ② GEOTEXTILE FILTER, SPEC. 3733, SHALL COVER THE BOTTOM AND SIDES OF THE AREA EXCAVATED FOR THE RIPRAP, GRANULAR FILTER MATERIALS.
- ③ DIMENSION E IS GIVEN ON STANDARD PLATES 3100 AND 3110.
- ④ GRANULAR FILTER, SPEC. 3601, MAY BE USED AS A CUSHION LAYER. PLACE FILTER PER SPEC. 2511. THE CUSHION LAYER IS INCIDENTAL.
- ⑤ GRANULAR FILTER OR RIPRAP, SPEC. 3601, TO EXTEND UNDER ENTIRE OPEN PORTION OF PIPE APRON. DEPTH OF MATERIAL UNDER APRON SHALL MATCH RIPRAP DEPTH. WHEN USING RIPRAP INCREASE RIPRAP QUANTITY ACCORDINGLY AND PLACE A 3" LAYER OF 1.5" CRUSHED ROCK UNDER THE APRON TO AID IN GRADING FOR APRON PLACEMENT. CRUSHED ROCK IS INCIDENTAL.

APPROVED DECEMBER 9, 2013

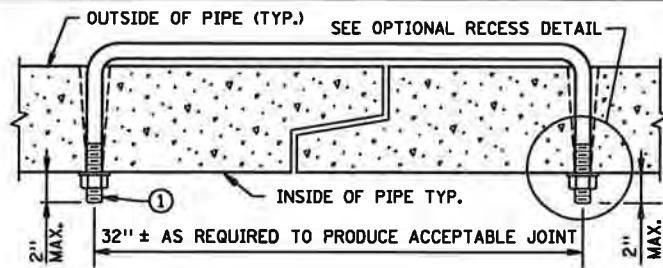
Christopher Ry
STATE DESIGN ENGINEER

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

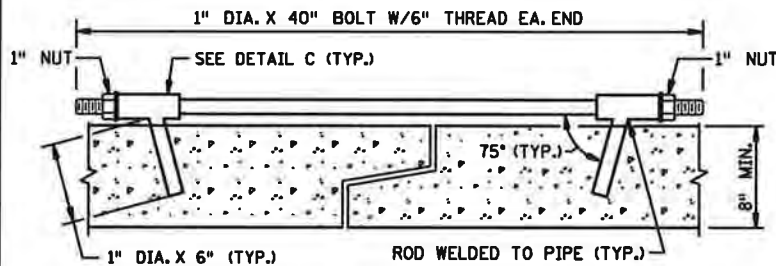
RIPRAP AT RCP OUTLETS

SPECIFICATION
REFERENCE
3100
3110
3601
3733
2511

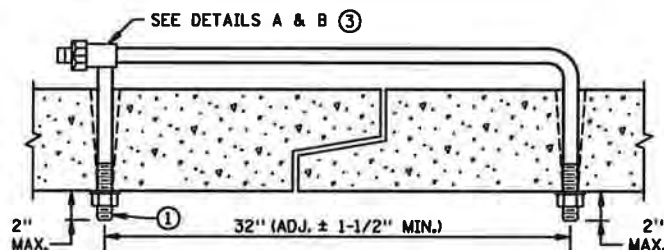
STANDARD
PLATE
NO.
3133D



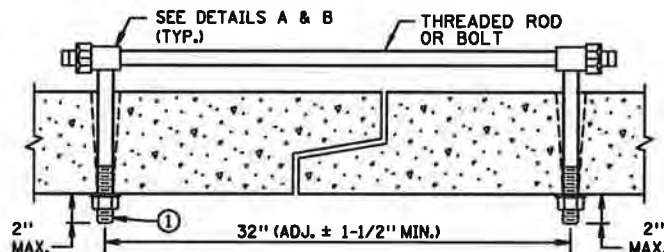
U BOLT TIE ③



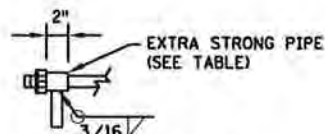
HIDEAWAY TIE ROD ④



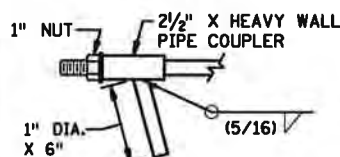
SINGLE CONNECTION TIE ③



DOUBLE CONNECTION TIE



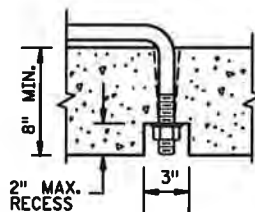
DETAIL A



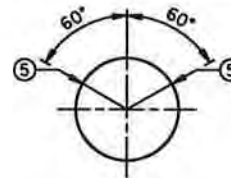
DETAIL C



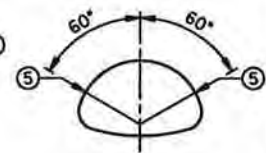
DETAIL B



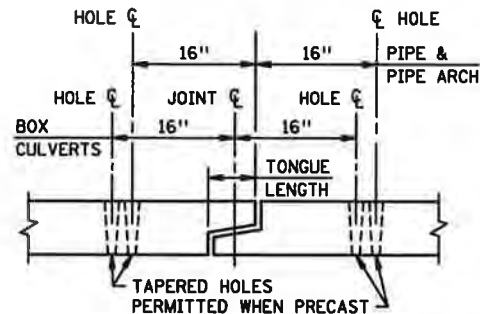
OPTIONAL RECESS DETAIL ②



ROUND PIPE



PIPE-ARCH



PLACEMENT OF HOLES ⑥

TIE ROD DIAMETER		
PIPE SIZE (INCHES)	ROD THREAD DIA.	EXTRA STRONG PIPE INSIDE DIA (SEE DETAIL A)
12 - 27	5/8"	3/4"
30 - 66	3/4"	1"
72 - 144	1"	1-1/4"
ALL PRECAST BOX CULVERTS	1"	1-1/4"

PIPE SIZE LISTED IS INSIDE DIA. OF ROUND PIPE OR EQUIVALENT DIA. OF PIPE ARCH.

NOTES:

STEEL SHALL CONFORM TO SPEC. 3306 OR EQUAL.

FOR CONC. CULVERTS, PIPE TIES SHALL BE REQUIRED FOR ALL JOINTS UNLESS OTHERWISE SPECIFIED IN THE PLANS OR IN THE SPECIAL PROVISIONS.

FOR CONCRETE SEWERS, TIE THE THREE END SECTIONS (INCLUDING APRON) OF A FREE END (NO MANHOLE).

NUTS AND WASHERS ARE NOT REQUIRED ON INSIDE OF PIPES 27" OR LESS IN DIAMETER.

ON BELL PIPE LARGER THAN 24", TIES MAY BE INSERTED FROM THE INSIDE.

TIE RODS SHALL BE GALVANIZED AS PER SPEC. 3392 OR POWER WASHED AND DIPPED IN AN APPROVED ZINC-RICH EPOXY PRIME PAINT AFTER FABRICATION. SEE THE MnDOT APPROVED PRODUCT LIST FOR APPROVED PAINT COATINGS.

TIES TO BE USED ONLY TO HOLD PIPE SECTIONS TOGETHER, NOT FOR PULLING SECTIONS TIGHT.

FOR BOX CULVERT TIE LOCATIONS SEE MnDOT BRIDGE OFFICE PRECAST CONCRETE BOX CULVERT STANDARDS.

- ① TIE ROD THREADS SHALL PROJECT TO THE INSIDE OF PIPE OR CULVERT EXCEPT AS NOTED IN PLANS.
- ② TIE ROD THREADS SHALL BE RECESSED WHEN PIPE OR CULVERT IS USED AS CATTLE PASS OR PEDESTRIAN TRAIL.
- ③ TIE ROD THREADS MAY PROJECT TO OUTSIDE OF BOX CULVERT PIPE IN MULTIPLE PIPELINE INSTALLATIONS. FACE CONNECTION DOWN STREAM.
- ④ HIDEAWAY TIE ROD SHALL ONLY BE USED FOR PEDESTRIAN CULVERT APPLICATIONS OR AS SPECIFIED IN PLAN OR SPECIAL PROVISION.
- ⑤ TIE LOCATION
- ⑥ HOLES SHALL BE CAST OR DRILLED 16" FROM CENTERLINE OF JOINTS FOR BOX CULVERTS, AS SHOWN, UNLESS FORMS ARE SET UP FOR 16" SPACING FROM OUTSIDE OF JOINT.

APPROVED SEPT. 14, 2012

Michael Thompson
STATE DESIGN ENGINEER

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

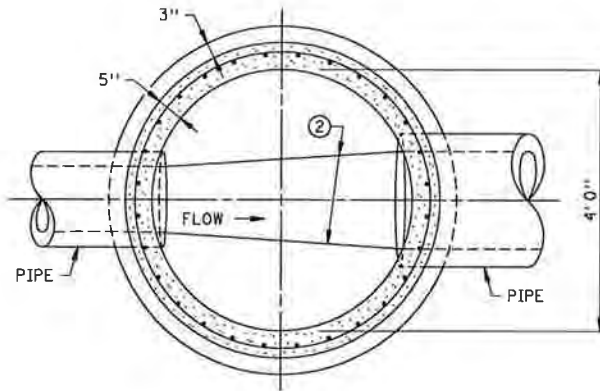
CONCRETE PIPE OR
PRECAST BOX CULVERT TIES

SPECIFICATION
REFERENCE

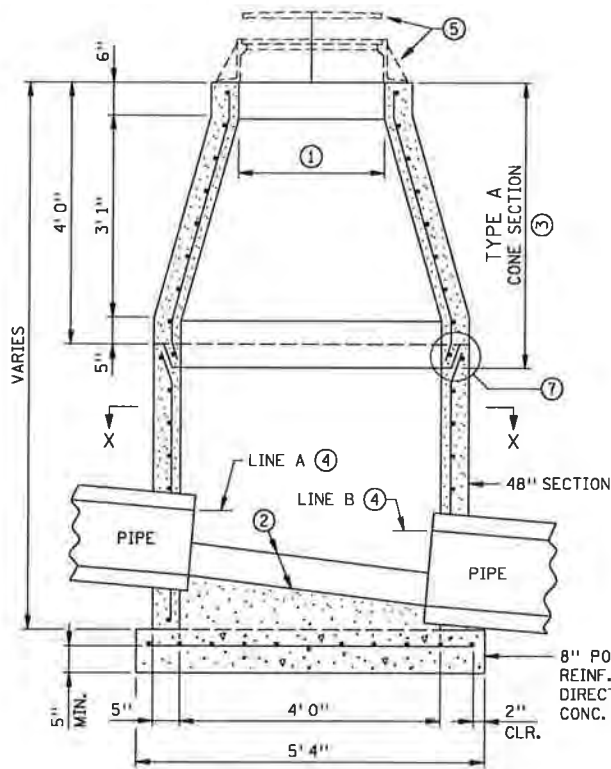
2501
2503

STANDARD
PLATE
NO.

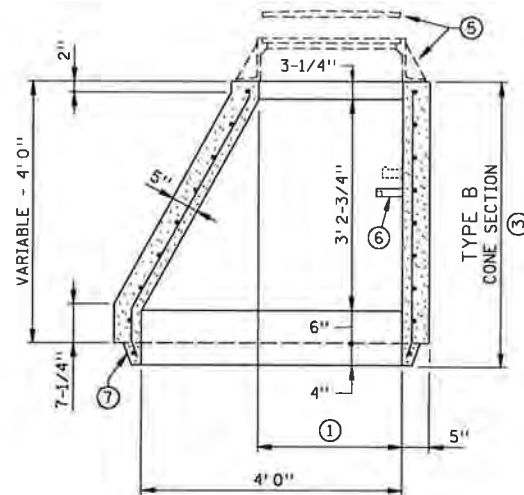
3145G



SECTION X-X



SECTIONAL VIEW
TYPE A CONE



SECTIONAL VIEW
TYPE B CONE
SEE TYPE A CONE FOR ADDITIONAL INFORMATION

NOTES:

REINFORCING: SINGLE LINE STEEL WIRE FABRIC HAVING AN AREA OF NOT LESS THAN 0.12 SQ. IN. PER FOOT OF HEIGHT.

- ① 2' 3" NOMINAL OPENING.
- ② PROVIDE MORTAR FILLETS TO FIT THE BOTTOM PORTION OF PIPE TO DIRECT FLOW TO OUTLET.
- ③ TYPE A CONE SECTION SHALL BE USED UNLESS OTHERWISE INDICATED IN THE PLANS. FOR SHORT CONE SECTION USE TYPE C. SEE STANDARD PLATE 4010.

- ④ THE ELEV. OF LINE A SHALL BE EQUAL TO OR ABOVE LINE B.
- ⑤ REFER TO PLAN FOR CASTINGS REQUIRED. USE ADJUSTING RINGS WHERE NECESSARY, SEE STANDARD PLATES INDEX. CASTING AND PRECAST CONC. ADJUSTING RINGS SHALL BE SET ON FULL MORTAR BEDS. NO PIPE OR STRUCTURE ALLOWED ABOVE TOP OF CONE.
- ⑥ REFER TO PLANS FOR ANY STEP REQUIREMENTS.
- ⑦ SEE STANDARD PLATES INDEX FOR OTHER APPROVED JOINTS.

DESIGN F

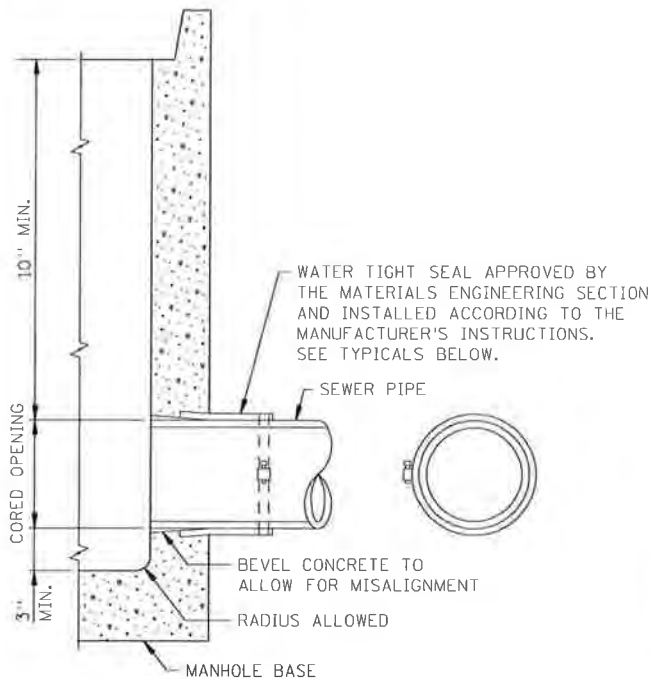
APPROVED APRIL 16, 2014

Christy M. Ry
STATE DESIGN ENGINEER

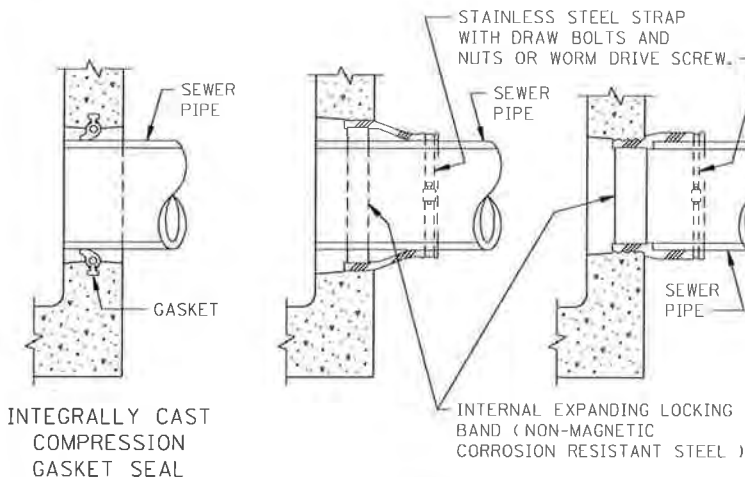
STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION
MANHOLE OR CATCH BASIN
TYPE A & B CONE SECTIONS
PRECAST

SPECIFICATION
REFERENCE
2506

STANDARD
PLATE
NO.
4005M

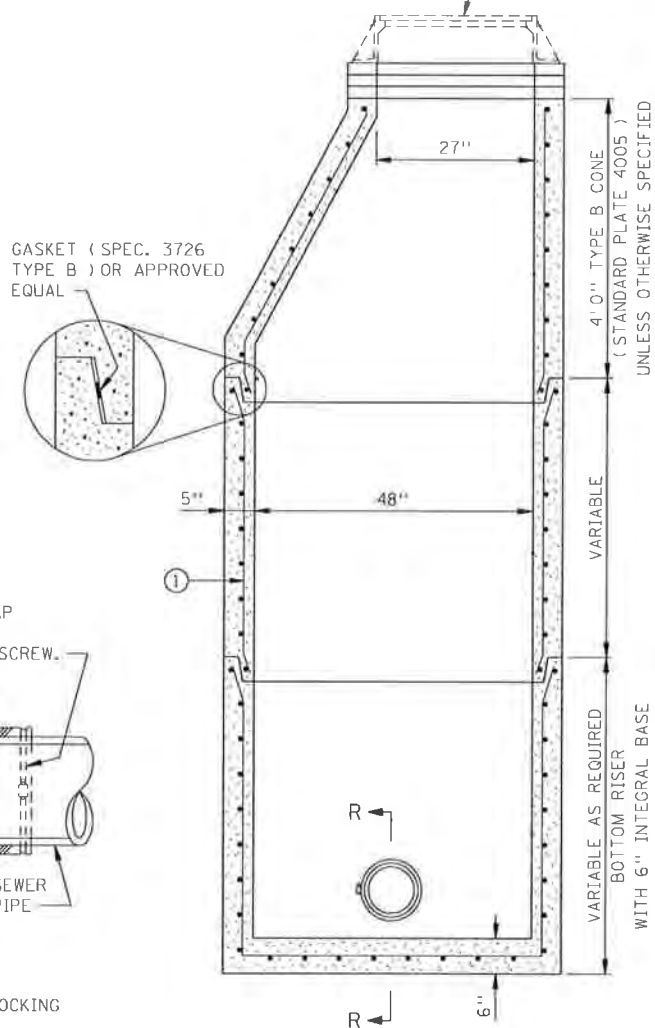


SECTION R-R



WATER TIGHT SEALS

REFER TO PLANS FOR CASTINGS REQUIRED. USE ADJUSTING RINGS WHERE NECESSARY. SEE STANDARD PLATE 4010. ②



SECTION THRU TYPICAL MANHOLE

SLEEVE NOTES:

SHIM OR ADAPTER FOR "NON-STANDARD" PIPE ALLOWABLE.
 FLEXIBLE SLEEVE SHALL BE NEOPRENE MATERIAL MEETING THE REQUIREMENTS OF ASTM C-443 OR THE FOLLOWING ELASTOMER EPDM:
 TENSILE STRENGTH 1200 P.S.I. MIN. (DIE C, ASTM D 412)
 ELONGATION AT RUPTURE 350% MIN. (DIE C, ASTM D 412)
 COMPRESSION SET 25% MAX. (22 HRS. AT 70° C, ASTM D 395, METHOD B)
 DUROMETER 50 ± 5 (ASTM D 2240)
 FLEXIBLE SLEEVE DIMENSIONS SHALL CONFORM TO PRODUCERS STANDARDS.

MANHOLE NOTES:

REFER TO PLANS FOR STEP REQUIREMENTS.

- ① REINFORCING SHALL BE A MINIMUM OF A SINGLE LINE WIRE FABRIC HAVING AN AREA OF NOT LESS THAN 0.12 SQ. IN. PER FT. OF HEIGHT.
- ② CASTING AND PRECAST RINGS ALTERNATE (WHEN REQUIRED) SHALL BE SET ON A FULL MORTAR BED.

APPROVED April 2, 1979

S. H. Thornton
 Director

Construction and
 Engineering Development

STATE OF MINNESOTA
 DEPARTMENT OF TRANSPORTATION

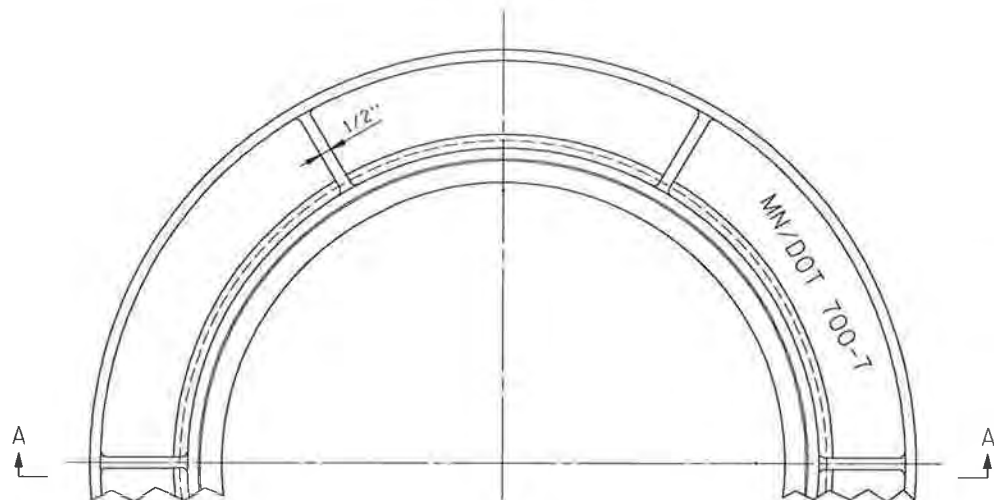
PRECAST MECHANICAL JOINT SEWER MANHOLE

SPECIFICATION
 REFERENCE
 2503
 2506

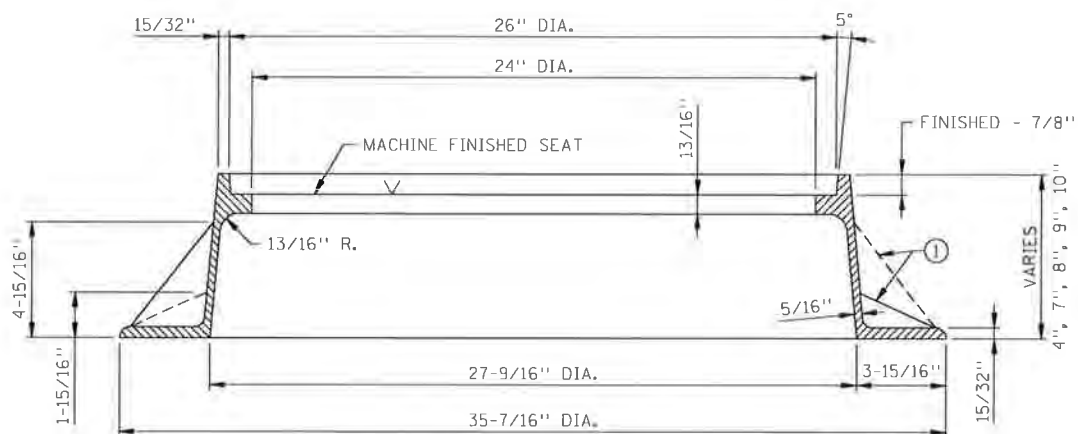
REVISED
 7-22-97

STANDARD
 PLATE
 NO.

4007C



HALF TOP VIEW



SECTION A-A
(NO. 700-7 SHOWN)

NOTES:

THIS RING CASTING TO BE USED IN CONJUNCTION WITH ANY
OF THE FOLLOWING CASTINGS:
MANHOLE COVER NO. 715 OR NO. 716
MANHOLE OR CATCH BASIN GRATES NO. 720 OR NO. 721.

① ALTERNATING GUSSETS (3 EACH),

4" CASTING NO. 700-4 (98 LBS.)
7" CASTING NO. 700-7 (118 LBS.)
8" CASTING NO. 700-8
9" CASTING NO. 700-9
10" CASTING NO. 700-10

APPROVED OCTOBER 25, 1996

Donald J. Rodenbach

STATE DESIGN ENGINEER

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

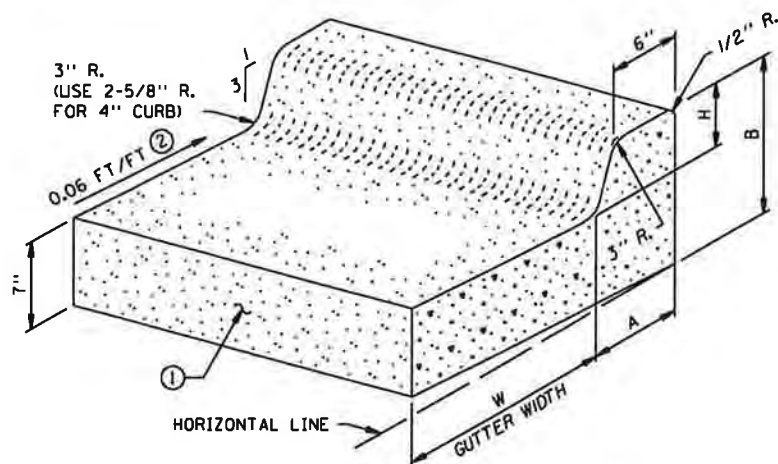
RING CASTING FOR MANHOLE
OR CATCH BASIN

SPECIFICATION
REFERENCE

2506

STANDARD
PLATE
NO.

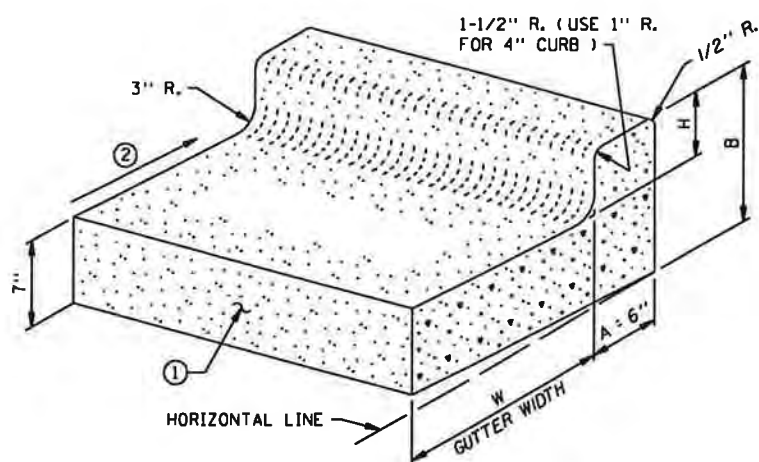
4101D



DESIGN B



REVERSE SLOPE GUTTER SECTION
(FORMS MAY BE TILTED)



DESIGN V

NOTES:

- ① LONGITUDINAL JOINT WHEN ADJACENT TO RIGID PAVEMENT OR BASE.
SEE STANDARD PLANS MANUAL FOR JOINT INFORMATION.
- ② SLOPE 0.06 FT/FT NORMAL, UNLESS OTHERWISE SPECIFIED. IF A DIFFERENT GUTTER SLOPE IS PERMITTED, THE FORM MAY BE TILTED.

DESIGN B			W = 12''				W = 18''				W = 24''				W = 30''				W = 36''			
			DESIGN NO.	CONCRETE			DESIGN NO.	CONCRETE			DESIGN NO.	CONCRETE			DESIGN NO.	CONCRETE			DESIGN NO.	CONCRETE		
				CU. YDS. PER LIN. FT.	LIN. FT. PER CU. YD.			CU. YDS. PER LIN. FT.	LIN. FT. PER CU. YD.			CU. YDS. PER LIN. FT.	LIN. FT. PER CU. YD.			CU. YDS. PER LIN. FT.	LIN. FT. PER CU. YD.			CU. YDS. PER LIN. FT.	LIN. FT. PER CU. YD.	
DIMENSIONS																						
H	A	B																				
4	7-3/8"	11-1/2"	B412	0.0421	23.8	B418	0.0529	18.9	B424	0.0637	15.7	B430	0.0745	13.4	B436	0.0853	11.7					
6	8"	13-1/2"	B612	0.0474	21.1	B618	0.0582	17.2	B624	0.0690	14.5	B630	0.0798	12.5	B636	0.0906	11.0					
8	8-5/8"	15-1/2"	B812	0.0529	18.9	B818	0.0637	15.7	B824	0.0745	13.4	B830	0.0853	11.7	B836	0.0962	10.4					
9	9"	16-5/8"	B912	0.0559	17.9	B918	0.0667	15.0	B924	0.0775	12.9	B930	0.0883	11.3	B936	0.0991	10.1					
10	9-3/8"	17-5/8"	B1012	0.0589	17.0	B1018	0.0697	14.4	B1024	0.0805	12.4	B1030	0.0913	11.0	B1036	0.1021	9.8					

DESIGN V			W = 12''				W = 18''			W = 24''				W = 30''			W = 36''		
			DESIGN NO.	CONCRETE			DESIGN NO.	CONCRETE			DESIGN NO.	CONCRETE			DESIGN NO.	CONCRETE			
				CU. YDS. PER LIN. FT.	LIN. FT. PER CU. YD.			CU. YDS. PER LIN. FT.	LIN. FT. PER CU. YD.			CU. YDS. PER LIN. FT.	LIN. FT. PER CU. YD.			CU. YDS. PER LIN. FT.	LIN. FT. PER CU. YD.		
DIMENSIONS																			
H	A	B																	
4	6''	11-3/8''	V412	0.0396	25.3	V418	0.0504	19.9	V424	0.0612	16.4	V430	0.0720	13.9	V436	0.0828	12.1		
6	6''	13-3/8''	V612	0.0426	23.5	V618	0.0534	18.7	V624	0.0642	15.6	V630	0.0750	13.4	V636	0.0858	11.7		
8	6''	15-3/8''	V812	0.0457	21.9	V818	0.0565	17.7	V824	0.0673	14.9	V830	0.0781	12.8	V836	0.0889	11.3		
9	6''	16-3/8''	V912	0.0472	21.2	V918	0.0580	17.2	V924	0.0688	14.5	V930	0.0796	12.6	V936	0.0904	11.1		
10	6''	17-3/8''	V1012	0.0487	20.5	V1018	0.0595	16.8	V1024	0.0703	14.2	V1030	0.0811	12.4	V1036	0.0919	10.9		

APPROVED MARCH 11, 1994

R.H. Carpend

ACTING STATE DESIGN ENGINEER

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

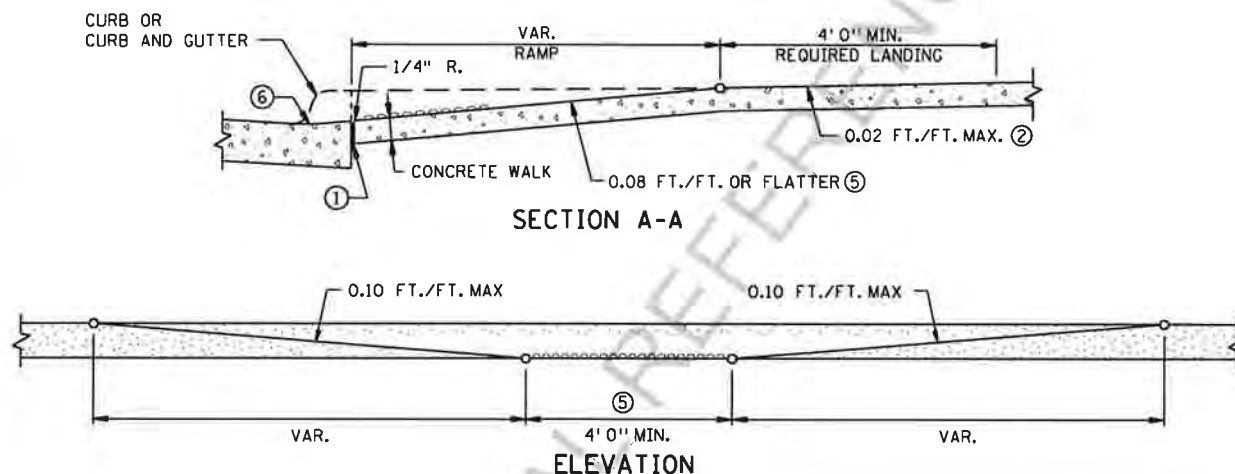
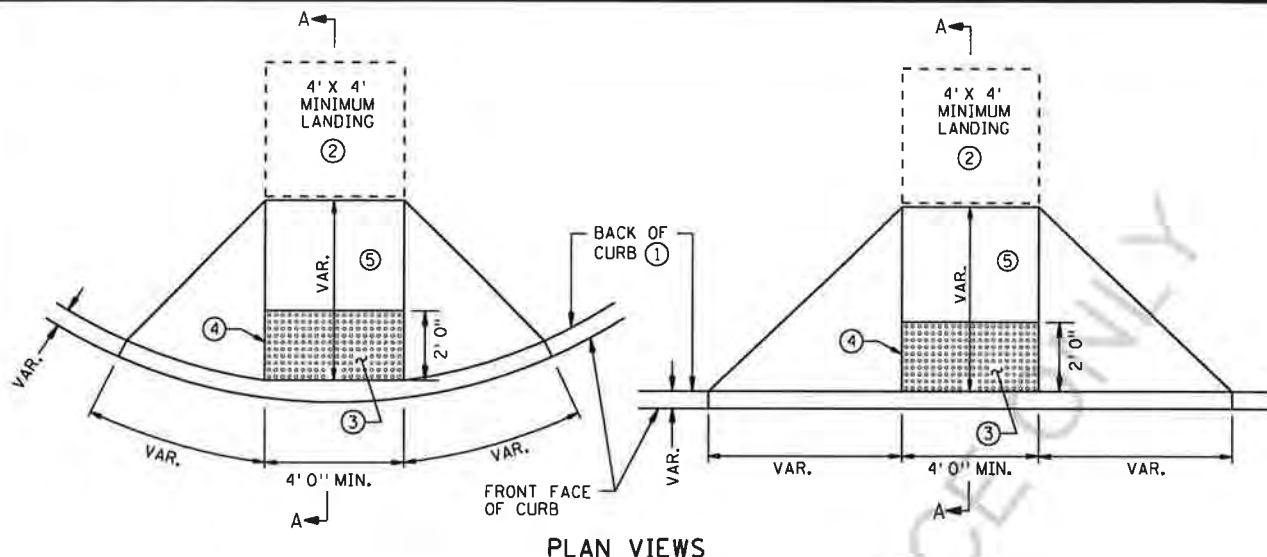
CONCRETE CURB AND GUTTER
DESIGN B AND DESIGN V

SPECIFICATION
REFERENCE
2531

REVISION DATE
2-28-05

STANDARD
PLATE
NO.

7100H



NOTES:

TO COMPLY WITH THE AMERICANS WITH DISABILITIES ACT (ADA), ALL STATE AGENCIES ARE REQUIRED TO UTILIZE THIS STANDARD PLATE. MODIFICATIONS ARE ALLOWED PROVIDED THEY MEET PUBLIC RIGHTS-OF-WAY ACCESSIBILITY GUIDELINES (PROWAG). LOCAL AGENCIES ARE REQUIRED TO ADOPT SIMILAR DESIGNS.

SHARED-USE PATHS SHALL HAVE DETECTABLE WARNINGS ACROSS THE ENTIRE WIDTH OF PATH WHEN THE PATH CROSSES A ROAD. DETECTABLE WARNINGS ARE NOT TO BE USED ON SIDEWALKS OR PATHS WHEN CROSSING ALLEYS OR RESIDENTIAL DRIVEWAYS. DETECTABLE WARNINGS SHOULD BE USED WHERE PEDESTRIAN ACCESS ROUTES CROSS COMMERCIAL DRIVEWAYS THAT ARE PROVIDED WITH TRAFFIC CONTROL DEVICES OR OTHERWISE PERMITTED TO OPERATE LIKE A PUBLIC ROADWAY.

SLOPES ARE DEFINED AS ABSOLUTE ELEVATION DIFFERENCE PER LENGTH OF RUN. (AS OPPOSED TO A RELATIVE SLOPE WITH RESPECT TO A CURB LINE OR CURB HEIGHT.)

NO SIGNAL POLES, SIGN POSTS, CABINETS, OR OTHER OBSTRUCTIONS ARE ALLOWED IN THE RAMP OR PATH OF TRAVEL.

- ① 1/2-INCH EXPANSION JOINT, 1/2-INCH PREFORMED JOINT FILLER MATERIAL, AASHTO M 213.
- ② PROVIDE A 4' X 4' MINIMUM LANDING. SEE PLANS FOR PROPOSED RUNNING SLOPE AND CROSS SLOPE, NEITHER OF WHICH MAY EXCEED 0.02 FT./FT. AS CONSTRUCTED.
- ③ PLACE THE DETECTABLE WARNINGS AT THE BACK OF CURB. WHEN THE DETECTABLE WARNING SYSTEM IS A PREFORMED RECTANGLE PLACED AT THE BACK OF A RADIAL CURB LINE, HAND FORM THE CURB TO FILL THE GAP. DETECTABLE WARNING AREA SHALL BE 2' 0" MIN. IN THE DIRECTION PERPENDICULAR TO THE GRADE BREAK AND SHALL EXTEND THE FULL WIDTH OF THE CURB RAMP.
- ④ WHERE RADIAL WARNING SURFACES ARE USED OR IN OTHER CIRCUMSTANCES WHERE THE EDGE OF THE WARNING SURFACE IS NOT PARALLEL TO THE EDGE OF THE CURB RAMP PATH OF TRAVEL, THE EDGE OF THE DETECTABLE WARNING SURFACE SHOULD NEVER BE MORE THAN 3 INCHES FROM THE EDGE OF THE RAMP. DETECTABLE WARNING AREA SHALL CONTRAST VISUALLY WITH THE ADJACENT GUTTER, ROADWAY, OR WALKWAY, EITHER LIGHT ON DARK OR DARK ON LIGHT. CONTRAST MAY BE PROVIDED ON THE FULL RAMP SURFACE, EXCLUDING THE FLARED SIDES.
- ⑤ CROSS SLOPE OF THE RAMP MAY NOT EXCEED 0.02 FT./FT. AS CONSTRUCTED.
- ⑥ ANY VERTICAL LIP THAT OCCURS AT THE FLOW LINE MAY NOT BE GREATER THAN 1/4 INCH.

APPROVED MARCH 23, 2011

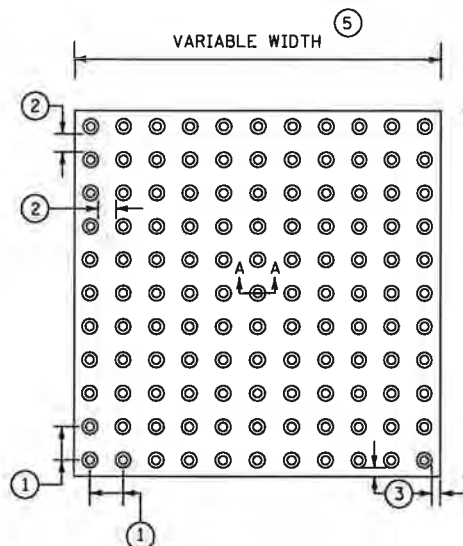
[Signature]
STATE DESIGN ENGINEER

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

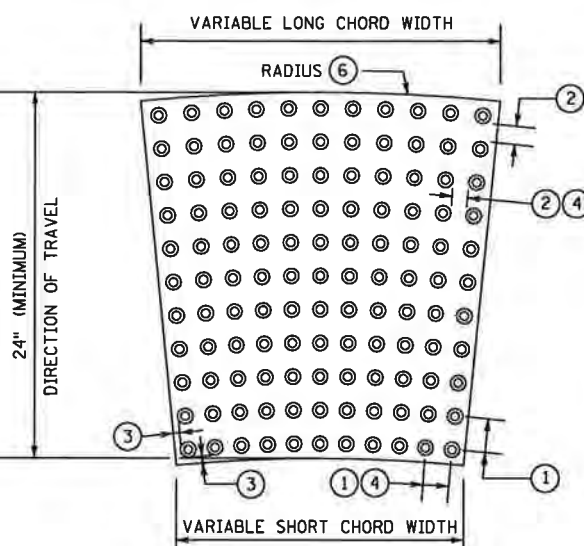
PEDESTRIAN CURB RAMP
PERPENDICULAR DESIGN

SPECIFICATION
REFERENCE
2521
2531

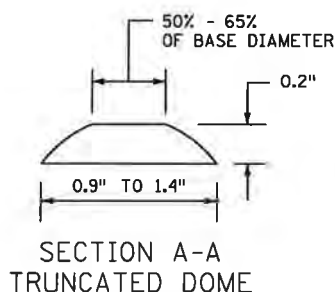
STANDARD
PLATE
NO.
7036G



RECTANGULAR PLATES



RADIAL PLATES



RADIUS (FEET) ⑦	LONG CHORD WIDTH (INCHES)	SQ. FT. PER PLATE	PLATES REQUIRED FOR 90 DEGREE TURN
10	23-1/2	3.53	8
15	18-13/16	2.93	15
15	23-1/2	3.67	12
20	18-13/16	3.00	20
20	18-7/8	2.98	20
25	20-1/2	3.28	23
25	23-9/16	3.77	20
30	22-5/8	3.65	25
35	22	3.56	30

NOTES:

DETECTABLE WARNING SURFACES SHALL FOLLOW THE PUBLIC RIGHTS-OF-WAY ACCESSIBILITY GUIDELINES (PROWAG).

DETECTABLE WARNINGS CONSIST OF TRUNCATED DOMES ALIGNED IN A SQUARE OR RADIAL GRID PATTERN.

DETECTABLE WARNINGS ARE REQUIRED:

- WHERE RAMPS, LANDINGS, OR BLENDED TRANSITIONS PROVIDE A FLUSH PEDESTRIAN CONNECTION TO THE ROADWAY.
- WHERE PEDESTRIAN ACCESS ROUTES CROSS COMMERCIAL DRIVEWAYS THAT ARE PROVIDED WITH TRAFFIC CONTROL DEVICES OR OTHERWISE PERMITTED TO OPERATE LIKE A PUBLIC ROADWAY.
- AT PEDESTRIAN RAILWAY CROSSINGS.
- ON RAIL PLATFORMS WHERE BOARDING EDGES ARE NOT PROTECTED.

DETECTABLE WARNINGS SHALL EXTEND:

- A MINIMUM OF 24" IN THE DIRECTION OF TRAVEL.
- THE FULL WIDTH OF THE RAMP, LANDING, OR BLENDED TRANSITION, WITHIN 3" OF FULL WIDTH ON EITHER END.
- THE FULL LENGTH OF THE PUBLIC USE AREA OF A RAIL PLATFORM.

DETECTABLE WARNING SURFACES SHALL CONTRAST VISUALLY WITH ADJACENT GUTTER, ROADWAY, OR WALKWAY, EITHER A LIGHT-ON-DARK OR DARK-ON-LIGHT. CONTRAST MAY BE PROVIDED ON THE FULL RAMP SURFACE, EXCLUDING THE FLARED SIDES.

FOR MN/DOT PROJECTS, SEE MN/DOT'S APPROVED/QUALIFIED PRODUCT LISTS.

DETECTABLE WARNING SURFACE SHALL BE PAID FOR AS TRUNCATED DOMES BY THE SQUARE FOOT.

ALL TRUNCATED DOME SYSTEMS SHALL BE PLACED IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER.

- ① CENTER TO CENTER DOME SPACING: 1.6" MINIMUM, 2.4" MAXIMUM.
- ② BASE TO BASE DOME SPACING: 0.65" MINIMUM.
- ③ DOME BASE TO PLATE EDGE SPACING: 0.35" MINIMUM, 0.75" MAXIMUM.
- ④ SPACING VARIES ON RADIAL PLATES.
- ⑤ TYPICAL WIDTHS AVAILABLE: 12", 18", 24", 30", 36". CHECK WITH MANUFACTURERS FOR AVAILABLE WIDTHS.
- ⑥ ON RADIAL PLATE, RADIUS DEFINED AT BACK OF CURB.
- ⑦ TYPICAL RADII. CHECK WITH MANUFACTURERS FOR AVAILABLE RADII.

APPROVED AUGUST 23, 2010

Jon Chy
STATE DESIGN ENGINEER

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

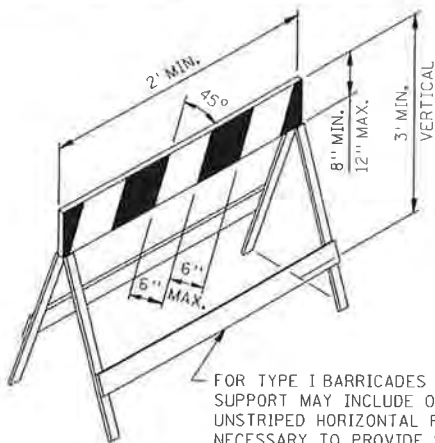
DETECTABLE WARNING SURFACE
TRUNCATED DOMES

SPECIFICATION
REFERENCE

2531

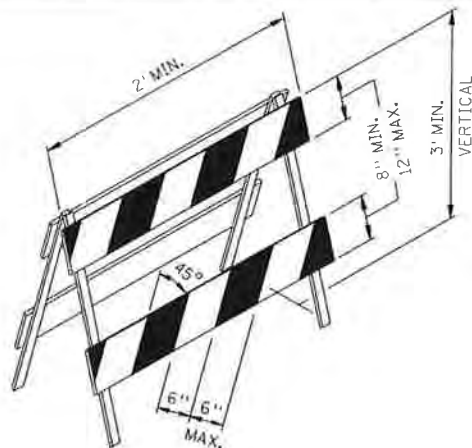
STANDARD
PLATE
NO.

7038A

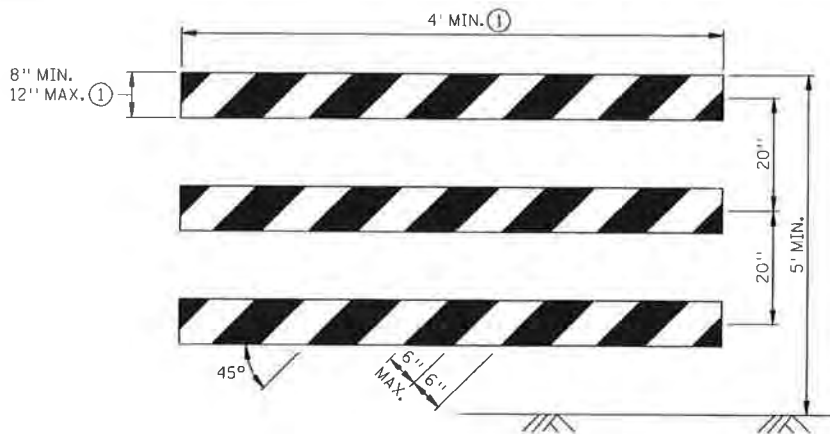


FOR TYPE I BARRICADES THE SUPPORT MAY INCLUDE OTHER UNSTRIPED HORIZONTAL PANELS NECESSARY TO PROVIDE STABILITY.

TYPE I



TYPE II



TYPE III

ELEMENT	TYPE I	TYPE II	TYPE III
② WIDTH OF STRIPES	6 IN.	6 IN.	6 IN.
HEIGHT	3 FT. MIN.	3 FT. MIN.	5 FT. MIN.
NUMBER OF REFLECTORIZED RAIL FACES	2 (ONE EACH DIRECTION)	4 (TWO EACH DIRECTION)	3 IF FACING TRAFFIC IN ONE DIRECTION 6 IF FACING TRAFFIC IN TWO DIRECTIONS

NOTES:

RAILBOARDS SHALL BE CONSTRUCTED OF LIGHT-WEIGHT MATERIALS, SUCH AS, NOMINAL 1" X 8" MIN.-12" MAX. WOOD BOARDS, 0.125" X 8" MIN.-12" MAX. ALUMINUM EXTRUSION BOARDS OR OTHER MATERIALS APPROVED BY THE MN/DOT OFFICE OF TRAFFIC ENGINEERING. MARKINGS FOR BARRICADE RAILBOARDS SHALL BE ALTERNATE ORANGE AND WHITE REFLECTORIZED STRIPES SLOPING DOWNWARD AT AN ANGLE OF 45 DEGREES IN THE DIRECTION TRAFFIC IS TO PASS. REFLECTORIZED MATERIAL SHALL MEET SPEC. 3352.2A2a REFLECTIVE SHEETING AS A MINIMUM REQUIREMENT. HEIGHT OF REFLECTIVE SHEETING ON RAILBOARD FACE SHALL BE A MINIMUM OF 7".

BARRICADES WITH STRIPES WHICH BEGIN AT THE UPPER RIGHT SIDE AND SLOPE DOWNWARD TO THE LOWER LEFT SIDE ARE TO BE DESIGNATED AS "RIGHT" (R) BARRICADES. BARRICADES WITH STRIPES WHICH BEGIN AT THE UPPER LEFT SIDE AND SLOPE DOWNWARD TO THE LOWER RIGHT SIDE ARE TO BE DESIGNATED AS "LEFT" (L) BARRICADES.

① ON CONSTRUCTION PROJECTS, UNLESS OTHERWISE SPECIFIED BY THE CONTRACT PROVISIONS OR REGULATIONS, TYPE III BARRICADES FURNISHED BY THE CONTRACTOR SHALL HAVE, AT A MINIMUM, RAILBOARDS 8 INCHES WIDE AND 6 FEET LONG.

② FOR RAILBOARDS LESS THAN 3 FT. LONG, 4 IN. WIDE STRIPES SHALL BE USED.

APPROVED May 23, 1984

R. H. Sullivan
Assistant Division Director
Technical Services

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

STANDARD BARRICADES

SPECIFICATION
REFERENCE

1710

STANDARD
PLATE
NO.

8000I

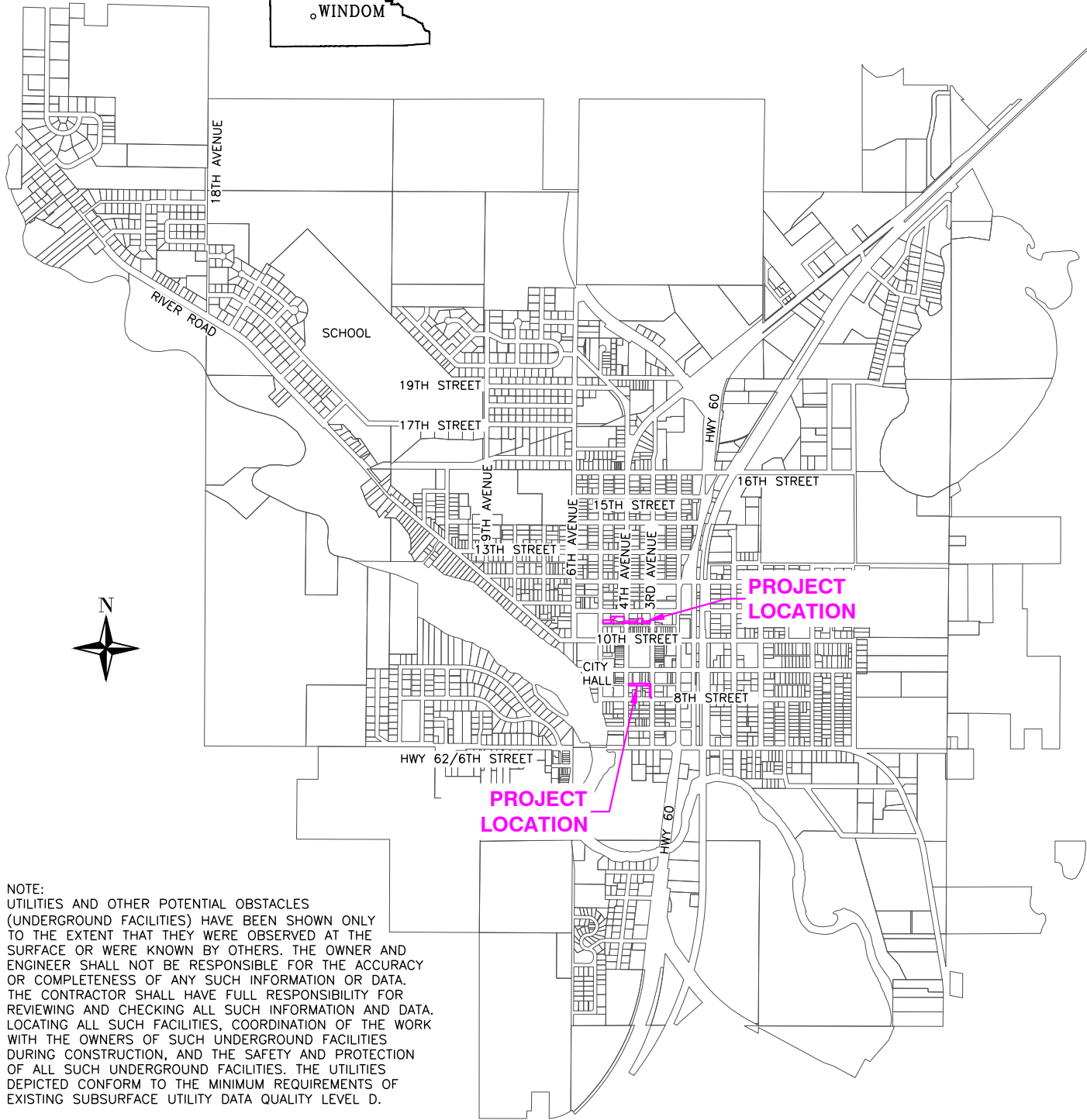
DRAWINGS
(Bound Separately)



2025 ALLEY IMPROVEMENTS WINDOM, MN

INDEX

SHEET	DESCRIPTION
A.01	TITLE SHEET
B.01	CONSTRUCTION QUANTITIES/BID ITEM NOTES
C.01-C.03	CONSTRUCTION DETAILS
C.04-C.09	SIDEWALK DETAILS
C.10-C.13	DRIVEWAY DETAILS
D.01	PROJECT OVERVIEW
D.02-D.04	8TH-9TH STREET ALLEY PLAN/PROFILE
D.05-D.06	10TH-11TH STREET ALLEY PLAN/PROFILE
L.01-L.02	PAVEMENT DETAILS



NOTE:
UTILITIES AND OTHER POTENTIAL OBSTACLES (UNDERGROUND FACILITIES) HAVE BEEN SHOWN ONLY TO THE EXTENT THAT THEY WERE OBSERVED AT THE SURFACE OR WERE KNOWN BY OTHERS. THE OWNER AND ENGINEER SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ANY SUCH INFORMATION OR DATA. THE CONTRACTOR SHALL HAVE FULL RESPONSIBILITY FOR REVIEWING AND CHECKING ALL SUCH INFORMATION AND DATA. LOCATING ALL SUCH FACILITIES, COORDINATION OF THE WORK WITH THE OWNERS OF SUCH UNDERGROUND FACILITIES DURING CONSTRUCTION, AND THE SAFETY AND PROTECTION OF ALL SUCH UNDERGROUND FACILITIES. THE UTILITIES DEPICTED CONFORM TO THE MINIMUM REQUIREMENTS OF EXISTING SUBSURFACE UTILITY DATA QUALITY LEVEL D.

LEGEND		
EXISTING	PROPOSED	DESCRIPTION
		LOT LINE
		EASEMENT LINE
		CENTER LINE
		TELEPHONE BOX, CABLE TV LINE
		SANITARY SEWER, MANHOLE
		SANITARY SEWER FORCE MAIN
		STORM SEWER, MANHOLE, INTAKE
		SUBDRAIN
		CURB & GUTTER
		PCC PAVEMENT
		WATER MAIN, HYDRANT, VALVE
		UNDERGROUND ELECTRIC LINE, BOX, LIGHT POLE
		POWER POLE, GUY WIRE
		OVERHEAD ELECTRIC LINE
		GAS LINE, VALVE
		TELEPHONE LINE
		EVERGREEN, BUSH, TREE
		SIGN POST, MAILBOX
		FIBER OPTIC LINE
		CONTOURS
		PAVEMENT REMOVALS
		DRAINAGE ARROW

CALL BEFORE YOU DIG!

1-800-252-1166

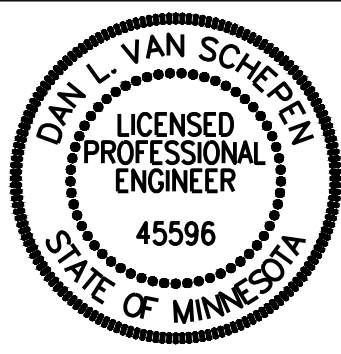
GOPHER STATE ONE CALL

This time and every time.

811

Know what's below

Call before you dig.



I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

BY: DATE: 5/29/2025
DANIEL L. VAN SCHEPEN, P.E. LICENSE NO. 45596
MY LICENSE RENEWAL DATE IS JUNE 30, 2026
PAGES OR SHEETS COVERED BY THIS SEAL: ALL

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.

DANIEL VAN SCHEPEN, P.E.
DATE: 5-29-2025 REG. NO. 45596



Project Manager: DLV
Designer: BMH
Project Number: 373179
Phone: (712) 472-2531

2025 ALLEY IMPROVEMENTS
WINDOM, MN

TITLE SHEET

S
H
E
E
T

A.01

STATEMENT OF ESTIMATED QUANTITIES				
ITEM NO.	SPECIFICATION REFERENCE	ITEM DESCRIPTION	UNITS	BASE BID
1.	2021 501	MOBILIZATION	LS	1
2.	2051 501	MAINT & RESTORATION OF ACCESS	LS	1
3.	2051 504	REMOVE PAVEMENT	SY	4,950
4.	2105 501	COMMON EXCAVATION (P)	CY	2,050
5.	2112 604	12" SUBGRADE PREPARATION	SY	4,950
6.	2211 501	12" AGGREGATE BASE CLASS 5	SY	4,950
7.	2360 501/502	BITUMINOUS PAVEMENT, 4"	TON	1,165
7.	2531 501	CONCRETE CURB AND GUTTER MATCH	LF	230
8.	2531 507	7" CONCRETE APPROACH PAVEMENT	SY	280
8.	2502 541	4" PERFORATED DRAIN PIPE W/ SOCK	LF	160
9.	2502 541	SUBDRAIN/ROOF DRAIN OUTLET	EACH	24
10.	2503 511	6" PVC PIPE SEWER, SDR-35	LF	209
11.	2503 511	8" PVC PIPE SEWER, SDR-35	LF	211
12.	2503 511	10" PVC PIPE SEWER, SDR-35	LF	118
13.	2503 511	15" RC PIPE SEWER, CLASS III	LF	1,029
14.	2503 602	CONNECT TO EXISTING STORM SEWER	EACH	2
15.	2503 602	CONNECT TO EXISTING ROOF DRAIN	EACH	10
16.	2502 602	ROOF DRAIN INSERTA-TEE, 6"	EACH	9
17.	2503 602	ROOF DRAIN INSERTA-TEE, 8"	EACH	8
18.	2506 502	STORM MANHOLE 4X4 MINIMUM	EACH	1
19.	2506 502	SINGLE GRATE INTAKE	EACH	7
19.	2105 501	TERRACE GRADING	SY	80
20.	2563 601	TRAFFIC CONTROL	LS	1
21.	2564 536	INSTALL HANDCAP SIGN	EACH	2
22.		SWPPP MANAGEMENT	LS	1
23.	2573 53	STORM DRAIN INLET PROTECTION	EACH	8
24.	2575 501	SEEDING, FERTILIZING, AND HYDROMULCHING	LS	1
25.	2582 501	PAVEMENT MARKINGS-SYMBOL	EACH	2
26.	2581 502	PAVEMENT MARKINGS-4" PARKING STALLS	LF	1,082
A1.	2051 504	REMOVE PAVEMENT	SY	330
A2.	2105 501	COMMON EXCAVATION (P)	CY	17
A3.	2112 604	12" SUBGRADE PREPARATION	SY	330
A4.	2211 501	12" AGGREGATE BASE CLASS 5	SY	330
A5.	2360 501/502	BITUMINOUS PAVEMENT, 4"	TON	84
A6.	2503 511	6" PVC PIPE SEWER, SDR-35	LF	161
A7.	2503 511	8" PVC PIPE SEWER, SDR-35	LF	337
A8.	2503 511	10" PVC PIPE SEWER, SDR-35	LF	24
A9.	2503 602	CONNECT TO EXISTING ROOF DRAIN	EACH	16

SUBDRAIN/ROOF DRAIN OUTLET AND CONNECTION- REFER TO DETAIL FOR TYPE AND PLACEMENT.

STORM SEWER - # IN. DIA.- PIPE BEDDING (PIT RUN GRAVEL) SHALL BE INSTALLED TO THE PIPE SPRING LINE AND INCIDENTAL TO THE COST OF THE PIPE. ALL STORM SEWER CONNECTIONS SHALL BE WATER TIGHT. RCP/PVC STORM SEWER PIPE SHALL CONTAIN JOINT SEALING GASKETS. PUMPING MAY BE REQUIRED DURING STORM EVENTS DURING CONSTRUCTION. ALL STORM WATER PUMPING SHALL BE INCIDENTAL TO THE STORM SEWER CONTRACT ITEMS. THOROUGHLY CLEAN STREET TO PREVENT SEDIMENT FROM LEAVING THE PROJECT. DAMAGE TO STREET, DRIVEWAYS, AND SIDEWALKS WILL REQUIRE CORRECTIVE ACTION BY THE CONTRACTOR AT NO COST TO THE OWNER. USE FILTER TUBE DOWN GRADE OF TRENCH STOCKPILES TO PREVENT SEDIMENT FROM ENTERING THE STORM SYSTEM, COST INCIDENTAL TO THE PIPE. ITEM INCLUDES INDEPENDENT COMPACTION TESTING COSTS. BENDS/FITTINGS FOR THE STORM SEWER FOR SHALL BE INCIDENTAL TO THIS BID ITEM.

CONNECT TO EXISTING STORM SEWER- CONNECT TO EXISTING STORM SEWER SHALL INCLUDE CONNECTIONS TO DIFFERENT TYPES & SIZES OF EXISTING PIPE/STRUCTURES. CONNECTING TO NEW AND EXISTING PIPE AT NON-STRUCTURE JUNCTIONS SHALL BE A CLEAN CUT CONNECTION WITH A CONCRETE COLLAR, FLOAT FINISHED TO ENSURE A WATERTIGHT, DURABLE CONNECTION. CONNECTIONS TO EXISTING PIPES SHALL ALSO REQUIRE A CONCRETE COLLAR.

CONNECT TO EXISTING ROOF DRAIN- ALL FITTINGS NECESSARY TO MAKE THE CONNECTION TO VARYING ROOF DRAINS WILL BE INCIDENTAL TO THIS BID ITEM.

ROOF DRAIN INSERTA-TEE, 6" & 8"- ROOF DRAIN CONNECTION TO PROPOSED 15" RC STORM SEWER SHALL BE FATBOY, SDR-35 GASKETED BELL INSERTA-TEE.

SINGLE GRATE INTAKE- REFER TO DETAIL AND DIMENSIONS ON PLANS. FRAME AND CASTING SHALL BE A NEENAH R-3382 FRAME WITH A TYPE-C CASTING OR EQUAL.

TERRACE GRADING- ALL DISTURBED AREAS SHALL BE FINE GRADED TO PREPARE FOR SEEDING OPERATIONS. ALL ROCK AND DEBRIS SHALL BE REMOVED FROM TERRACES PRIOR TO FINISH GRADING, COST INCIDENTAL. CONTRACTOR SHALL PROVIDE TOPSOIL FREE OF DEBRIS FOR FILL MATERIAL ADJACENT TO NEW PAVEMENT. TOPSOIL MAY BE ACQUIRED DURING EXCAVATION FOR NEW PAVEMENT. FINE GRADING THE TERRACE AND REMOVING ROCK AND OTHER DEBRIS IS INCIDENTAL (INCLUDING PROVIDING ADDITIONAL TOPSOIL MATERIAL IF THE CONTRACTOR NEGLECTS SALVAGING THE EXISTING PROPERLY).

TRAFFIC CONTROL- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE INSTALLED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MMUTCD) AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS", THE "GUIDE TO ESTABLISHING SPEED IN HIGHWAY WORK ZONES", THE MINNESOTA FLAGGING HANDBOOK, THE PROVISIONS ON MN/DOT 1404 AND 1710, THE MINNESOTA STANDARD SIGNS MANUAL PARTS I AND II, THE "TRAFFIC ENGINEERING MANUAL, THE TRAFFIC CONTROL LAYOUTS IN THE PLAN, AND THE SPECIAL PROVISIONS. ACCESS SHALL BE MAINTAINED TO ADJACENT RESIDENCES AS MUCH AS POSSIBLE. EMERGENCY ROUTES SHALL BE COORDINATED WITH THE CITY (POLICE AND FIRE DEPARTMENT) DURING CONSTRUCTION. THE CONTRACTOR SHALL IMMEDIATELY MAINTAIN TRAFFIC CONTROL DEVICES WHEN CALLED BY ENGINEER OR OWNER. FAILURE TO DO SO WILL RESULT IN A \$100 PENALTY PER DAY THE TRAFFIC CONTROL DEVICE IS NOT MAINTAINED. DO NOT DAMAGE TREES, DRIVEWAYS, SIDEWALKS AND MINIMIZE DAMAGE TO EXISTING TURF. TURF DAMAGED DUE TO TRAFFIC CONTROL WILL BE RESTORED TO PRECONSTRUCTION CONDITIONS AS PART OF THIS BID ITEM. CONTRACTOR MAY PLACE TRENCH EXCAVATION MATERIAL IN THE STREET ONLY IF THE CONTRACTOR MAINTAINS TRAFFIC AND PROVIDES ADEQUATE TRAFFIC CONTROL. DO NOT LEAVE EXCAVATION MATERIAL ON ADJACENT STREETS OVERNIGHT OR ON WEEKENDS. TRAFFIC SHALL BE TEMPORARILY RESTORED BY EACH DAYS END THROUGH EACH INTERSECTION AND ADJACENT TO EACH RESIDENCE (IN THE DRIVEWAY WHEN POSSIBLE).

SWPPP MANAGEMENT- CONTRACTOR SHALL USE THE APPROPRIATE INLET PROTECTION/EROSION CONTROL DEVICES INCLUDED IN THE CONTRACT TO PREVENT CONTAMINANTS FROM LEAVING THE SITE AND ENTERING THE STORM SEWER SYSTEM. THESE DEVICES ARE TO BE INSTALLED AND MAINTAINED FOR THE DURATION OF THE PROJECT AND REMOVED ONCE VEGETATION IS 70% STABILIZED. CONTRACTOR SHALL ALSO UTILIZE TOPSOIL STOCK PILES (MAXIMUM 2' TALL) ON THE UP HILL SIDES OF R.O.W. TO CONTROL & SLOW STORM WATER RUNOFF. CONTRACTOR WILL BE RESPONSIBLE FOR SUBMITTING AND PAYING FOR THE MPCA STORM WATER PERMIT AND FOLLOWING ITS RECOMMENDATIONS, ALL COSTS INCLUDED IN THIS ITEM.

PAVEMENT MARKINGS- INSTALL PARKING STALLS, PAVEMENT MARKINGS AND ACCESSIBLE SYMBOLS WITH 4" WATERBORNE PAVEMENT MARKING PAINT AS SPECIFIED ON PLANS ACCORDING TO MNDOT STANDARD SPECIFICATIONS.

NOTES

MOBILIZATION- THE CONTRACTOR SHALL COMPLETE THE ENTIRE PROJECT AND ALL STREETS OPEN TO TRAFFIC BY THE CONTRACT COMPLETION/MILESTONE DATE(S). CONTRACTOR SHALL COORDINATE AND COOPERATE ON WORK OF OTHER CONTRACTORS ADJACENT TO THIS PROJECT (IE UTILITY OWNERS). THIS ITEM SHALL INCLUDE COSTS AS DEFINED IN THE PLANS AS WELL AS IN MNDOT 2021. ALL PROJECT PAYMENT ITEMS WILL BE COMPLETED AS BID ACCORDING TO THE PLANS AND SPECIFICATIONS, ALL REFERENCES TO MNDOT STANDARD SPECIFICATIONS ARE IN REGARD TO MATERIALS AND CONSTRUCTION METHOD ONLY, CONTRACTOR SHALL BID WORK ACCORDING TO THE BID TABULATION, PLANS AND CONTRACT SPECIFICATIONS. THE CONTRACTOR IS EXPECTED TO MAINTAIN CONTINUOUS WORKING OPERATIONS AND ALSO NOTIFY PROPERTY OWNERS DOOR TO DOOR 24 HOURS BEFORE BEGINNING CONSTRUCTION. WORK ON THIS PROJECT SHALL BE STAGED IN A MANNER TO PROVIDE ACCESS TO THE ADJACENT RESIDENTS TO THE GREATEST EXTENT POSSIBLE. COMPLETED UTILITY SEGMENTS SHALL PROVIDE TEMPORARY SURFACING TO RESTORE ACCESS BEFORE ADDITIONAL UTILITY WORK COMMENCES.

MAINTAIN & RESTORATION OF ACCESS- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH PROPERTY OWNERS RELATING TO ACCESS TO THEIR PROPERTY AND ANY SUBSEQUENT DAMAGES. EXISTING BITUMINOUS PAVEMENT AND BASE SHALL BE MILLED AND USED TO PROVIDE TEMPORARY ACCESS TO ALL PROJECT SEGMENTS THROUGHOUT CONSTRUCTION, COST OF MATERIAL AND WORK ARE INCLUDED IN THIS BID ITEM. ADDITIONAL TEMPORARY SURFACING MATERIAL NECESSARY TO MAINTAIN ACCESS WILL BE INCLUDED IN THIS BID ITEM (PROVIDED BY THE CONTRACTOR).

PAVEMENT REMOVAL- ALL SAW CUTTING FOR REMOVALS SHALL BE INCIDENTAL TO THE REMOVAL. DAMAGE TO EXISTING PAVEMENT OUTSIDE THE PROJECT LIMITS DUE TO THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AT NO COST TO THE OWNER. EXISTING BITUMINOUS PAVEMENT SHALL BE MILLED AND USED TO PROVIDE TEMPORARY ACCESS TO ALL PROJECT SEGMENTS THROUGHOUT CONSTRUCTION. CONTRACTOR SHALL DISPOSE OF ALL UNUSED REMOVED MATERIALS. THE CONTRACTOR MAY NEED TO RE-SAW PAVEMENT IF REMOVAL LIMITS ARE ADJUSTED, NO ADDITIONAL COMPENSATION FOR RE-SAWING. ADDITIONAL PAVEMENT REMOVAL WILL BE MEASURED AND PAID UNDER CONTRACT PRICES. EXISTING PAVEMENT THICKNESS MAY VARY, REMOVAL OF DIFFERENT THICKNESS PAVEMENT SHALL BE INCIDENTAL TO THIS BID ITEM REMOVAL OF EXISTING CURB AND GUTTER SHALL BE MEASURED IN THE PAVEMENT REMOVAL ITEM.

COMMON EXCAVATION- THE CONTRACTOR SHALL RETAIN ALL EXCAVATED STREET EMBANKMENT MATERIAL UNTIL ALL GRADING AND SUBGRADE PREPARATION IS COMPLETE. THE CONTRACTOR WILL NOT BE COMPENSATED TWICE FOR REMOVING MATERIAL FROM THE SITE THAT IS SUBSEQUENTLY RETURNED TO THE SITE. THE CONTRACTOR IS RESPONSIBLE FOR DISPOSING OF ANY EXCESS MATERIAL. THE COST FOR DISPOSING OF MATERIAL OR PLACING EMBANKMENT ON SITE SHALL BE INCIDENTAL. ALL GRADING, SALVAGING, HAULING, STORAGE, AND INSTALLATION COSTS SHALL BE INCIDENTAL TO COMMON EXCAVATION. ITEM SHALL BE PAID PLAN QUANTITY UNLESS ADDITIONAL WORK IS REQUESTED BY THE OWNER OR ENGINEER. ITEM INCLUDES REPLACEMENT OF UNSUITABLE BASE OR UTILITY BACKFILL MATERIAL AS NECESSARY TO MEET SPECIFIED COMPACTION AND STABILITY REQUIREMENTS. ITEM INCLUDES INDEPENDENT TESTING AND PROOF ROLLING COSTS AS SPECIFIED. REMOVAL OF TREE ROOTS WITHIN EXCAVATED AREA SHALL BE INCIDENTAL TO THIS BID ITEM.

SUBGRADE PREPARATION- COMPACT THE TOP 12" OF SUBGRADE TO 98% OF STANDARD PROCTOR DENSITY WITH MOISTURE CONTENT -4% TO -1% OF OPTIMUM. SUBGRADE PREPARATION SHALL EXTEND TO 2' BEYOND THE BACK OF CURB. ITEM INCLUDES INDEPENDENT TESTING COSTS. AFTER PASSING COMPACTION TESTING, THE CONTRACTOR WILL BE REQUIRED TO COMPLETE A TEST ROLL OF 3 PASSES OF EACH CROSS SECTION OF THE PROJECT WITH A MAXIMUM LEGALLY LOADED SINGLE AXLE DUMP TRUCK. PASSES SHALL BE CONDUCTED AT LESS THAN 5 MPH AND RESULT IN NO DEFORMATION OF THE GRADE OF 1/2" OR GREATER, FAILING AREAS SHALL BE RECONDITIONED UNTIL PASSING. ALL TESTING AND REWORK NECESSARY ARE INCIDENTAL TO THE BID ITEM.

AGGREGATE BASE CLASS 5- SHALL BE COMPACTED TO 100% OF STANDARD PROCTOR DENSITY WITH MOISTURE CONTENT -0 TO +4% OF OPTIMUM. MATERIAL SHALL BE PROCESSED, SHIPPED AND INSTALLED ACCORDING TO MNDOT SPECIFICATION 2211 FOR CLASS 5 MATERIAL. SHOWN ON THE PLANS ALL ALLEYS ARE 12" BASE. THIS ITEM WILL BE PAID TO THE CONTRACTOR BY SY BASIS ON FURNISHING, SPREADING AND COMPACTING THE AGGREGATE BASE.

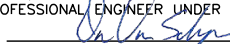
BITUMINOUS PAVEMENT- ALL NEW PAVEMENT SHALL MATCH EXISTING PAVEMENT AND RESULT IN A SMOOTH TRANSITION BETWEEN NEW AND EXISTING. SEE PLANS AND DETAIL FOR PAVING THICKNESSES. MATERIAL AND INSTALLATION SHALL BE PROCESSED, SHIPPED AND INSTALLED ACCORDING TO MNDOT SPECIFICATION 2360 (SEE PAGE C.01 FOR MIX DESIGN REQUIREMENTS). INSTALLATION AND TESTING SHALL BE COMPLETED ACCORDING TO MNDOT SPECIFICATION 2360. TACK COAT SHALL BE APPLIED BETWEEN EACH LIFT OF BITUMINOUS AND ALONG EXISTING CONCRETE AND BITUMINOUS FACES AND ANY AREAS AS DETERMINED BY THE ENGINEER AT THE RATE OF .05 GAL/SQ. YD. PAYMENT FOR ALL MATERIALS AND WORK SHALL BE INCIDENTAL TO THE UNIT PRICE FOR ASPHALT. ITEM INCLUDES INDEPENDENT TESTING COSTS.

CONCRETE CURB AND GUTTER MATCH- CONTRACTOR SHALL HAVE ONE DESIGNATED AREA FOR WASHING OUT READY MIX TRUCKS. THE WASHOUT WASTE SHALL BE PROMPTLY CLEANED UP FOLLOWING PAVING. FAILURE TO WASHOUT READY MIX TRUCKS AT THE DESIGNATED LOCATION WILL RESULT IN A PENALTY OF \$50.00 PER OCCURRENCE. DROP CURB LOCATIONS SHALL BE DETERMINED DURING CONSTRUCTION OR AS INDICATED IN THE DETAILS. CONCRETE SHALL BE MNDOT 3F52 AS PER 2531. COARSE AGGREGATE SHALL BE CLASS A. ALL CURB SHALL BE NON-REINFORCED SLIP FORM PAVEMENT OR STANDARD CONCRETE PAVEMENT. CONNECT TO EXISTING CURB OR THE PREVIOUS DAYS POUR WITH 2 #4 EPOXY COATED BARS. ALL CONCRETE JOINTS SHALL BE SAW CUT AND SEALED WITH CRAFTCO 221 SEALANT. ABUTTING BITUMINOUS PAVEMENT EDGE SHALL BE TACKED FULL DEPTH.

7" CONCRETE APPROACH PAVEMENT- 0"-2" OF CLASS 5 BASE MATERIAL SHALL BE INSTALLED UNDER ALL CONCRETE APPROACH PAVEMENT MECHANICALLY TAMPED TO CREATE A UNIFORM BASE (INCIDENTAL, WILL NOT BE MEASURED FOR PAYMENT). INSTALL 1/2" OF EXPANSION MATERIAL BETWEEN PROPOSED CONCRETE APPROACH AND THE CONCRETE CURB AND GUTTER, COST IS INCIDENTAL TO PAVEMENT. PCC SHALL BE MNDOT 3F52 (CLASS A COARSE AGGREGATE). GRADES SHALL MEET ADA SLOPES WHEN DOUBLING AS SIDEWALK. ALL JOINTS SHALL BE SAW CUT. ALL EXPANSION MATERIAL SHALL BE CAREFULLY SEALED WITH CRAFTCO 221 SEALANT OR APPROVED EQUAL AS TO NOT STRING SEALANT ACROSS FINISHED SURFACES. ALL CONCRETE ON THE PROJECT WILL BE PAID UNDER THIS BID ITEM.

4" PERFORATED DRAIN PIPE W/ SOCK - REFER TO DETAIL, PLACEMENT AS ILLUSTRATED ON THE PLAN PAGES, SOCK IS REQUIRED, PEA ROCK FOR POROUS BACKFILL, 2-4' BURY DEPTH (VERIFY ELEVATION OF OUTLET AND ADJUST DEPTH AND GRADE ACCORDINGLY).

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.


DANIEL VAN SCHEPEN, P.E.

DATE: 5-29-2025 REG. NO. 45596



Project Manager: DLV
Designer: BMH
Project Number: 373179
Phone: (712) 472-2531

2025 ALLEY IMPROVEMENTS
WINDOM, MN

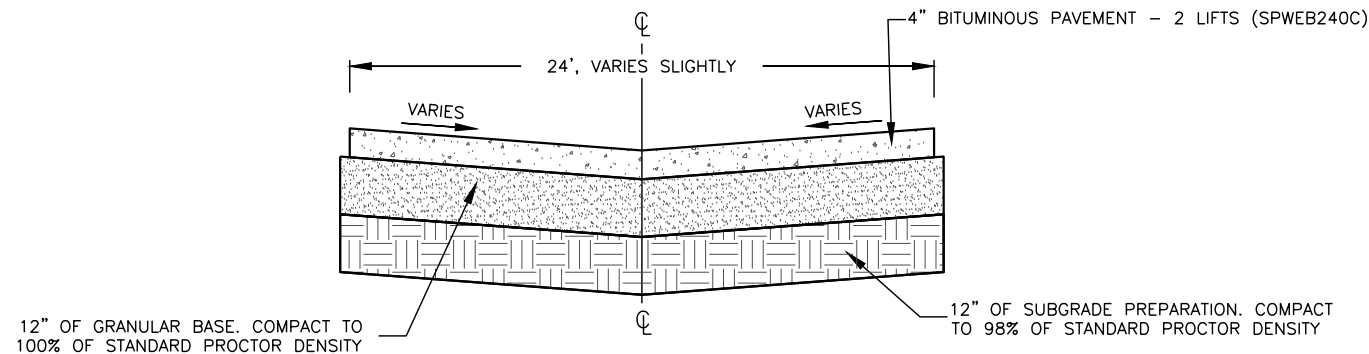
CONSTRUCTION QUANTITIES/ BID ITEM NOTES

S
H
E
E
T

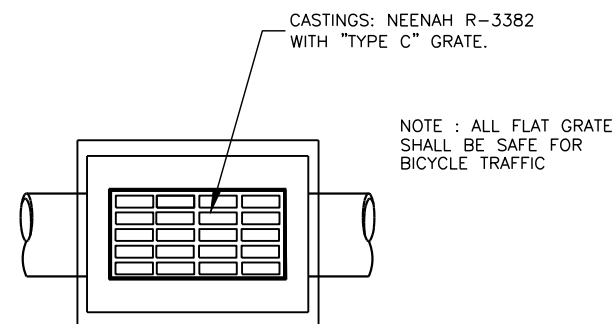
B.01



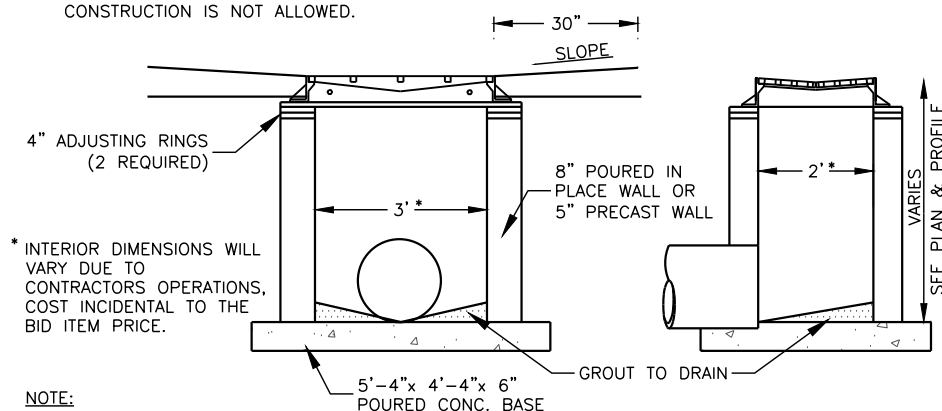
WHEEL CHAIR PAINTED SYMBOL
NOT TO SCALE



TYPICAL PAVEMENT SECTION
NOT TO SCALE



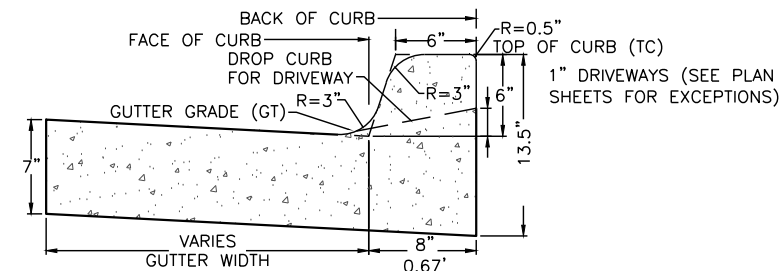
NOTE:
CASTING SHALL BE SET ON FULL
MORTAR BED. SEGMENTAL BLOCK
CONSTRUCTION IS NOT ALLOWED.



NOTE: 5'-4" x 4'-4" x 6"
POURED CONC. BASE

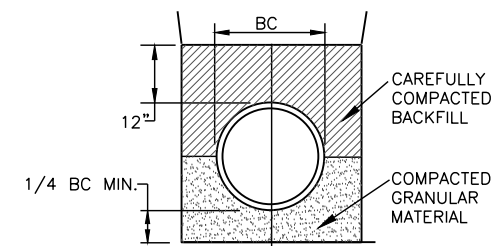
CONTRACTOR MAY CONSTRUCT NEW INTAKES AS PER STANDARD PLATES 4005L (WITHOUT THE CONE) WITH 4022A. PRECAST INTAKES MAY USE A 6" WALL IF THE WALL IS REINFORCED WITH WELDED WIRE FABRIC AND MEETS THE REQUIREMENTS OF ASTM C858. CONTRACTOR SHALL VERIFY IF THE INTAKE DEPTH WILL ALLOW FOR A 4005L & 4022A STRUCTURE BEFORE BIDDING THE ITEM AS SUCH.

SINGLE GRATE INTAKE
NOT TO SCALE



ALL CURB & GUTTER CROSS SECTIONS SHALL BE MEET
MNDOT STANDARDS (IE MNDOT B618/B624) OR MATCH
THE EXISTING CURB AND GUTTER CROSS SECTION.

CURB & GUTTER, MATCH
NOT TO SCALE



COMPACTED GRANULAR MATERIAL SHALL BE INCIDENTAL TO THE SEWER MAIN BID ITEM.

SEWER BEDDING CONDITIONS
NOT TO SCALE

DANIEL VAN SCHEPEN, P.E.

DATE: 5-29-2025 REF. NO. 45596



Project Manager:	DLV
Designer:	BMH
Project Number:	373179
Phone:	(712) 472-2531

2025 ALLEY IMPROVEMENTS

WINDOM, MN

CONSTRUCTION DETAILS

S
H
E
E
T

C.01

Plot Date: 5/29/2025 4:17:18 PM

STORM PPP NOTES:

THE CONTRACTOR SHALL PROVIDE INLET PROTECTION AT ALL TIMES AFTER PAVEMENT IS REMOVED AND UNTIL FINAL STABILIZATION IS ACHIEVED. THE CONTRACTOR WILL NEED TO CHANGE THE TYPE OF INLET PROTECTION TO FIT THE WORK BEING PERFORMED. THE DETAILS SHOWN ARE TO BE USED AND DETERMINED BY THE PLACE OF CONSTRUCTION.

INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AS NEEDED OR AT THE OPTION OF THE ENGINEER/OWNER.

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON MN/DOT’S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.

WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY. ALL EROSION CONTROL DEVICES SHALL BE INSPECTED WEEKLY AND AFTER ALL WEATHER EVENTS, NON-COMPLYING EQUIPMENT SHALL BE FIXED WITHIN THE WORKING DAY.

THE CONTRACTOR SHALL TAKE STEPS TO CONTROL SOIL EROSION AND FUGITIVE DUST DURING CONSTRUCTION. IF NECESSARY, HAY BALES, CHECK DAMS, SEDIMENT TRAPS OR ADDITIONAL SILT FENCE (NOT INDICATED ON THE PLANS) SHALL BE USED TO RETAIN SILT AND PREVENT SILT FROM ENTERING THE SEWER SYSTEM. THIS WORK SHALL BE PAID FOR AS PER PAY ITEMS IN THE PROPOSAL. THE CONTRACTOR SHALL CONSTRUCT EROSION CONTROL PRIOR TO ANY GRADING ON THE PROJECT IN ORDER TO PREVENT SILT TRANSPORT AND SOIL TRACKING INTO PUBLIC RIGHT-OF-WAY. CONTRACTOR SHALL MAINTAIN AND WATER HAUL ROADS TO CONTROL FUGITIVE DUST.

SILT FENCE SHOULD BE INSPECTED WEEKLY AND AFTER RAIN EVENTS TO ENSURE THAT THE DEVICE IS FUNCTIONING PROPERLY. REMOVE SEDIMENT FROM BEHIND FENCE WHEN THE DEPTH OF SEDIMENT HAS BUILT UP TO ½ THE HEIGHT OF THE FENCE ABOVE GRADE. INSPECT THE BASE OF THE FENCE TO ENSURE THAT NO GAPS HAVE DEVELOPED AND RE-TRENCH AS NECESSARY. INSPECT FENCE POSTS TO ENSURE THAT THEY ARE PROPERLY SUPPORTING THE FENCE. STRAIGHTEN, RESET AND ADD ADDITIONAL POSTS IF NECESSARY. IF FILTER FABRIC IS RIPPED, DAMAGED OR DETERIORATED, REPLACE IT IN ACCORDANCE WITH THE ORIGINAL SPECIFICATIONS & DETAILS.

THE CONTRACTOR SHALL COMPLY WITH THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IN THE PROJECT MANUAL.

THE CONTRACTOR SHALL MAKE PROVISIONS TO MAINTAIN DRAINAGE ON ALL STREETS IN AND ADJACENT TO THE PROJECT THROUGHOUT THE CONSTRUCTION PERIOD.

CONTRACTOR SHALL HAVE A PERSON ON CALL TO RESPOND TO FLOODING THAT MAY OCCUR DURING NON-WORKING HOURS. CONTRACTOR SHALL HAVE PUMPING EQUIPMENT ON SITE IN CASE OF A LARGE STORM EVENT. CONTRACTOR SHALL PUMP STORM WATER OFF SITE IF NEEDED AT NO ADDITIONAL COST TO THE PROJECT. CONTRACTOR SHALL NOT PUMP WATER CONTAINING SEDIMENT OFF SITE. MAKE PROVISIONS FOR FILTERING WATER TO BE PUMPED.

CONTRACTOR WILL BE RESPONSIBLE FOR SUBMITTING AND PAYING FOR THE MPCA STORM WATER PERMIT AND FOLLOWING ITS RECOMMENDATIONS, INCIDENTAL TO THE PROJECT.

CONSTRUCTION NOTES:

TRAFFIC SHOULD BE KEPT BACK OF AN IMAGINARY 2:1 LINE DRAWN UP AND OUTWARD FROM THE BOTTOM OF ANY SUB CUT OR TRENCH EXCAVATION.

CONTRACTOR SHALL REMOVE AND SALVAGE ALL TRAFFIC SIGNS THAT ARE WITHIN THE PAVEMENT REMOVAL LIMITS. THE CONTRACTOR SHALL REINSTALL SIGNS FOLLOWING CONSTRUCTION. COORDINATION WITH CITY STAFF WILL BE REQUIRED, COST INCIDENTAL TO THE PROJECT.

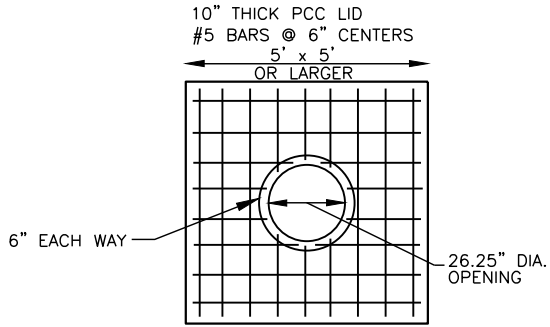
CONTRACTOR SHALL VERIFY LOCATION AND ELEVATIONS OF EXISTING UTILITIES (WATER MAIN, SANITARY SEWER AND STORM SEWER) AT ALL CONNECTION POINTS WITH PROPOSED UTILITIES. ADJUSTMENT OF PROPOSED UTILITIES, AS NEEDED, ARE TO BE MADE DURING CONSTRUCTION AS AUTHORIZED BY THE ENGINEER OR OWNER. COST FOR ADJUSTMENTS SHALL BE INCIDENTAL TO THE RESPECTIVE UTILITY.

CONTRACTOR SHALL USE EROSION CONTROL DEVICES INCLUDED IN THE CONTRACT TO PREVENT CONTAMINANTS FROM ENTERING THE STORM SEWER SYSTEM. THESE DEVICES ARE TO BE INSTALLED AND MAINTAINED FOR THE DURATION OF THE PROJECT AND PAID FOR AT CONTRACT UNIT PRICES. (SEE DETAILS)

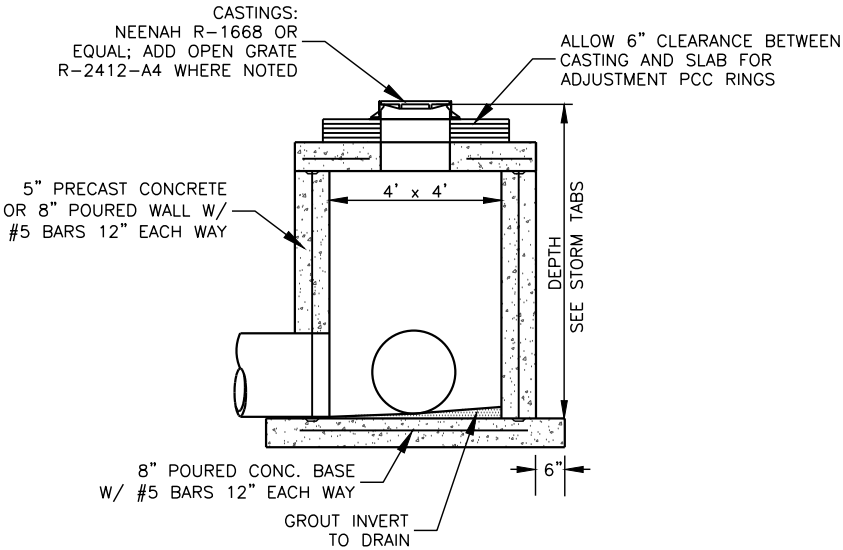
CONTRACTOR MAY PLACE TRENCH EXCAVATION MATERIAL BACK OF CURB WITHIN THE RIGHT-OF-WAY. DO NOT DAMAGE TREES, DRIVEWAYS, SIDEWALKS AND MINIMIZE DAMAGE TO EXISTING TURF. DO NOT MIX ANY TOPSOIL WITH TRENCH EXCAVATION MATERIAL.

BACKFILLING OPERATIONS, ASPHALT MILLINGS & ADEQUATE TRAFFIC CONTROL SHALL BE UTILIZED TO MAINTAIN TRAFFIC THROUGH THE INTERSECTIONS THROUGHOUT THE PROJECT. COST TO COMPLETE WORK SHALL BE INCIDENTAL TO THE PROJECT.

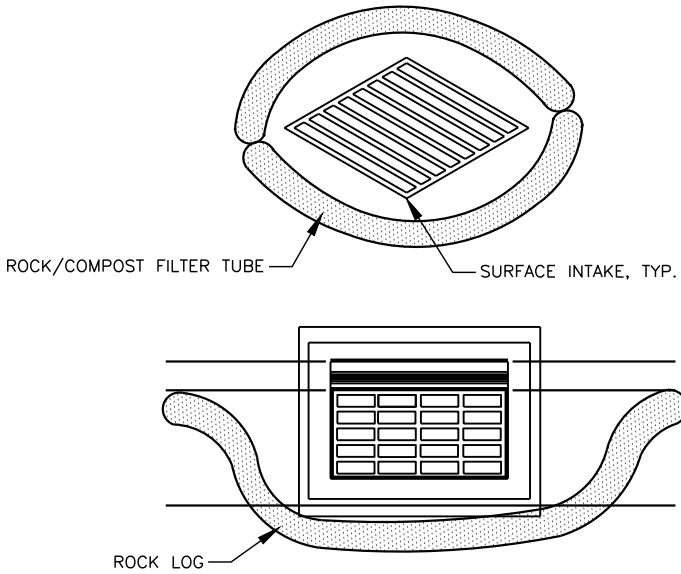
ALL OVER-EXCAVATIONS DURING UTILITY INSTALLATIONS SHALL BE BACKFILLED WITH GRANULAR MATERIAL AND MECHANICALLY TAMPED, COST INCIDENTAL THE EACH UTILITY. SANITARY AND STORM SEWER REQUIRE FURTHER BEDDING REQUIREMENTS.



MANHOLE COVER

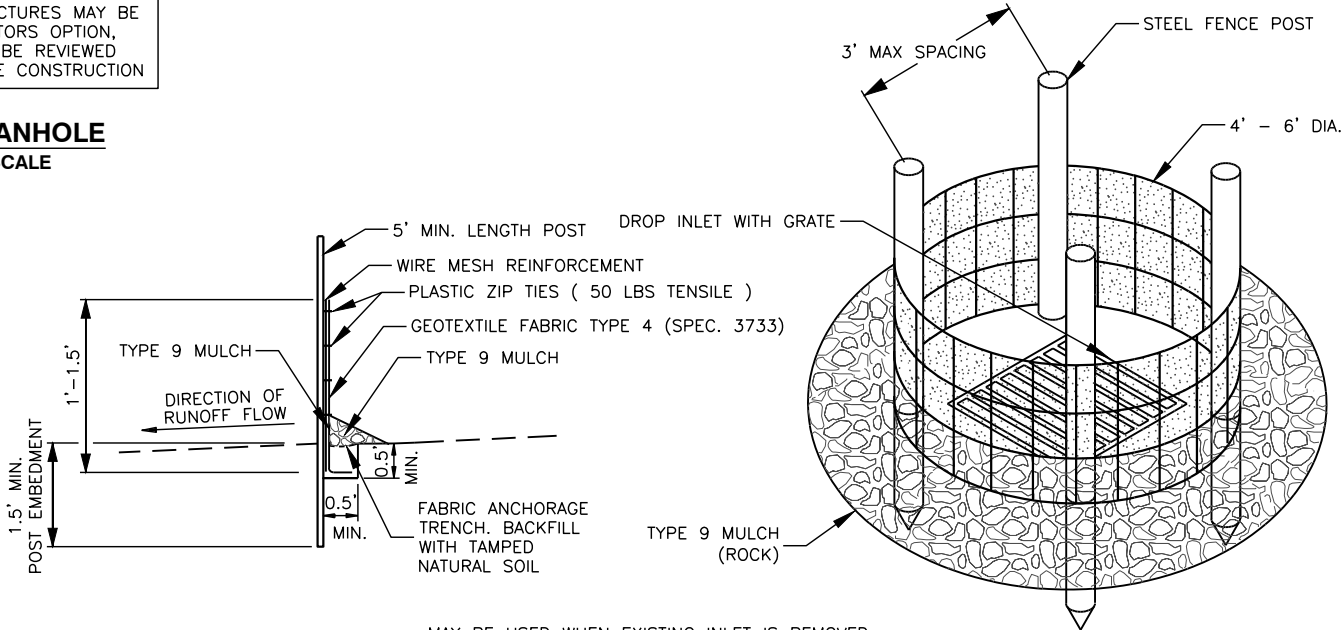


STORM MANHOLE
NOT TO SCALE



TYPE FF (MONO-MONO FABRIC/SILT FENCE), SOWN INTO A SOCK AND FILLED WITH 1.5" CLEAN ROCK. PAY BY PER EACH INLET PROTECTION INSTALLED. INSTALL ROCK LOG AROUND INTAKES AFTER PAVING AND PRIOR TO FINAL STABILIZATION. ROCK LOGS AROUND INLETS SHALL BE INCIDENTAL TO INLET PROTECTION.

INLET PROTECTION-FILTER LOG
NOT TO SCALE



INLET PROTECTION
NOT TO SCALE

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.

DANIEL VAN SCHEPEN, P.E.

DATE: 5-29-2025

REG. NO.

45596



Project Manager: DLV

Designer: BMH

Project Number: 373179

Phone: (712) 472-2531

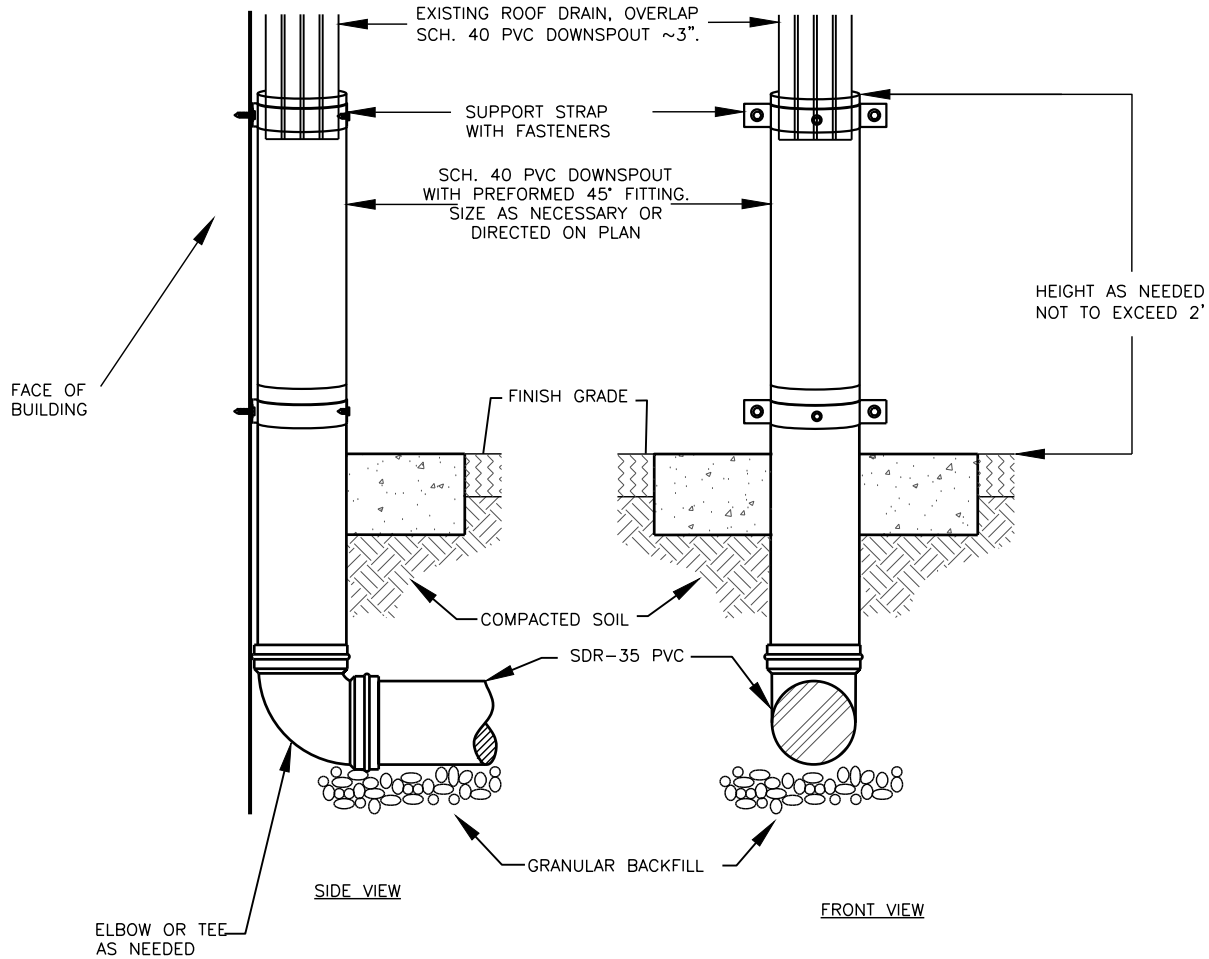
2025 ALLEY IMPROVEMENTS
WINDOM, MN

CONSTRUCTION DETAILS

S
H
E
E
T

C.02

P:\03\0731\79\373179\DWG\373179-TITLE.DWG



CONTRACTOR SHALL CONNECT TO EXISTING DOWNSPOUTS AS INDICATED ON THE PLANS. FASTEN DOWNSPOUT TO BUILDING USING A SUPPORT STRAP CONSISTING OF 18 GAUGE HEAVY DUTY GALVANIZED PLUMBERS TAPE, SPACED EVERY 2' WITH A MINIMUM OF 2 STRAPS PER DOWNSPOUT. FASTEN TO BUILDING WITH AN APPROPRIATE FASTENERS FOR THE TYPE OF EXISTING BUILDING WALL ON BOTH SIDES OF DOWNSPOUT. A WASHER MAY BE REQUIRED BETWEEN FASTENERS AND TAPE. INSTALL ONE SHEET METAL SCREW TO FASTEN THE TAPE TO THE SCH. 40 DOWNSPOUT EXTENSION. ROOF DRAIN DOWNSPOUT CONNECTION SHALL INCLUDE THE COST TO FURNISH & INSTALL THE MATERIALS FROM THE ELBOW (OR TEE) UP TO THE SURFACE AND CONNECTING TO THE EXISTING DOWNSPOUT WITHIN 3-4" OF THE SURFACE. PIPE TO STORM SEWER MAIN SHALL BE PAID SEPARATELY.

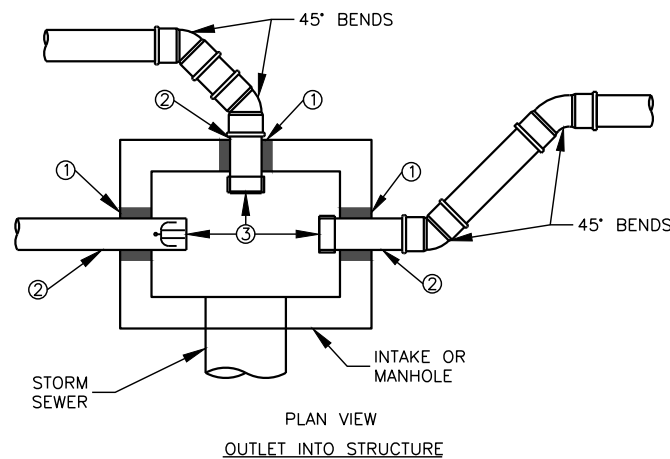
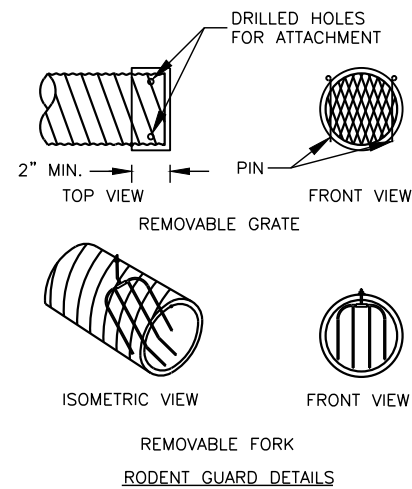
GRANULAR BACKFILL SHALL CONSIST OF PIT-RUN GRAVEL FILLED TO TOP OF PIPE.

ALL CONNECTIONS SHALL BE WATER-TIGHT. ALL BENDS, FITTINGS, WYES, COUPLERS, CONNECTIONS BETWEEN DIFFERENT SIZES OF TYPES PIPE SHALL BE INCIDENTAL.

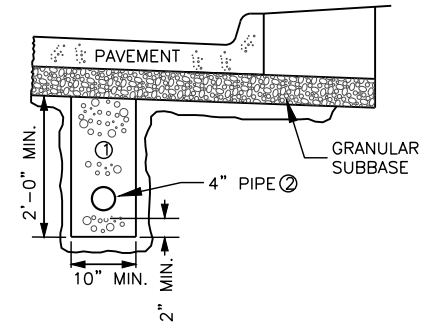
ROOF DRAIN LINE GRADES WILL BE DETERMINED DURING CONSTRUCTION. COORDINATION FOR CROSSING EXISTING UTILITIES MAY BE REQUIRED. ADJUSTMENTS IN GRADE TO AVOID CROSSING UTILITIES SHALL BE INCIDENTAL.

MAINTAIN VERTICAL ALIGNMENT AND CAREFULLY PAVE AROUND ROOF DRAINS.

ROOF DRAIN DOWNSPOUT CONNECTION NOT TO SCALE



DRAIN PIPE/ROOF DRAIN OUTLETS NOT TO SCALE



PERFORATED DRAIN PIPE NOT TO SCALE

TRANSVERSE AND BACKSLOPE PIPE DRAINS REQUIRE ONLY SINGLE OUTLETS. INSTALL DOUBLE OUTLET PIPES ON ALL LONGITUDINAL PIPE DRAIN SYSTEMS, EXCEPT AT THE BEGINNING AND END OF THE SYSTEM. AT THESE LOCATIONS, INSTALL A SINGLE OUTLET PIPE.

- ① FILL ANNULAR SPACE WITH NON-SHRINK GROUT.
- ② OUTLETS THROUGH INTAKE WALLS TO BE CMP; CORRUGATED, DOUBLE-WALLED HDPE; OR PVC.
- ③ EXTEND OUTLET PIPE INTO STRUCTURE AS REQUIRED TO INSTALL REMOVABLE RODENT GUARD.

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.

DANIEL VAN SCHEPEN, P.E.
DATE: 5-29-2025 REG. NO. 45596



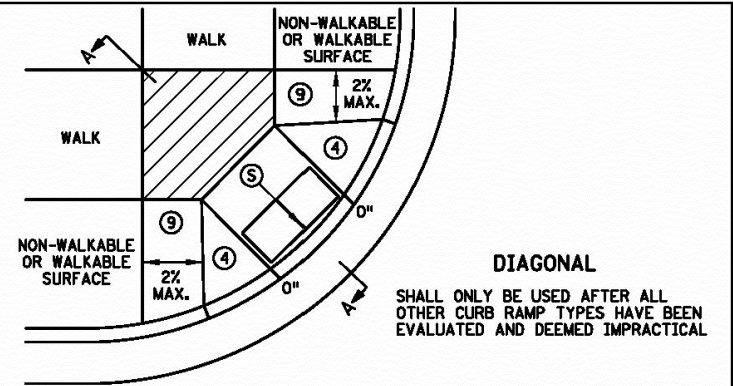
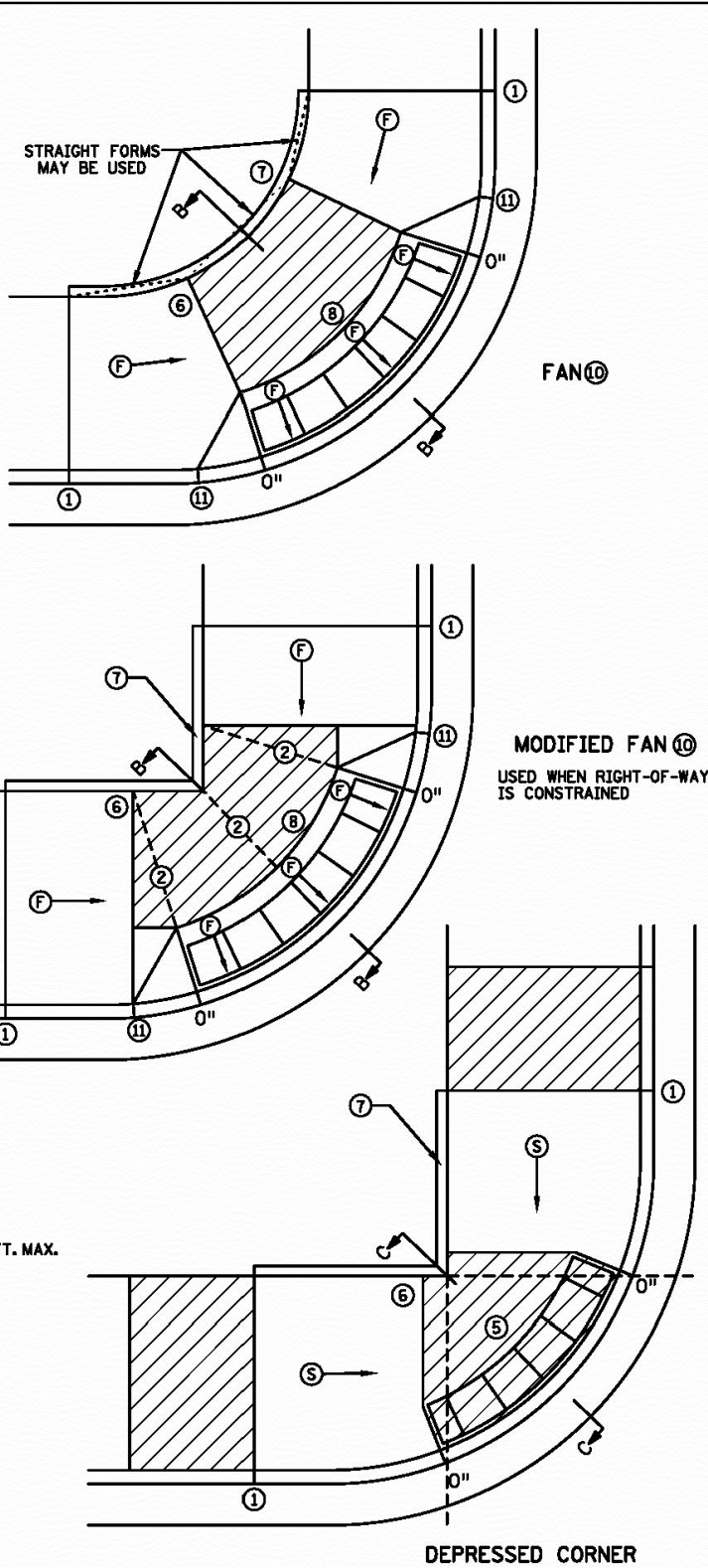
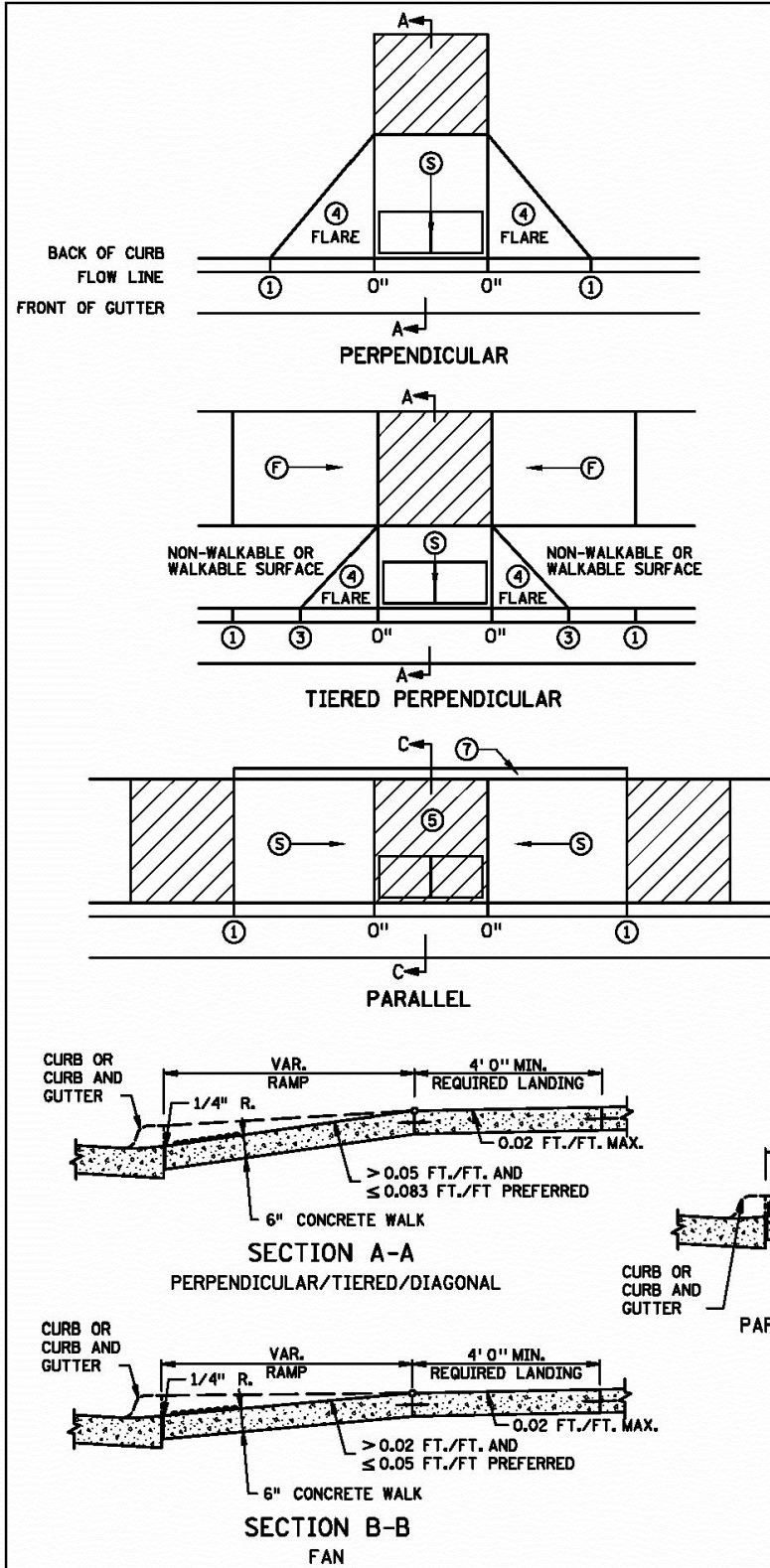
Project Manager: DLV
Designer: BMH
Project Number: 373179
Phone: (712) 472-2531

2025 ALLEY IMPROVEMENTS
WINDOM, MN

CONSTRUCTION DETAILS

S
H
E
E
T

C.03



NOTES:

- LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE (PAR) CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE GREATER THAN 2%.
- INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE, ONLY APPLICABLE WHEN THE INITIAL RAMP RUNNING SLOPE IS OVER 5.0%.
- SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30' OF VERTICAL RISE WHEN THE LONGITUDINAL RUNNING SLOPE IS GREATER THAN 5.0%.
- CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PAR. 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOPS OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.
- ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL, THUS BOTH SIDES OF A SLOPED WALKING SURFACE MUST BE EQUAL LENGTH, EXCEPT AS STATED IN 6 BELOW.
- TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, ALL INITIAL LANDINGS AT A TOP OF A RAMPED SURFACE (RUNNING SLOPE GREATER THAN 2%) SHALL BE FORMED AND PLACED SEPARATELY IN AN INDEPENDENT CONCRETE POUR, FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 6 OF 6 FOR ALL SEPARATELY POURED INITIAL LANDINGS.
- WHEN SIDEWALK IS AT BACK OF CURB, TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE, MAINTAIN POSITIVE BOULEVARD DRAINAGE TO TOP OF CURB.
- ALL RAMP TYPES SHOULD HAVE A MINIMUM 3' LONG RAMP LENGTH.
- 4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MIN. OF 24" IN THE PATH OF TRAVEL. DETECTABLE WARNING TO COVER THE ENTIRE PAR WIDTH OF SHARED-USE PATHS AND THE ENTIRE PAR WIDTH OF THE WALK WITH THE EXCEPTION OF 3" MAXIMUM ON EACH OUTSIDE EDGE WHICH ENSURES THE DETECTABLE WARNINGS ARE ENCASED IN CONCRETE WHEN ADJACENT TO TURF. WHEN ADJACENT TO CONCRETE FLARES 0" - 3" OFFSET IS ALLOWED.
- WHEN DESIGNING OR ORDERING RECTANGULAR DETECTABLE WARNING SURFACES SHOULD BE 6" LESS THAN THE INCOMING PAR. ARC LENGTH OF THE RADIAL DETECTABLE WARNINGS SHOULD NOT BE GREATER THAN 20 FEET.
- RECTANGULAR DETECTABLE WARNINGS SHALL BE SETBACK 3" FROM THE BACK OF CURB. RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB.
- 1 MATCH FULL HEIGHT CURB.
- 2 4' MINIMUM DEPTH LANDING REQUIRED ACROSS TOP OF RAMP.
- 3 3" HIGH CURB WHEN USING A 3' LONG RAMP, 4" HIGH CURB WHEN USING A 4' LONG RAMP.
- 4 SEE SHEET 4 OF 6, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.
- 5 DETECTABLE WARNINGS MAY BE PART OF THE 4' X 4' MIN. LANDING AREA IF IT IS NOT FEASIBLE TO CONSTRUCT THE LANDING OUTSIDE OF THE DETECTABLE WARNING AREA.
- 6 THE GRADE BREAK SHALL BE PERPENDICULAR TO THE BACK OF WALK. THIS WILL ENSURE THAT THE GRADE BREAK IS PERPENDICULAR TO THE DIRECTION OF TRAVEL. (TYPICAL FOR ALL)
- 7 WHEN ADJACENT TO GRASS, GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS LESS THAN 5% RUNNING SLOPE SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.
- 8 A 7' MIN TOP RADIUS GRADE BREAK IS REQUIRED TO BE CONSTRUCTIBLE.
- 9 PAVE FULL WALK WIDTH.
- 10 "S" SLOPES ON FANS SHALL ONLY BE USED WHEN ALL OTHER FEASIBLE OPTIONS HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL.
- 11 INTERMEDIATE CURB HEIGHTS TAPER SHALL RISE AT 8-10% TO A MINIMUM 3" CURB HEIGHT. REDUCE INTERMEDIATE CURB HEIGHT TO 2+ INCHES IF NECESSARY TO MATCH ADJACENT BOULEVARD OR SIDEWALK GRADES.

LEGEND	
THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.	
(S)	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.
(F)	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.
[Hatched Box]	LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PAR.
X"	CURB HEIGHT

LEAD EXPERT OFFICE	JEFFREY PERKINS OPERATIONS DIVISION		PEDESTRIAN CURB RAMP DETAILS				APPROVED: 11-04-2021 REVISED:	 THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.250	1 OF 6
	 DEPARTMENT OF TRANSPORTATION						STANDARD PLAN		STATE PROJ. NO.	SHEET NO.
									TRUNK HWY.	TOTAL SHEETS

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.

DANIEL VAN SCHEPEN, P.E.
DATE: 5-29-2025 REG. NO. 45596

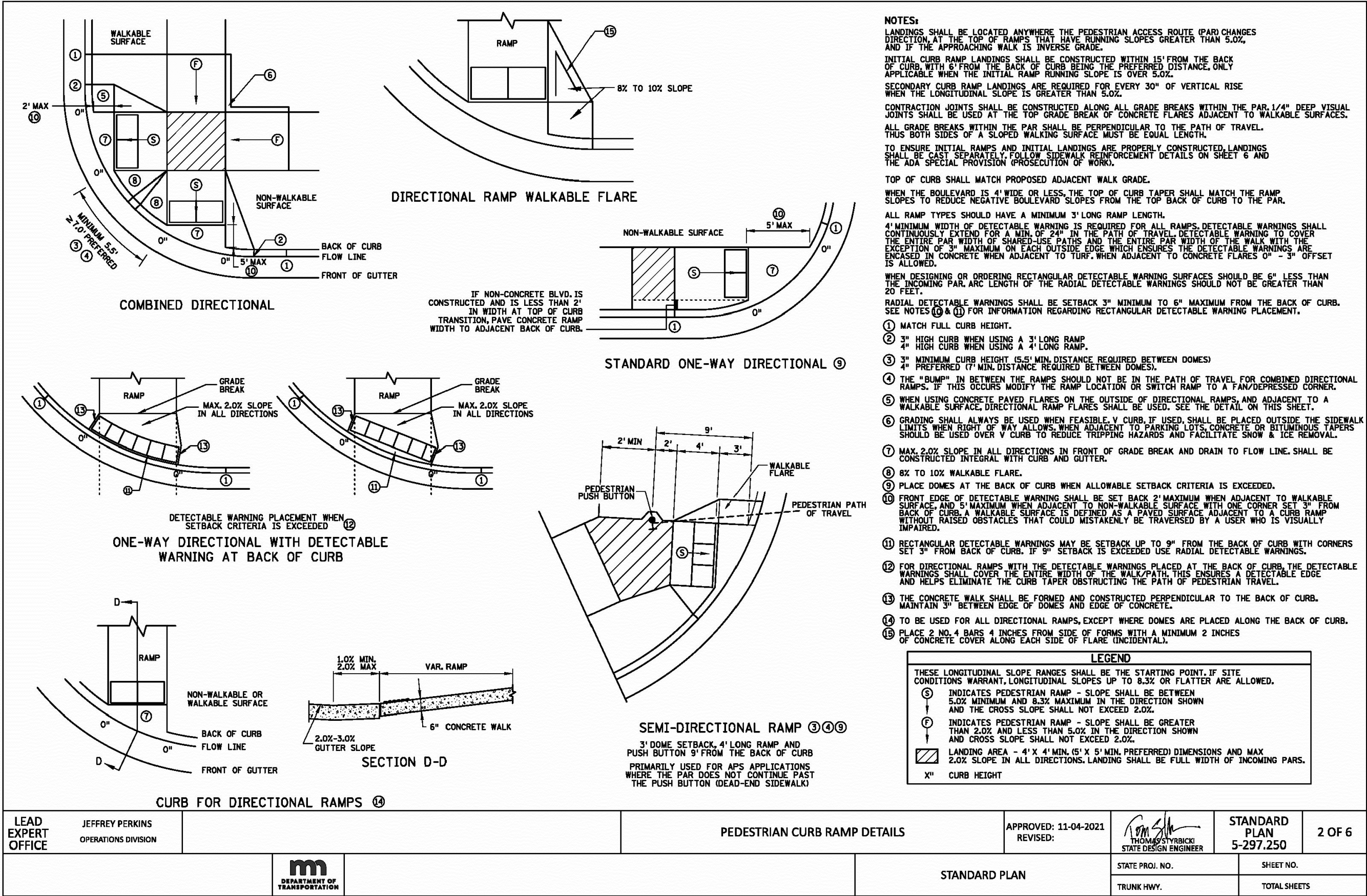


Project Manager: DLV
Designer: BMH
Project Number: 373179
Phone: (712) 472-2531

2025 ALLEY IMPROVEMENTS
WINDOM, MN

SIDEWALK DETAILS

S
H
E
E
T
C.04



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.

DANIEL VAN SCHEPEN, P.E.

DATE: 5-29-2025 REG. NO. 45596



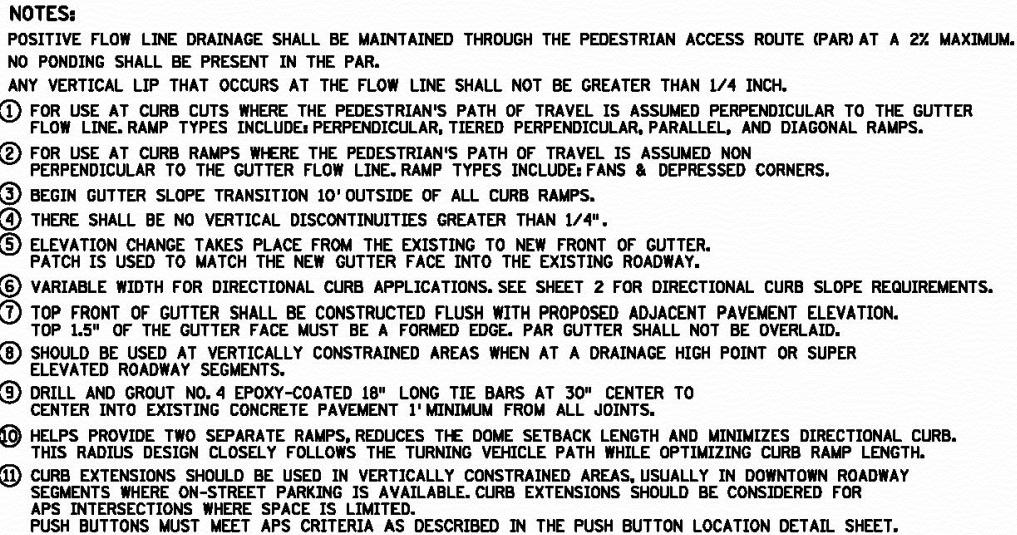
Project Manager: DLV
Designer: BMH
Project Number: 373179
Phone: (712) 472-2531

2025 ALLEY IMPROVEMENTS
WINDOM, MN

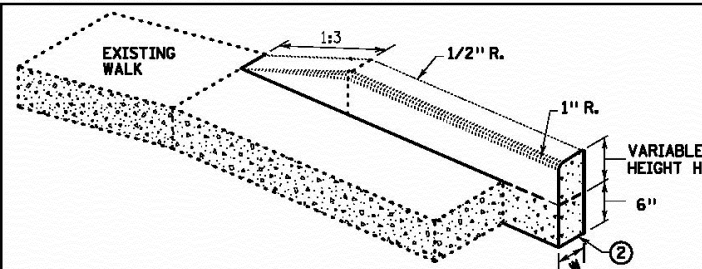
SIDEWALK DETAILS

S
H
E
E
T

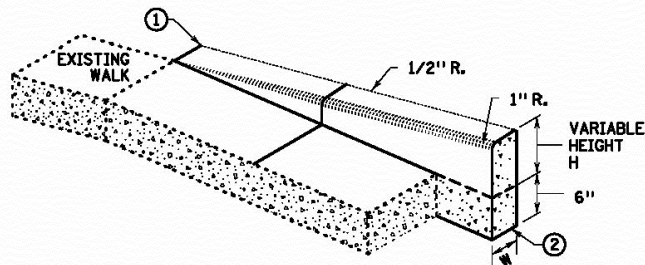
C.05



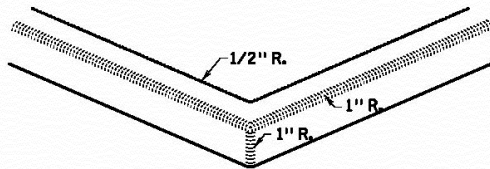




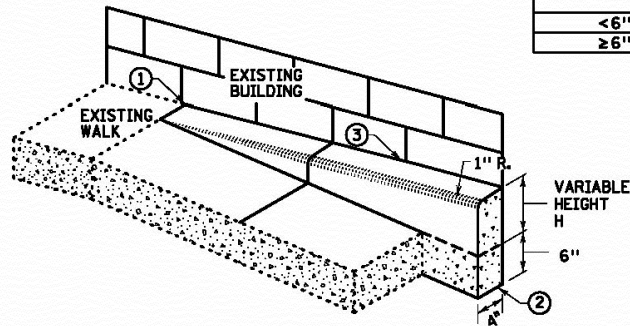
V CURB ADJACENT TO LANDSCAPE
CURB WITHIN SIDEWALK LIMITS



V CURB ADJACENT TO LANDSCAPE
CURB OUTSIDE SIDEWALK LIMITS

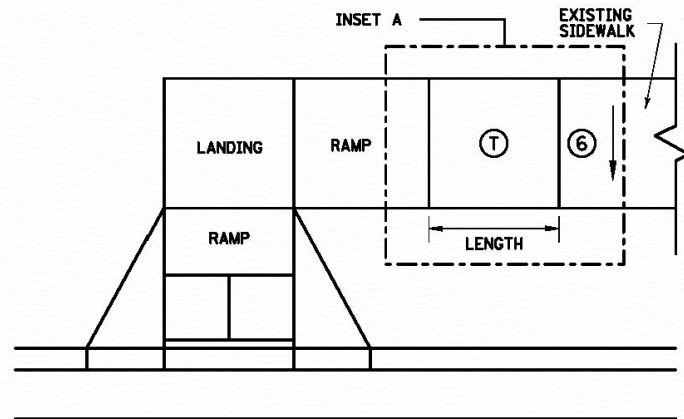


V CURB INTERSECTION

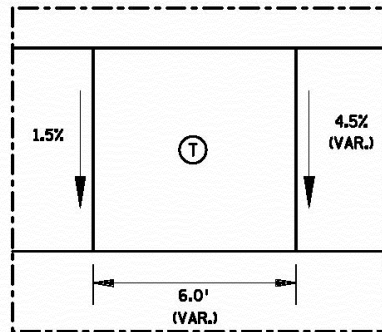


V CURB ADJACENT TO BUILDING
OR BARRIER

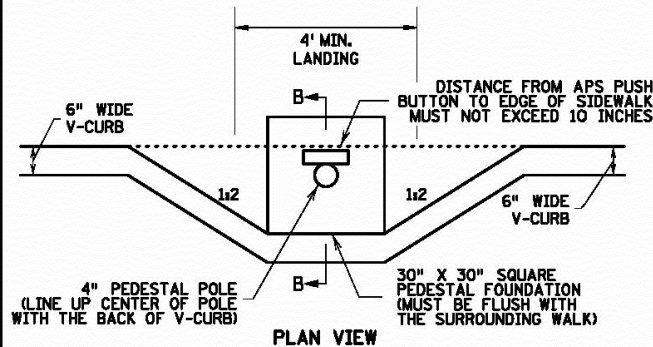
CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
<6"	4"
≥6"	6"



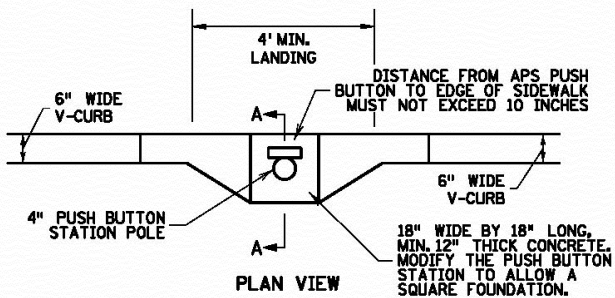
TRANSITION PANEL ④ ⑤



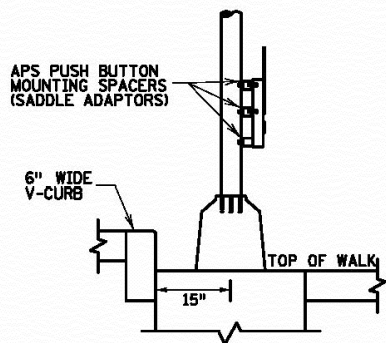
INSET A



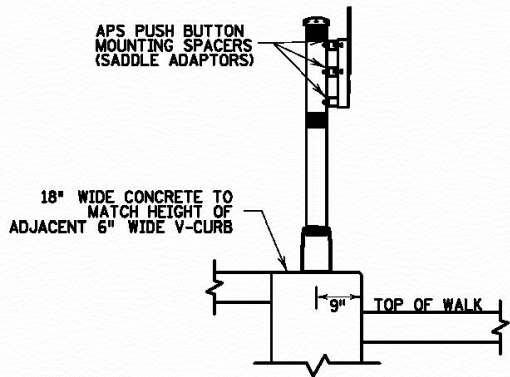
PLAN VIEW



PLAN VIEW



SECTION B-B
SIGNAL PEDESTAL & PUSH BUTTON (V-CURB)



SECTION A-A
PUSH BUTTON STATION (V-CURB)

NOTES:

A WALKABLE FLARE IS AN 8-10% CONCRETE FLARE THAT IS REQUIRED WHEN THE FLARE IS ADJACENT TO A WALKABLE SURFACE, OR WHEN THE PEDESTRIAN PATH OF TRAVEL OF A PUSH BUTTON TRAVERSES THE FLARE.

ALL V CURB CONTRACTION JOINTS SHALL MATCH CONCRETE WALK JOINTS.

WHERE RIGHT-OF-WAY ALLOWS, USE OF V CURB SHOULD BE MINIMIZED. GRADING ADJACENT TURF OR SLOPING ADJACENT PAVEMENT IS PREFERRED.

V CURB SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS.

V CURB NEXT TO BUILDING SHALL BE A 4" WIDTH AND SHALL MATCH PREVIOUS TOP OF SIDEWALK ELEVATIONS.

① END TAPERS AT TRANSITION SECTION SHALL MATCH INPLACE SIDEWALK GRADES.

② ALL V CURB SHALL MATCH BOTTOM OF ADJACENT WALK.

③ CONSTRUCT USING APPROVED EXPANSION MATERIAL PER MNDOT TYPE A-E EXPANSION. LEAVE A MINIMUM 1/2" TOP GAP AND SEAL WITH MNDOT APPROVED SILICONE PER MNDOT SPEC 3722.

④ THE MAX. RATE OF CROSS SLOPE TRANSITIONING IS 1' LINEAR FOOT OF SIDEWALK PER HALF PERCENT CROSS SLOPE. WHEN PAR WIDTH IS GREATER THAN 6' OR THE RUNNING SLOPE IS GREATER THAN 5%, DOUBLE THE CALCULATED TRANSITION LENGTH.

⑤ TRANSITION PANEL(S) - TO BE USED FOR TRANSITIONING THE CROSS-SLOPE OF A RAMP TO THE EXISTING WALK CROSS-SLOPE. RATE OF TRANSITION SHOULD BE 0.5% PER 1 LINEAR FOOT OF WALK. SEE THIS SHEET FOR ADDITIONAL INFORMATION.

⑥ EXISTING CROSS SLOPE GREATER THAN 2.0%.

LEGEND

THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.

⑤ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.

④ LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PARS.

① TRANSITION PANEL(S) - TO BE USED FOR TRANSITIONING THE CROSS-SLOPE OF A RAMP TO THE EXISTING WALK CROSS-SLOPE. RATE OF TRANSITION SHOULD BE 0.5% PER 1 LINEAR FOOT OF WALK. SEE THIS SHEET FOR ADDITIONAL INFORMATION.

LEAD EXPERT OFFICE
JEFFREY PERKINS
OPERATIONS DIVISION



PEDESTRIAN CURB RAMP DETAILS

APPROVED: 11-04-2021
REVISED:

THOMAS TYRICKI
STATE DESIGN ENGINEER

STANDARD PLAN
5-297.250

5 OF 6

STANDARD PLAN

STATE PROJ. NO.

SHEET NO.

TRUNK HWY.

TOTAL SHEETS

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.

DANIEL VAN SCHEPEN, P.E.
DATE: 5-29-2025 REG. NO. 45596

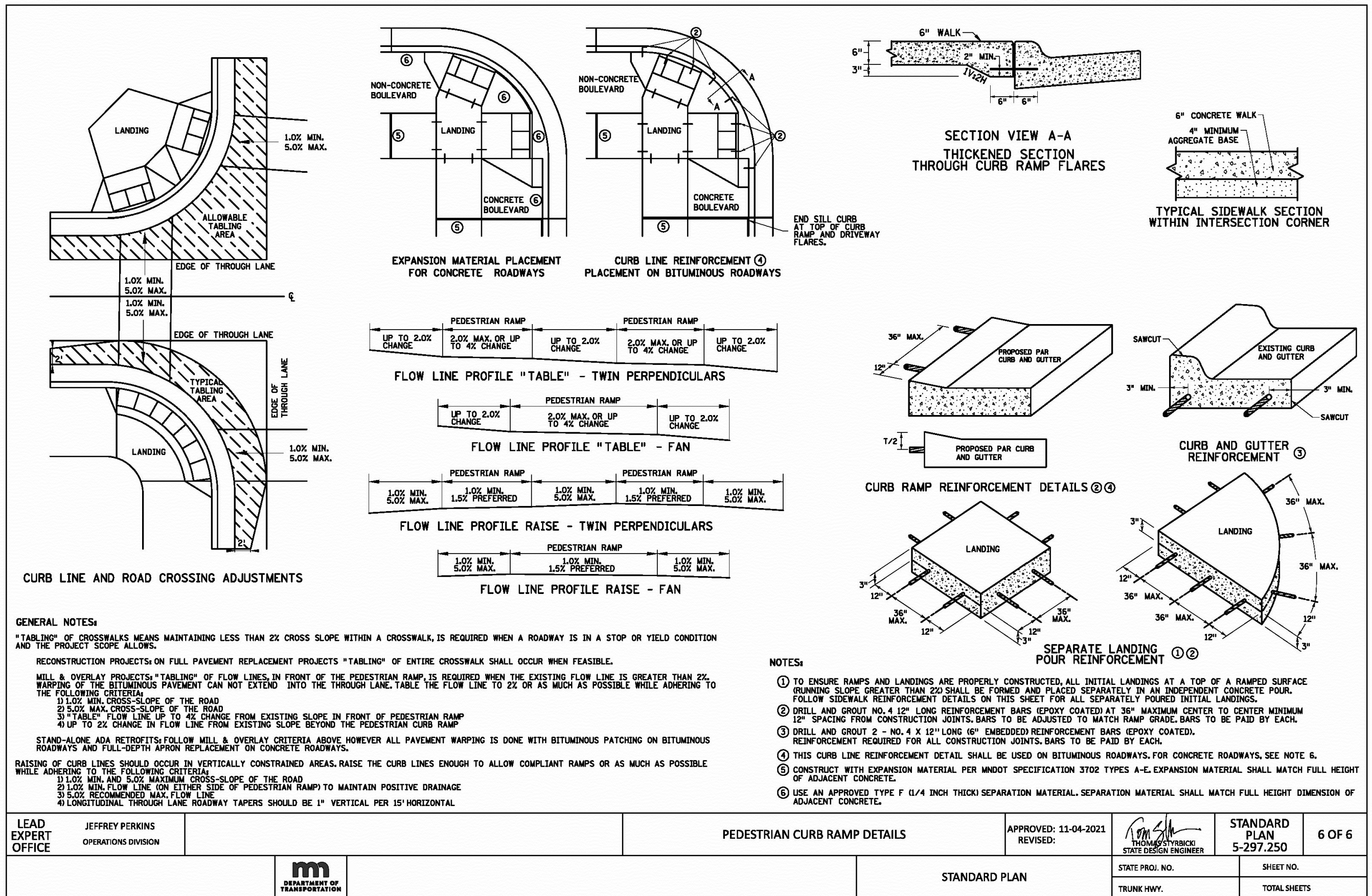


Project Manager: DLV
Designer: BMH
Project Number: 373179
Phone: (712) 472-2531

2025 ALLEY IMPROVEMENTS
WINDOM, MN

SIDEWALK DETAILS

SHEET
C.08



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.

DANIEL VAN SCHEPEN, P.E.
DATE: 5-29-2025 REG. NO. 45596

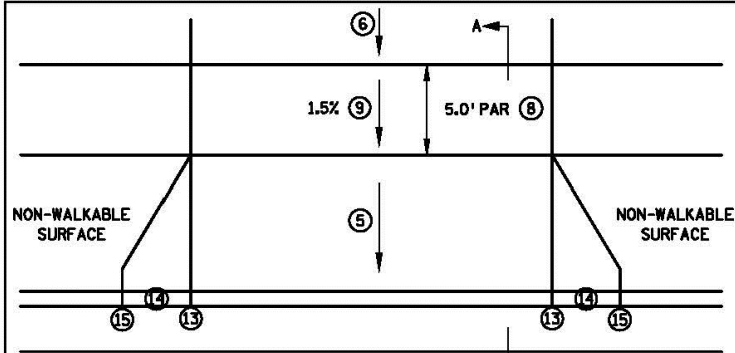


Project Manager: DLV
Designer: BMH
Project Number: 373179
Phone: (712) 472-2531

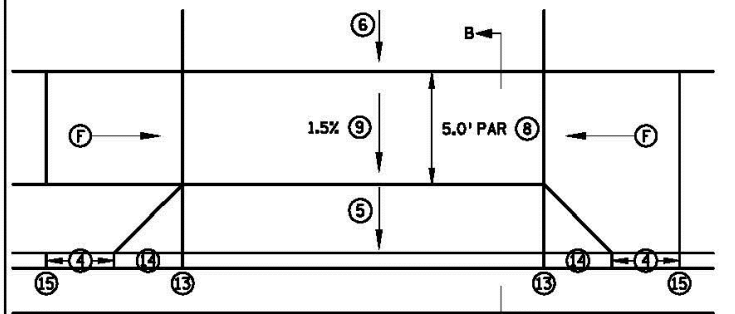
2025 ALLEY IMPROVEMENTS
WINDOM, MN

SIDEWALK DETAILS

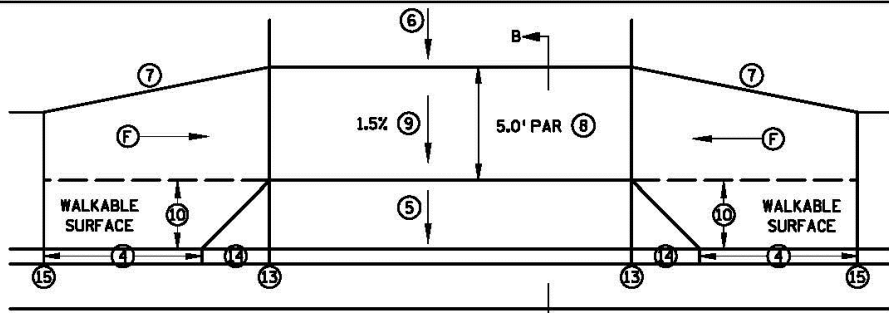
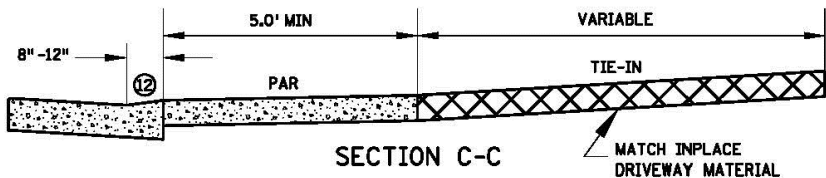
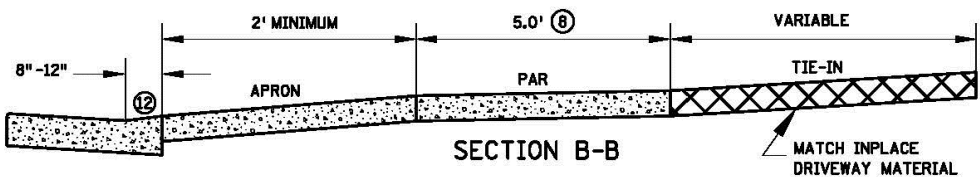
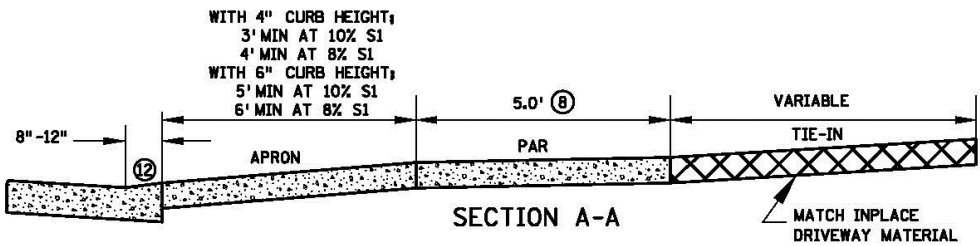
SHEET
C.09



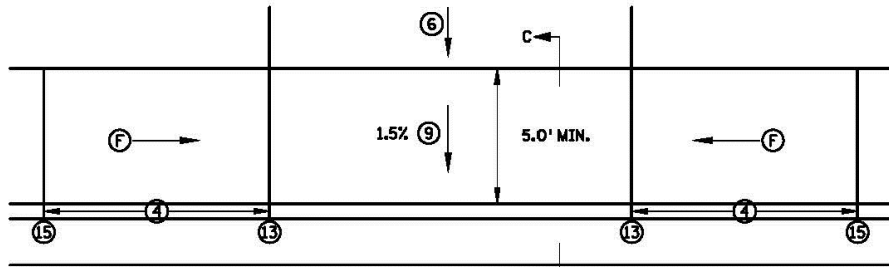
PERPENDICULAR DRIVEWAY ①



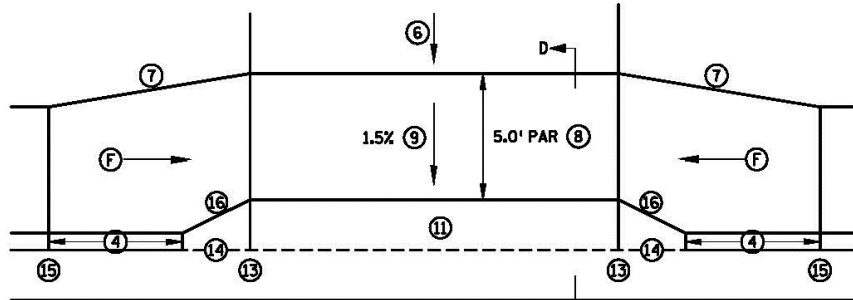
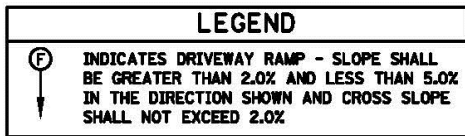
TIERED PERPENDICULAR DRIVEWAY ②



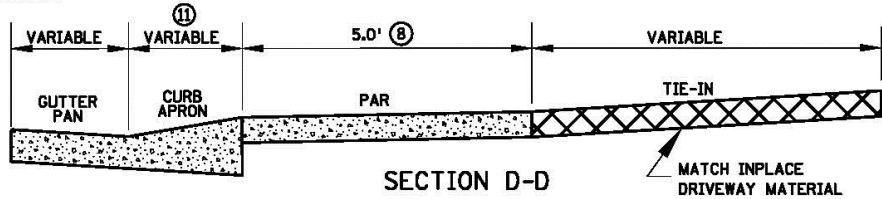
TIERED PERPENDICULAR OFFSET DRIVEWAY ②



PARALLEL DRIVEWAY ③



INTEGRAL DRIVEWAY APRON ⑪



SECTION D-D

NOTES:

ALL SIDEWALK AND BOULEVARD WIDTHS SHALL BE MEASURED FROM BACK OF CURB.

IN URBAN ROADWAY SECTIONS, 6" CURB HEIGHT SHOULD BE USED WHEN 6' OR GREATER BOULEVARD WIDTH IS PROPOSED. WHEN BOULEVARD IS LESS THAN 6' WIDE, 4" CURB HEIGHT SHOULD BE USED.

MAINTAIN EXISTING DRAINAGE PATTERNS FLOWING TO PUBLIC RIGHT OF WAY.

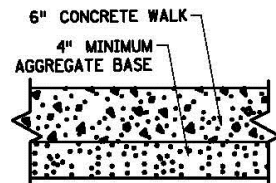
ACQUIRE ADEQUATE L3 TO ALLOW FOR A CONTINUOUS PAR PROFILE (UNIFORM TYPICAL SIDEWALK SECTION) THROUGH THE DRIVEWAY APRON.

IN NO CASE SHALL SIDEWALK PROFILES EXCEED 5.0%, EXCEPT SIDEWALK PROFILES CAN MATCH ROADWAY GRADE IF ROADWAY GRADE IS GREATER THAN 5.0%. RAMP FOR DRIVEWAYS ARE REQUIRED TO FOLLOW THE ABOVE SIDEWALK CRITERIA.

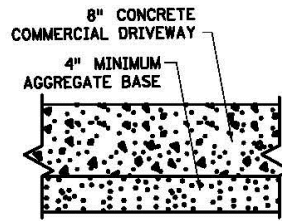
CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PEDESTRIAN ACCESS ROUTE (PAR). 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOPS OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.

DRIVEWAY TYPES FROM MOST PREFERRED TO LEAST PREFERRED ARE AS FOLLOWS: PERPENDICULAR, TIERED PERPENDICULAR, TIERED PERPENDICULAR OFFSET & PARALLEL.

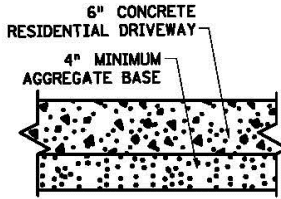
- PERPENDICULAR DRIVEWAYS ARE THE STANDARD AND STARTING POINT FOR ALL DRIVEWAY DESIGN AND CONSTRUCTION. SHOULD BE USED TO ACHIEVE CONTINUOUS PAR PROFILE THROUGH THE DRIVEWAY. OBTAINING A PERPENDICULAR DRIVEWAY DESIGN BECOMES MORE CRITICAL WITH STEEP ROADWAY PROFILES.
- TO BE USED WHEN PERPENDICULAR DRIVEWAY DESIGN CANNOT BE ACHIEVED, THE DRIVEWAY PAR IS BELOW ROADWAY CURB HEIGHT. THIS DRIVEWAY TYPE CAN BE USED FOR BOTH PAVED (AS SHOWN) AND GRASS BOULEVARDS.
- TO BE USED WHEN PERPENDICULAR AND TIERED PERPENDICULAR DRIVEWAY DESIGN CANNOT BE ACHIEVED. CAN BE USED FOR STEEP NEGATIVE SLOPED DRIVEWAYS. DW CURB TYPE 2 SHOULD BE USED TO RAISE PAR ABOVE GUTTER AND REDUCE "ROLLER COASTER" EFFECT. 4" HIGH ROADWAY CURB SHOULD BE USED TO REDUCE "ROLLER COASTER" EFFECT ESPECIALLY WHEN MULTIPLE DRIVEWAYS ARE PRESENT.
- TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.
- 8% STANDARD, 10% MAX. FOR COMMERCIAL AND 12% MAX. FOR RESIDENTIAL. SEE GENERAL NOTES ON SHEET 2 FOR MORE INFORMATION.
- S3 8% MAXIMUM. IF THE SLOPE IS EXCEEDED OR CONTINUED FOR MORE THAN 5', ANALYZE VEHICLE TEMPLATES FOR VERTICAL CLEARANCE. IF EXISTING DRIVEWAY IS NEGATIVELY DRAINING, S3 CAN BECOME SLIGHTLY MORE NEGATIVE TO ACHIEVE PERPENDICULAR DRIVEWAY DESIGN IF THE VERTICAL CLEARANCE IS ACHIEVED IN VEHICLE TEMPLATES.
- 1:3 MIN. 1:5 PREFERRED FOR DRIVEWAY RETROFIT PROJECTS. 1:10 PREFERRED FOR SIDEWALK REPLACEMENT PROJECTS.
- 5.0' MIN. PAR WIDTH IS THE STANDARD THROUGH DRIVEWAYS. IF FEASIBLE WIDEN DRIVEWAY PAR WIDTH TO MATCH APPROACHING SIDEWALK PAR WIDTHS. IN VERTICALLY CONSTRAINED AREAS PAR WIDTHS CAN INCREMENTALLY BE REDUCED TO 4.5' OR 4' MIN AFTER ALL OTHER OPTIONS HAVE BEEN APPLIED.
- THE PEDESTRIAN ACCESS ROUTE, MAY NOT EXCEED 0.02 FT./FT. AS CONSTRUCTED.
- SIDEWALK OFFSET TO BE LESS THAN OR EQUAL TO HALF THE APPROACHING SIDEWALK WIDTH.
- INTEGRAL DRIVEWAY APRON TO BE POURED MONOLITHICALLY/INTEGRAL WITH THE CURB AND GUTTER. SEE SHEET 2 FOR MORE INFORMATION.
- SEE SHEET 2 FOR CURB TYPE INFORMATION.
- 0" CURB IS AT FLOW LINE. SEE DRIVEWAY TABLE FOR BACK OF CURB HEIGHTS.
- 3' LONG AT 8-10% PREFERRED FOR INITIAL CURB TAPER. REDUCE CURB TAPER SLOPE IF NECESSARY TO MATCH ADJACENT SIDEWALK GRADES.
- MATCH FULL CURB HEIGHT.
- 1:2 TAPER RATE ON INTEGRAL DRIVEWAY APRONS.
- SEE SHEET 4 FOR WHEN 6" WALK IS REQUIRED.



TYPICAL SIDEWALK SECTION ⑪



TYPICAL DRIVEWAY SECTIONS



LEAD EXPERT OFFICE	JEFFREY PERKINS OPERATIONS DIVISION				DRIVEWAY AND SIDEWALK DETAILS	APPROVED: 11-04-2021 REVISED:	 THOMAS STYRBECKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.254	1 OF 4
 DEPARTMENT OF TRANSPORTATION						STANDARD PLAN	STATE PROJ. NO.	SHEET NO.	
							TRUNK HWY.	TOTAL SHEETS	

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.

DANIEL VAN SCHEPEN, P.E.
DATE: 5-29-2025 REG. NO. 45596



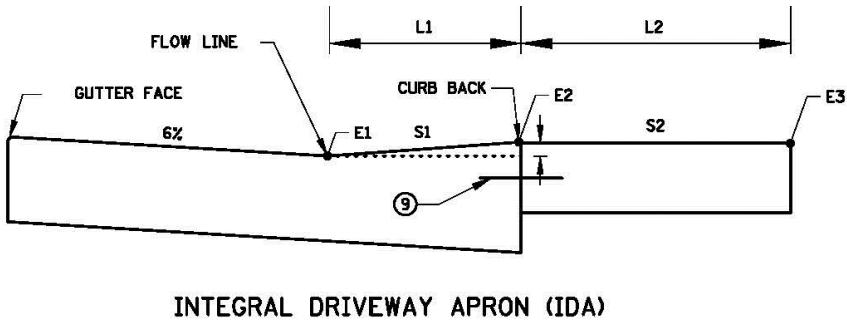
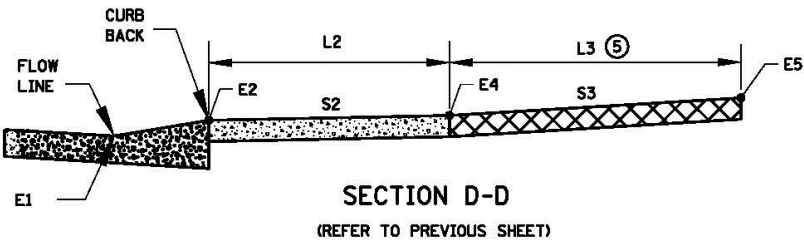
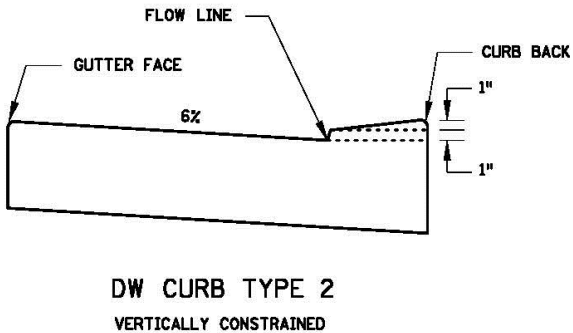
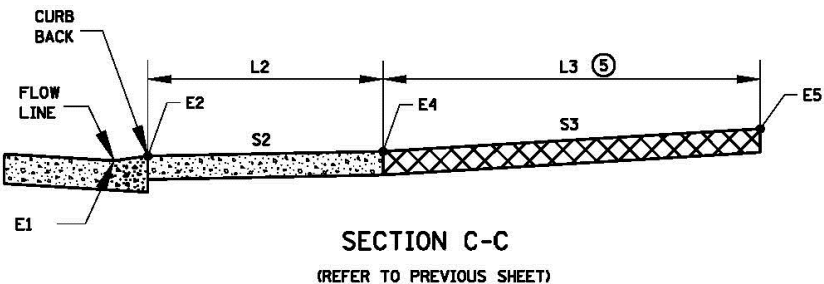
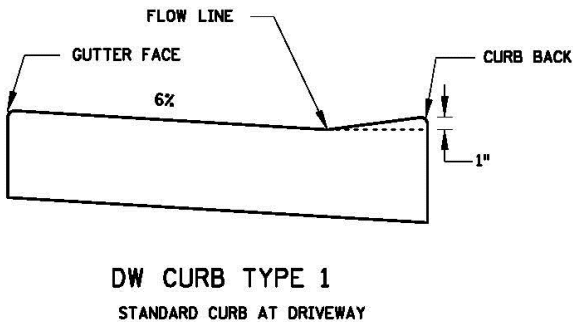
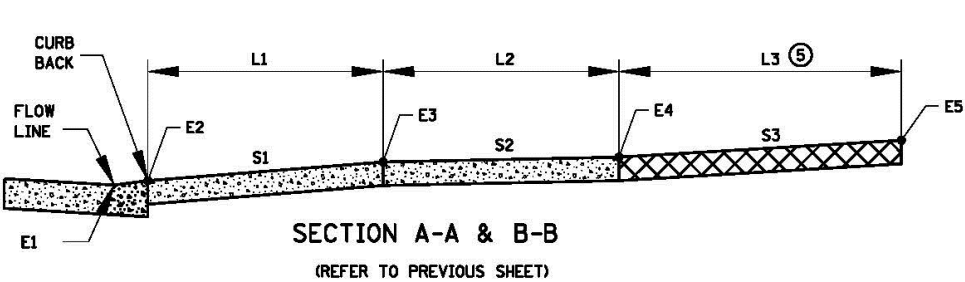
Project Manager: DLV
Designer: BMH
Project Number: 373179
Phone: (712) 472-2531

2025 ALLEY IMPROVEMENTS
WINDOM, MN

DRIVEWAY DETAILS

SHEET
C.10

DRIVEWAY TABLE ①																
STATION	SIDE	DRIVEWAY TYPE ②	CURB TYPE ③	E1	E2	L1	S1	E3	L2	S2 ④	E4	L3 ⑤	S3	EXISTING ⑥	E5	COMMENTS
						FT	%		FT	%		FT	%	%		



- NOTES:
- ALL SIDEWALK AND BOULEVARD WIDTHS SHALL BE MEASURED FROM BACK OF CURB.
- DW CURB TYPE 1 SHALL BE USED WHEN THE DRIVEWAY ACTS AS A PEDESTRIAN RAMP. THE MAX. APRON SLOPE MUST ADHERE TO ADA CRITERIA AS WELL. DW CURB TYPE 1 SHOULD BE USED IF THERE IS ON STREET PARKING.
- WHERE ROADWAY DRAINAGE IS A CONCERN (NEGATIVE SLOPED APRON) DW CURB TYPE 2 CAN BE USED TO HELP KEEP THE WATER ON PUBLIC RIGHT OF WAY.
- S1 8% STANDARD, 10% MAX. COMMERCIAL AND 12% MAX. RESIDENTIAL. IF EXISTING GRADES ARE STEEPER DO NOT MAKE GRADES APPRECIABLY WORSE BY USING BEST PRACTICES SUCH AS DRIVEWAY CURB HEIGHTS, EXTENDING L3 AND/OR STEEPEN S3.
- S3 8% MAXIMUM, IF THIS SLOPE IS EXCEEDED OR CONTINUED FOR MORE THAN 5', ANALYZE VEHICLE TEMPLATES FOR VERTICAL CLEARANCE. SEE FACILITY DESIGN GUIDE, CHAPTER 6, FOR GEOMETRIC DESIGNS OF DRIVEWAYS.
- ① EXAMPLE SHOWN TO BE INCLUDED IN PLAN FOR EACH DRIVEWAY THAT HAS PAR THROUGH IT.
- ② REFERS TO THE FOLLOWING TYPES: PERPENDICULAR DRIVEWAY, TIERED PERPENDICULAR OFFSET DRIVEWAY, TIERED PERPENDICULAR DRIVEWAY, PARALLEL DRIVEWAY, AND INTEGRAL DRIVEWAY APRON.
- ③ DW CURB TYPE 1 IS THE STANDARD AND SHALL BE THE STARTING POINT FOR ALL PERPENDICULAR AND TIERED DRIVEWAYS. DW CURB TYPE 2 SHALL ONLY BE USED AFTER UTILIZING BEST PRACTICES SUCH AS MAXIMIZING S1, S3, AND L3.
- ④ SHOULD BE DESIGNED AT 1.5%.
- ⑤ ACQUIRE ADEQUATE L3 TO ALLOW FOR CONTINUOUS PAR PROFILE (UNIFORM SIDEWALK SECTION) THROUGH THE DRIVEWAY APRON.
- ⑥ PROVIDE INPLACE TIE-IN SLOPE INFORMATION AT BACK OF PROPOSED WALK (S3 AREA).
- ⑦ INFORMATION TO BE INCORPORATED INTO DRIVEWAY TABLE WHEN INTEGRAL DRIVEWAY APRON IS USED. OTHER CURB HEIGHTS & CURB APRON LENGTHS CAN BE USED.
- ⑧ L1 & S1 FOR INTEGRAL DRIVEWAY APRON IS TO FLOWLINE. 12.5% IS MAXIMUM PREFERRED SLOPE.
- ⑨ TIE ADJACENT SECTIONS. CONCRETE DRIVEWAY APRON AND CONCRETE DRIVEWAY SIDEWALK SHALL BE CONSTRUCTED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. DRILL AND GROUT OR CAST IN-PLACE THROUGH HOLES IN THE FORMS NO. 4 X 12" LONG TIE BARS (EPOXY COATED). 36" MAXIMUM SPACING WITH 2" MINIMUM CONCRETE COVER PLACED 1' MINIMUM FROM ADJACENT CONSTRUCTION JOINT.

TYPICAL INTEGRAL DRIVEWAY APRON ⑦			
CURB TYPE	L1	E2	S1 ⑧
	FT		%
IDA 216	1.33	+0.16	12.5
IDA 220	1.67	+0.16	10
IDA 324	2	+0.24	12.5
IDA 432	2.67	+0.33	12.5

LEAD EXPERT OFFICE	JEFFREY PERKINS OPERATIONS DIVISION				DRIVEWAY AND SIDEWALK DETAILS	APPROVED: 11-04-2021 REVISED:	 THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.254	2 OF 4
	 DEPARTMENT OF TRANSPORTATION				STANDARD PLAN		STATE PROJ. NO.		SHEET NO.
							TRUNK HWY.		TOTAL SHEETS

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.

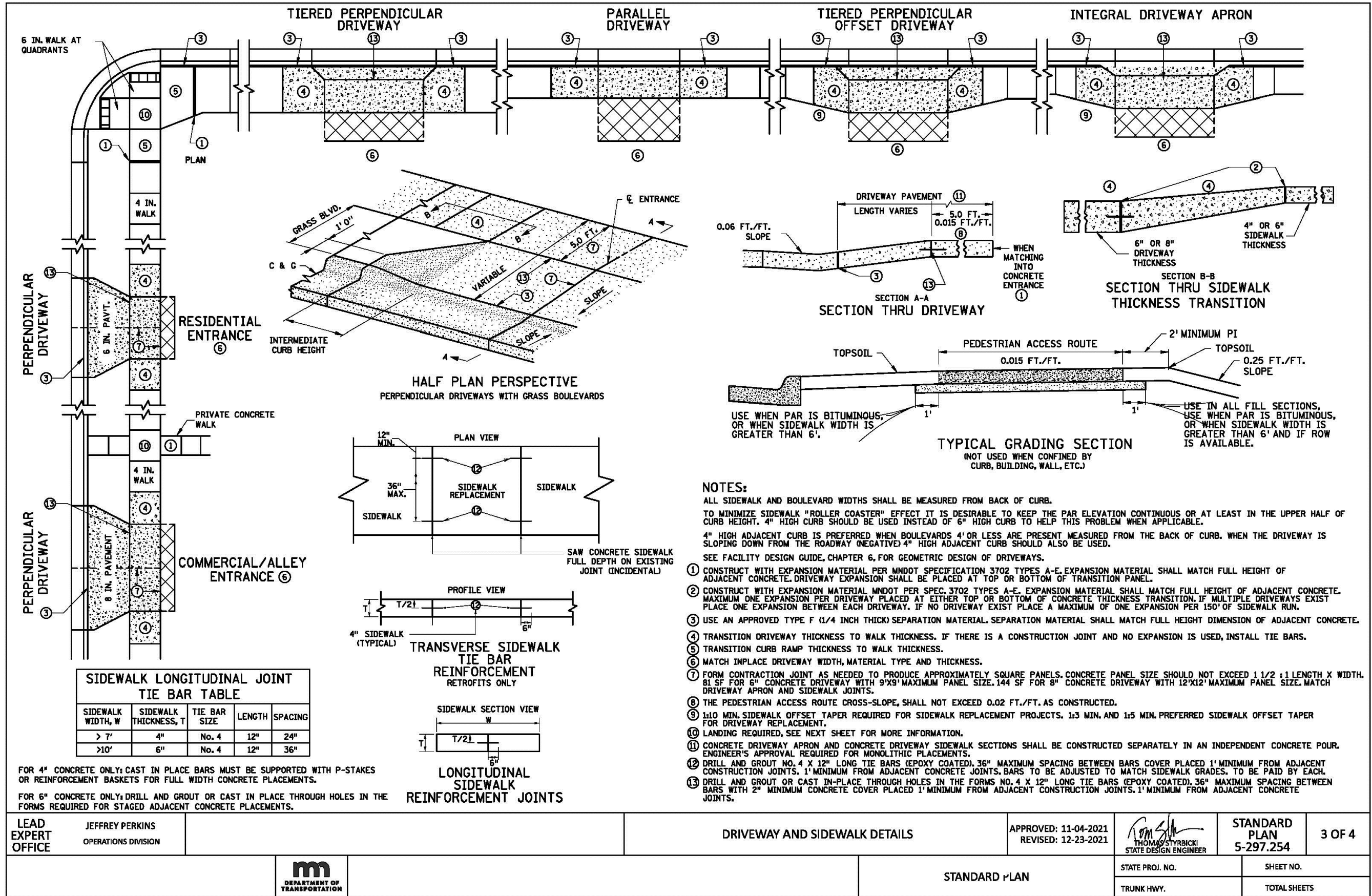

DANIEL VAN SCHEPEN, P.E.
DATE: 5-29-2025 REG. NO. 45596



Project Manager: DLV
Designer: BMH
Project Number: 373179
Phone: (712) 472-2531

2025 ALLEY IMPROVEMENTS
WINDOM, MN

DRIVEWAY DETAILS



SECTION VIEW B-B

PLAN VIEW DOORWAY

PLAN VIEW DOORWAY WITH ALCOVE SIDEWALK LANDING REQUIREMENTS ①

SECTION VIEW A-A

BUILDING JOINT SEAL (INCIDENTAL)

DOWNTOWN SIDEWALK TYPICAL SECTION

SLIP FORM SILL

FIXED FORM SILL

SILL CURB SHOULD BE USED AT ALL LOCATIONS WHEN CONCRETE WALK IS AT BACK OF CURB, INCLUDING PAVED BOULEVARD.
SILL CURB SHALL NOT BE USED IN CURB RAMP AND DRIVEWAY AREAS, INCLUDING CONCRETE FLARES.
SILL CURB WITH 4" WALK CAN USE FIXED OR SLIP FORM OPTIONS.

NOTES:

- 6" WALK IS REQUIRED:
- 1) IN ALL SIDEWALK LOCATIONS WHERE VARIABLE SLOPED CONCRETE BOULEVARDS ARE PAVED, SUCH AS COMMERCIAL (STORE FRONT, DOWNTOWN) AREAS.
 - 2) ANYTIME DRILL AND REINFORCEMENT IS USED TO TIE LONGITUDINAL JOINTS TOGETHER.
 - 3) TO ELIMINATE LONGITUDINAL JOINT WHEN INCREASING PANEL SIZE OVER 36SF.
 - 4) AT LOCATIONS WHERE MAINTENANCE EQUIPMENT WILL SUBJECT CONCRETE TO HEAVY LOADS.

ALL SIDEWALK AND BOULEVARD WIDTHS SHALL BE MEASURED FROM BACK OF CURB.
FIELD ADJUST SIDEWALK PROFILES TO MEET ALL DOORWAY THRESHOLDS.

SIDEWALK MUST MAINTAIN POSITIVE DRAINAGE AWAY FROM THE BUILDING TO THE ROADWAY.

SEE SPECIAL PROVISIONS FOR SILICONE SPECIFICATIONS.

- SEE SPECIFIC PROVISIONS FOR SILICONE SPECIFICATIONS.
- ① LANDING CRITERIA IS REQUIRED FOR ALL DOORS, STEPS, AND PRIVATE WALKS. FEASIBILITY DECREASES WITH NARROWER BOULEVARDS AND STEEPER SIDEWALK PROFILES.
- ② 18" MIN. WHEN DOOR SWINGS OUTWARD FROM BUILDING. 12" MIN WHEN DOOR SWINGS INWARD FROM BUILDING.
- ③ 6' MIN. PAR REQUIRED WHEN ADJACENT TO BUILDINGS.
- ④ 2/3 PAR TO 1/3 BOULEVARD SHOULD BE USED WHEN FEASIBLE. HOLD UNIFORM BOULEVARD WIDTH. 4' PREFERRED MINIMUM BOULEVARD.
- ⑤ 1%-5% FOR THE MAJORITY OF THE BLOCK, WITH EXCEPTIONS UP TO 8% IN CONSTRAINED AREAS.
- ⑥ CONSTRUCT USING APPROVED EXPANSION MATERIAL PER MNDOT TYPE A-E EXPANSION. LEAVE A MINIMUM 1/8" TOP GAP AND SEAL WITH MNDOT APPROVED SILICONE PER MNDOT SPEC 3722.
- ⑦ TO MINIMIZE VIBRATION AND ROLLING RESISTANCE, AREA SHALL BE FREE OF PAVERS, STAMPED CONCRETE, AND/OR EXCESSIVE JOINTING.
- ⑧ 2% MAX. PER BUILDING CODE. IF GREATER THAN 2%, FLATTEN AS FEASIBLE.
- ⑨ FORM CONTRACTION JOINTS AS NEEDED TO PRODUCE APPROXIMATELY SQUARE PANEL SIZE. CONCRETE PANEL SIZE SHOULD NOT EXCEED 1 1/2 : 1 LENGTH X WIDTH.
- ⑩ DRILL AND GROUT NO. 4 X 8" LONG TIE BARS (EPOXY COATED). 36" MAXIMUM SPACING BETWEEN BARS WITH 2" MINIMUM CONCRETE COVER PLACED 1' MINIMUM FROM ADJACENT CONSTRUCTION JOINTS. 1' MINIMUM FROM ADJACENT CONCRETE JOINTS. TIE BARS SHALL BE EMBEDDED 4" WITH 2" MINIMUM CONCRETE COVER AND ARE INCIDENTAL TO SILL PLACEMENT.
- ⑪ FURNISH AND INSTALL THE FULL WIDTH OF THE TOP OF SILL A MINIMUM 2ML THICK POLYTHENE SHEETING.
- ⑫ USE AN APPROVED TYPE F (1/4 INCH THICK) SEPARATION MATERIAL. SEPARATION MATERIAL SHALL MATCH FULL HEIGHT DIMENSION OF ADJACENT CONCRETE.
- ⑬ DIMENSION TO BE SAME AS SIDEWALK THICKNESS, 4" MIN.
- ⑭ 6" WALK, 5" MIN. FOR B424; 7" MIN. FOR B624
4" WALK, 7" MIN. FOR B424; 9" MIN. FOR B624
- ⑮ DRILL AND GROUT NO. 4 X 12" LONG TIE BARS (EPOXY COATED). 36" MAXIMUM SPACING BETWEEN BARS WITH 2" MINIMUM CONCRETE COVER PLACED 1' MINIMUM FROM ADJACENT CONCRETE JOINTS.

LEAD EXPERT OFFICE		JEFFREY PERKINS OPERATIONS DIVISION				DRIVEWAY AND SIDEWALK DETAILS		APPROVED: 11-04-2021 REVISED:		 THOMAS STYRBICKI STATE DESIGN ENGINEER		STANDARD PLAN 5-297.254		4 OF 4	
 DEPARTMENT OF TRANSPORTATION								STANDARD PLAN				STATE PROJ. NO.		SHEET NO.	
												TRUNK HWY.		TOTAL SHEETS	

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.

DANIEL VAN SCHEPEN, P.E.

DATE: 5-29-2025 REG. NO. 45596



Project Manager:	DLV
Designer:	BMH
Project Number:	373179
Phone:	(712) 472-2531

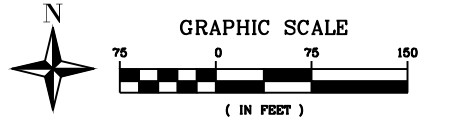
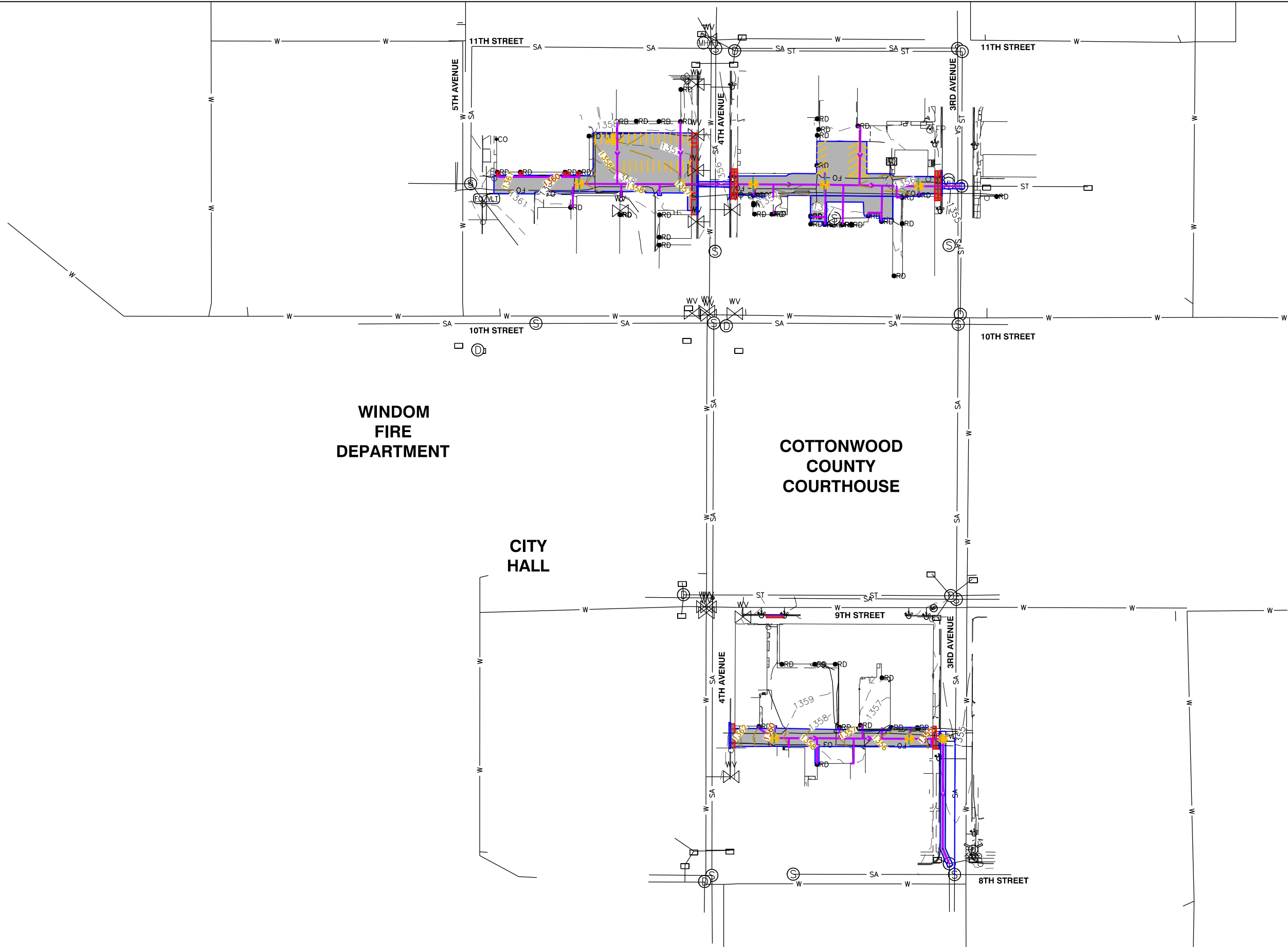
2025 ALLEY IMPROVEMENTS WINDOM, MN

DRIVEWAY DETAILS

S
H
E
E
T
C.13

Plot Date: 5/29/2025 4:22:06 PM

P:03073179\37179\DWG\37179DESIGN.DWG



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.

Daniel L. Van Schep
DANIEL L. VAN SCHEPEN, P.E.
DATE: 5-29-2025 REG. NO. 45596



Project Manager: DLV
Designer: BMH
Project Number: 373179
Phone: (712) 472-2531

2025 ALLEY IMPROVEMENTS
WINDOM, MN

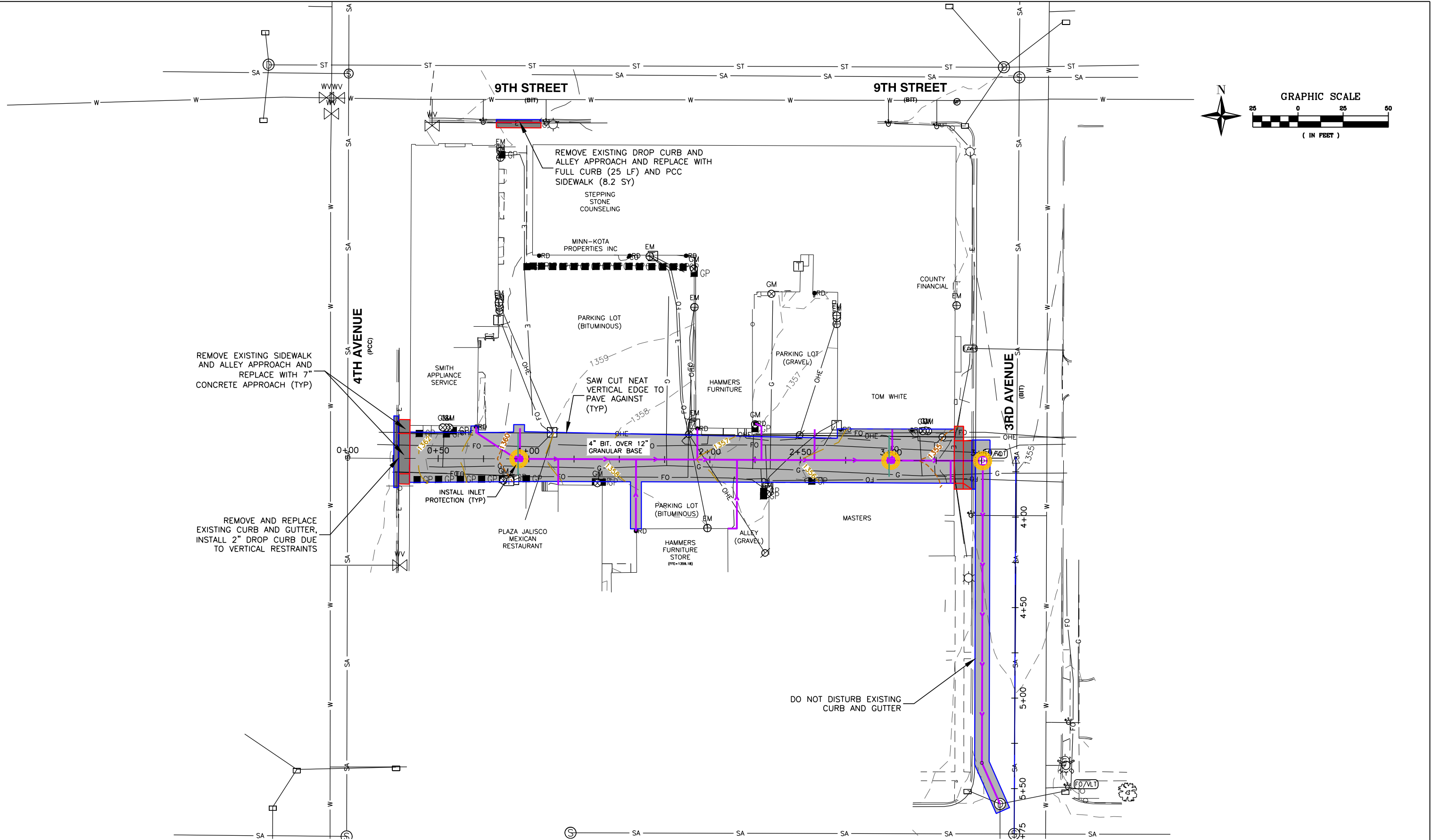
PROJECT OVERVIEW

S
H
E
E
T

D.01

Plot Date: 5/29/2025 4:23:25 PM

P:03073179\373179.DWG\373179DESIGN.DWG



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.

DANIEL L. VAN SCHEPEN, P.E.
DATE: 5-29-2025 REG. NO. 45596



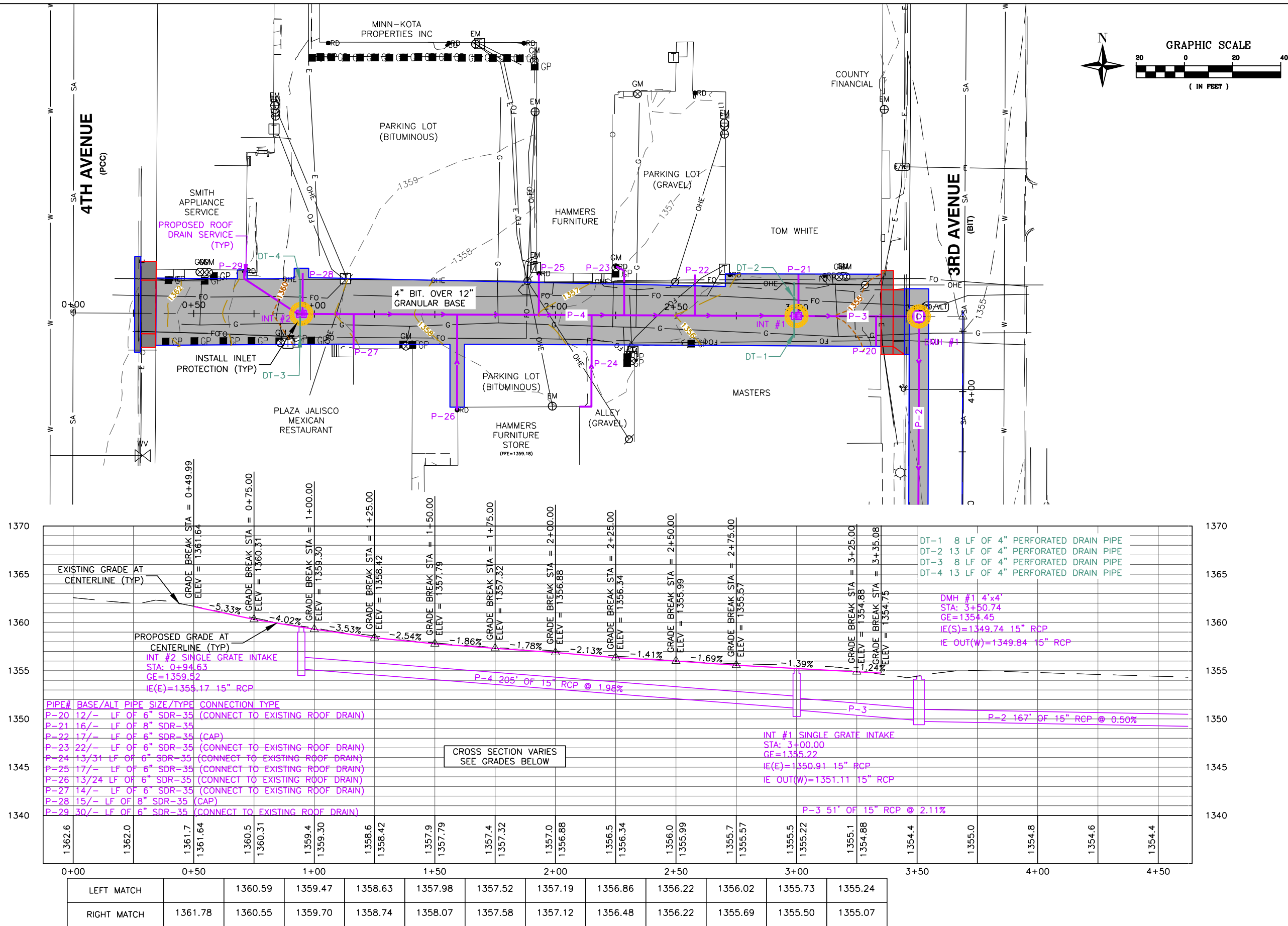
Project Manager: DLV
Designer: BMH
Project Number: 373179
Phone: (712) 472-2531

2025 ALLEY IMPROVEMENTS WINDOM, MN

8TH - 9TH STREET ALLEY PAVING PLAN

S
H
E
E
T

D.02



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.

DANIEL L. VAN SCHEPEN, P.E.

DATE: 5-29-2025 REG. NO. 45596



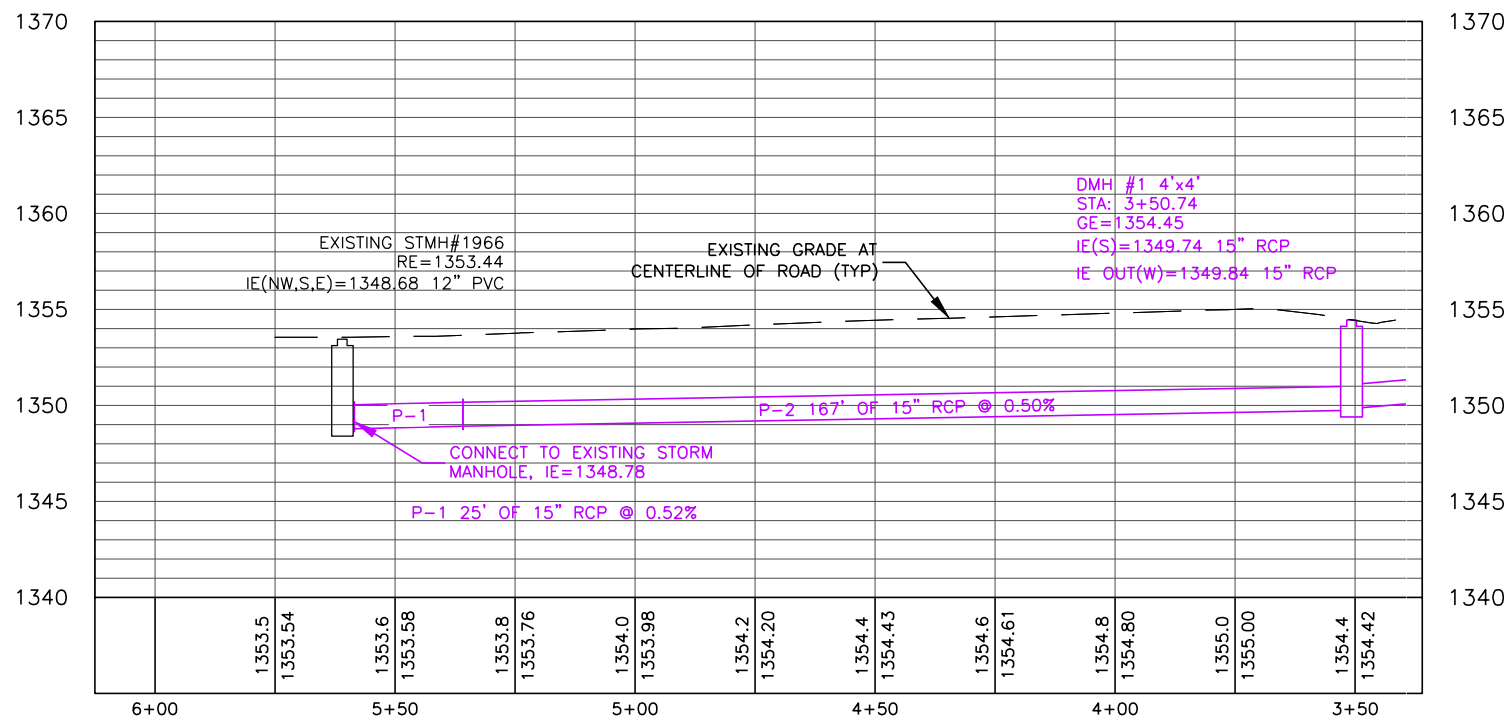
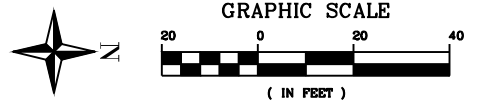
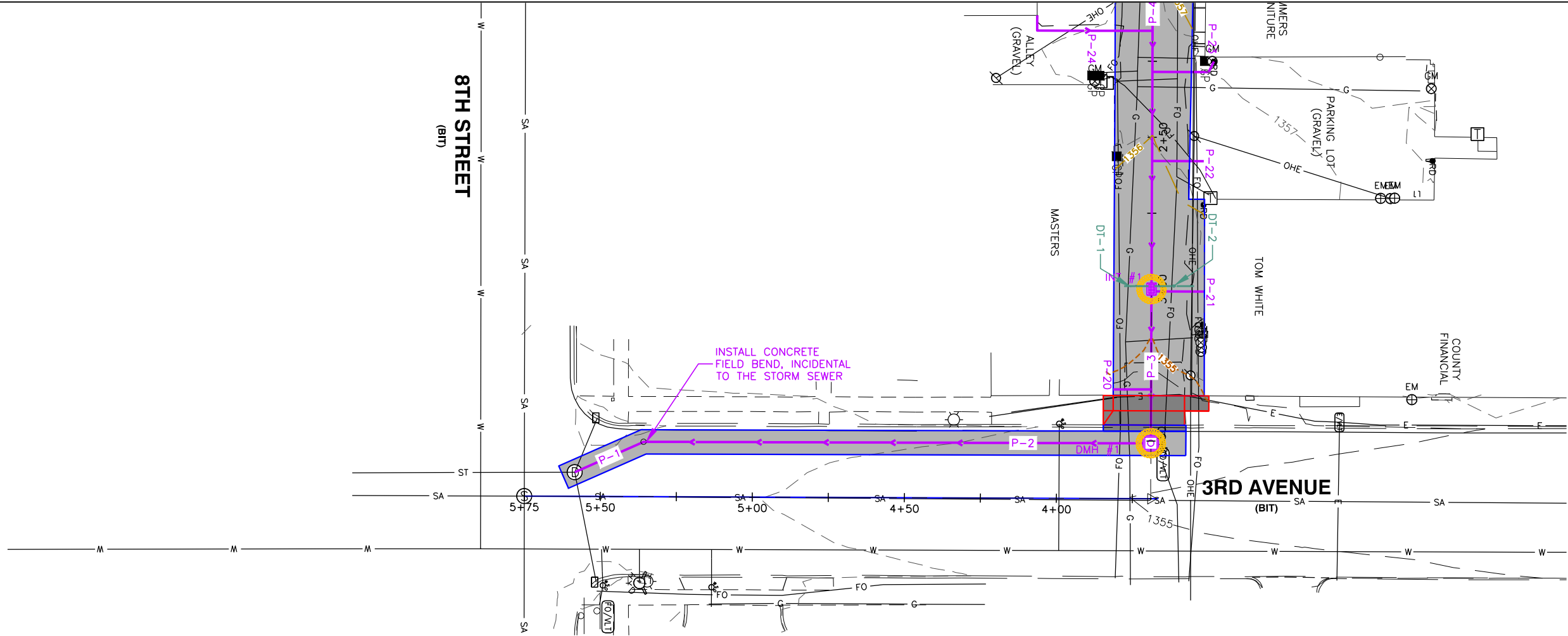
Project Manager: DLV
Designer: BMH
Project Number: 373179
Phone: (712) 472-2531

2025 ALLEY IMPROVEMENTS WINDOM, MN

8TH - 9TH STREET ALLEY STORM SEWER PLAN/PROFILE

S
H
E
E
T

D.03



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.

DANIEL L. VAN SCHEPEN, P.E.

DATE: 5-29-2025 REG. NO. 45596



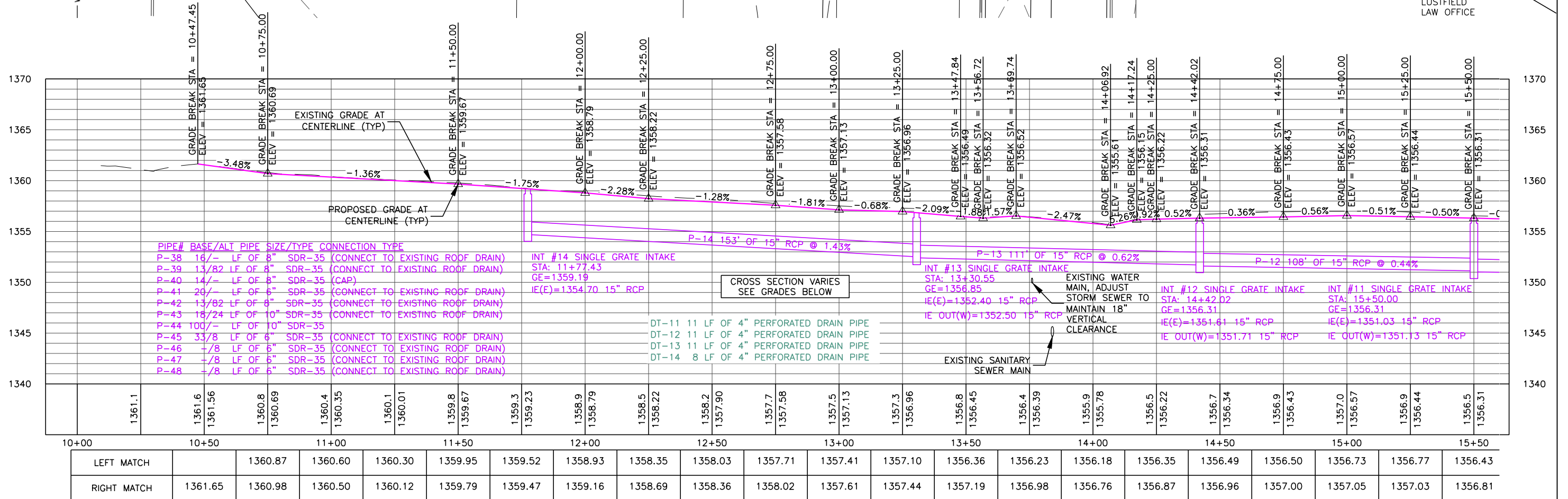
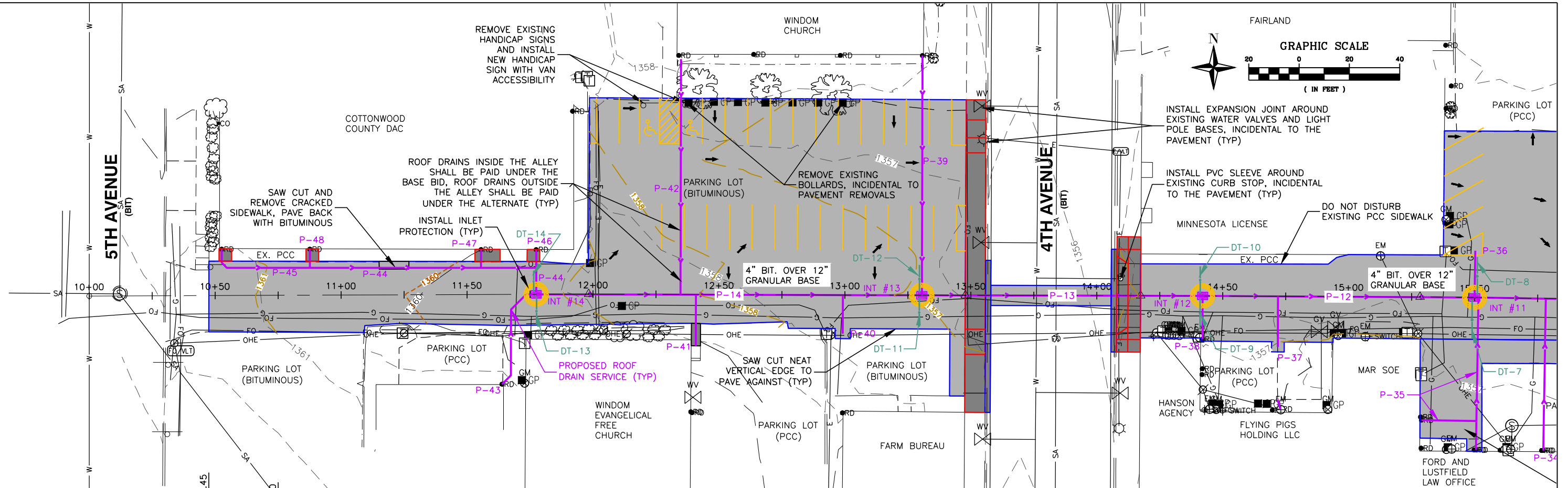
Project Manager: DLV
Designer: BMH
Project Number: 373179
Phone: (712) 472-2531

2025 ALLEY IMPROVEMENTS
WINDOM, MN

8TH - 9TH STREET ALLEY STORM SEWER
PLAN/PROFILE

S
H
E
E
T

D.04



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.

DANIEL L. VAN SCHEPEN, P.E.

DATE: 5-29-2025 REG. NO. 45596

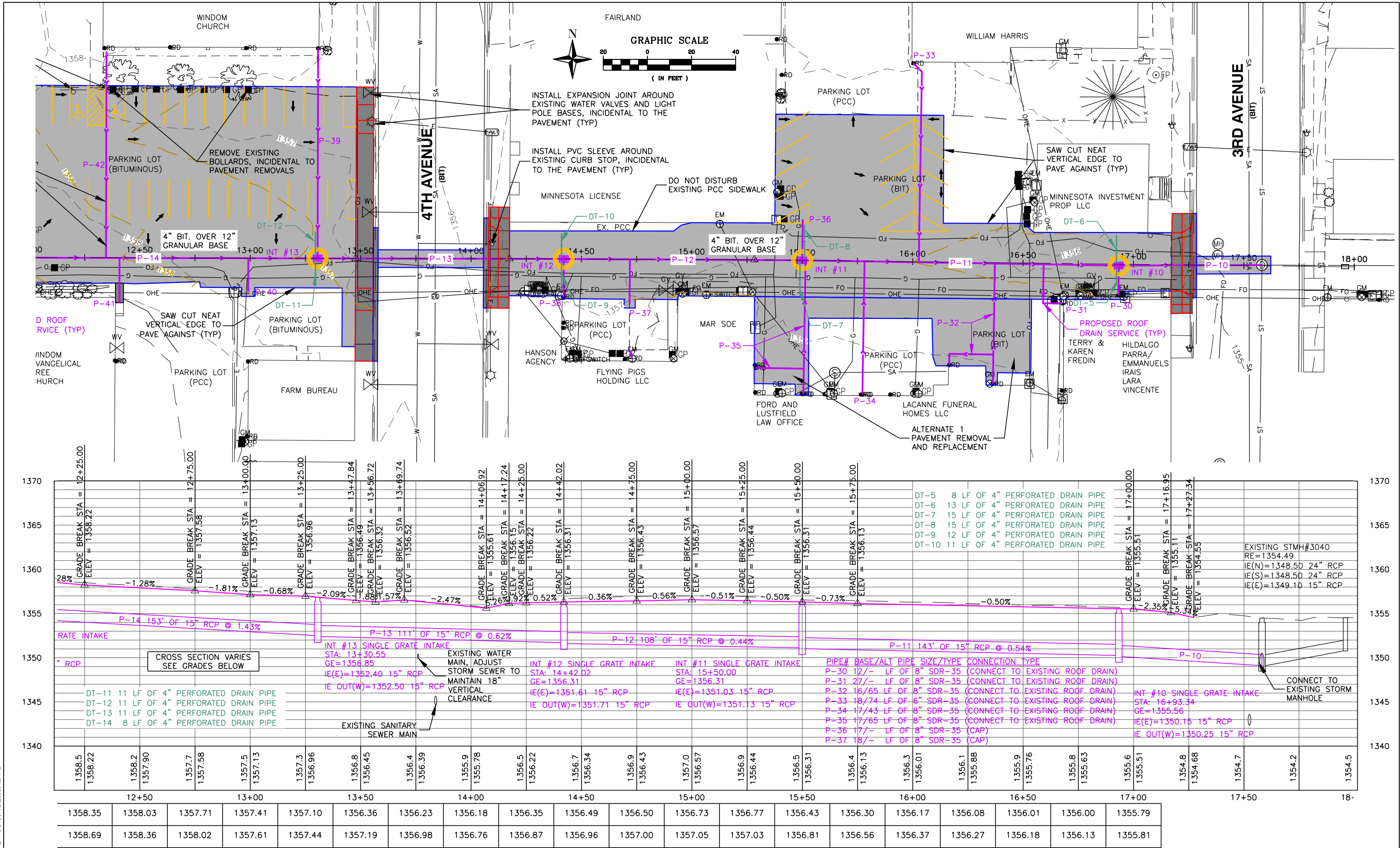


Project Manager: DLV
Designer: BMH
Project Number: 373179
Phone: (712) 472-2531

2025 ALLEY IMPROVEMENTS WINDOM, MN

10TH - 11TH STREET ALLEY PLAN/PROFILE

SHEET
D.05



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.

DANIEL L. VAN SCHEPEN, P.E.

DATE: 5-29-2025 REG. NO. 45596



Project Manager: DLV
Designer: BMH
Project Number: 373179
Phone: (712) 472-2531

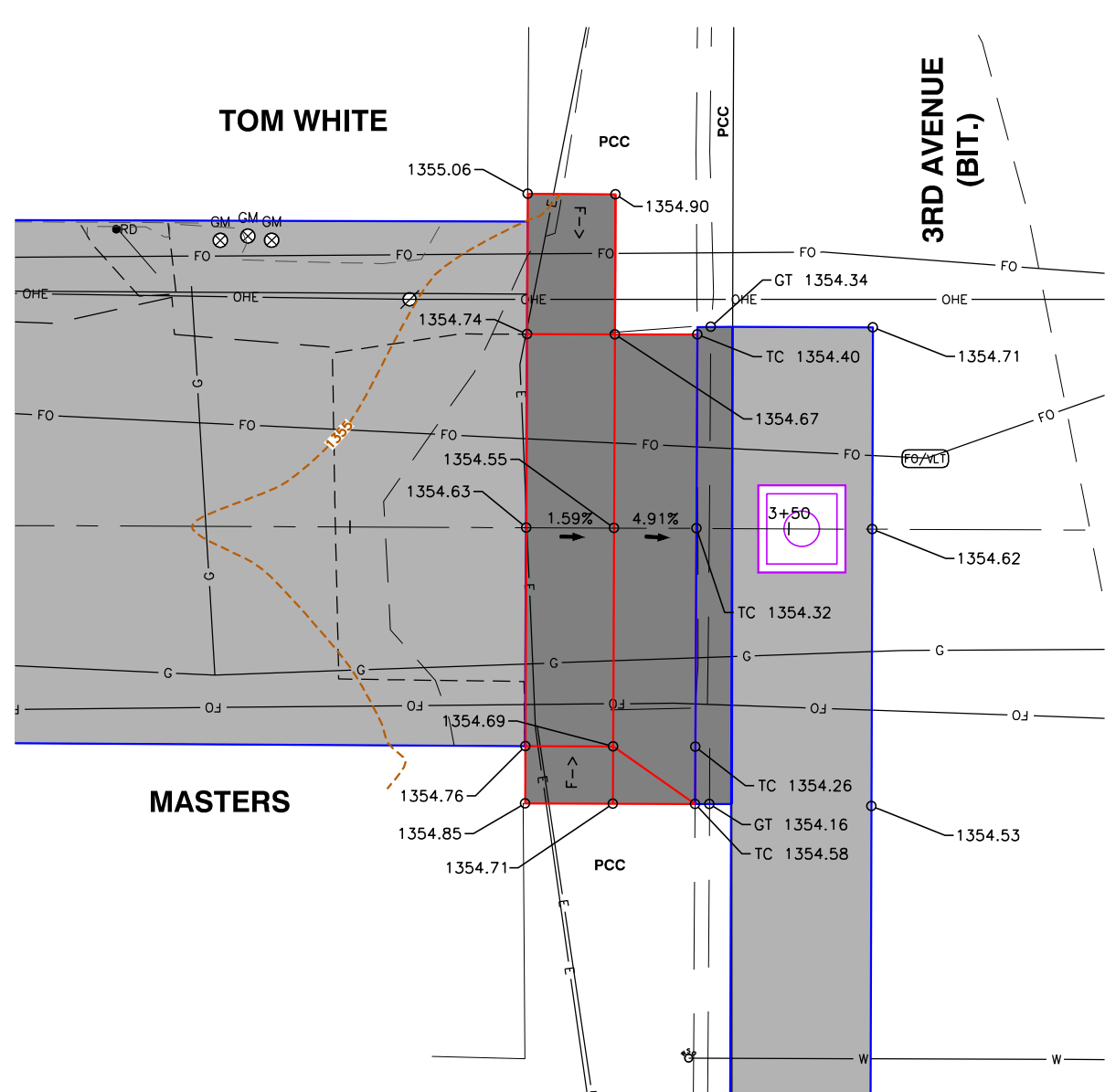
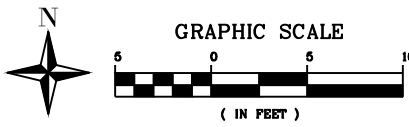
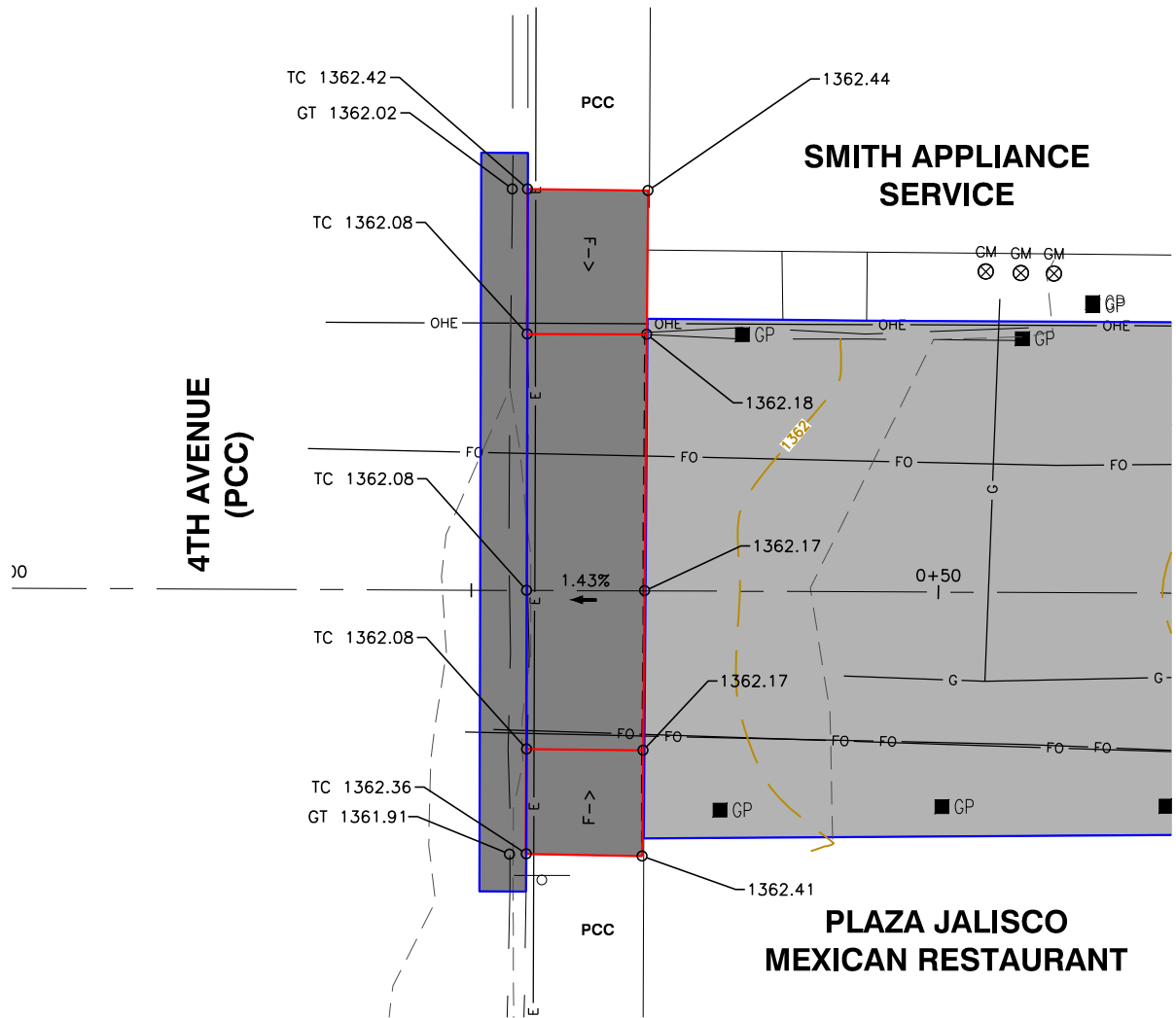
2025 ALLEY IMPROVEMENTS
WINDOM, MN

10TH - 11TH STREET ALLEY PLAN/PROFILE

SHEET
D.06

Plot Date: 5/29/2025 4:25:50 PM

P:03073179\373179.DWG\373179.DWG



<-F INDICATES DRIVEWAY RAMP - SLOPE SHALL BE GREATER THAN 2.0% & LESS THAN 5.0% IN THE DIRECTION SHOWN. THE CROSS SLOPE SHALL NOT EXCEED 2.0%.

o-XXXX.XX GUTTER GRADE/TOP OF FINISHED SURFACE

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.

DANIEL L. VAN SCHEPEN, P.E.

DATE: 5-29-2025 REG. NO. 45596



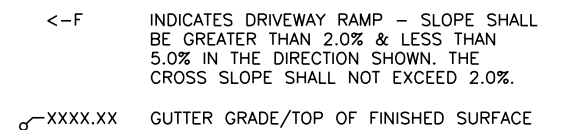
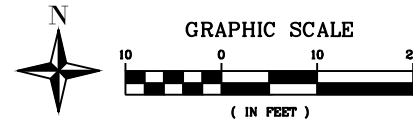
Project Manager: DLV
Designer: BMH
Project Number: 373179
Phone: (712) 472-2531

2025 ALLEY IMPROVEMENTS
WINDOM, MN

PAVEMENT DETAILS

S
H
E
E
T

L.01



DATE: 5-29-2025 REG. NO. 45596



2025 ALLEY IMPROVEMENTS WINDOM, MN

PAVEMENT DETAILS

S H E E	L.02
------------------	------