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**SPECIFICATIONS AND CONTRACT DOCUMENTS**

**FOR**

***11<sup>TH</sup> STREET DRAINAGE IMPROVEMENTS***

***ONAWA DRAINAGE DISTRICT  
MONONA COUNTY, IOWA***

***JANUARY 2024***








**SPECIFICATIONS AND CONTRACT DOCUMENTS  
FOR  
11<sup>TH</sup> STREET DRAINAGE IMPROVEMENTS  
ONAWA DRAINAGE DISTRICT  
MONONA COUNTY, IOWA**

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 Iowa.



Signed:

Dated:

 1/18/2024

Patrick E. Mouw, P.E.

Iowa License No. 20839

My license renewal date is December 31, 2025

Detailed parts covered by this seal:

ALL

Prepared by  
VEENSTRA & KIMM, INC.  
Sergeant Bluff, Iowa







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The Iowa Department of Transportation Standard Specifications for Highway and Bridge Construction Series 2023, Plus General Supplemental Specifications, and applicable Supplemental Specifications, Developmental Specifications, and Special Provisions shall apply to construction on this project.







**NOTICE TO BIDDERS**

**11<sup>TH</sup> STREET DRAINAGE IMPROVEMENTS  
ONAWA DRAINAGE DISTRICT  
MONONA COUNTY, IOWA**

Sealed proposals will be received by the Board of Trustees (the "Trustees") of the Onawa Drainage District, in the Monona County Drainage Office at 610 Iowa Avenue, Onawa, Iowa 51040, until 3:30 PM on the 16<sup>th</sup> day of February, 2024, for the construction of certain drainage improvements and such other work as may be incidental thereto, as described in the plans and specifications therefor now on file in the office of the said District Engineer entitled:

**11<sup>TH</sup> STREET DRAINAGE IMPROVEMENTS  
ONAWA DRAINAGE DISTRICT  
MONONA COUNTY, IOWA**

At said time and place, proposals received will be opened and the results will be announced. Proposals will be acted upon by the Trustees at a meeting to be held on the 20<sup>th</sup> day of February 2024, or at such later time as may then be fixed.

The Work will include but is not limited to the following improvements:

Work will include Class 10 excavation roadway and borrow, subgrade stabilization material, PCC pavement, flooded backfill, intakes, storm sewer, pavement removal, traffic control, mulching, seeding and fertilizing, and other related construction work including cleanup.

Each proposal shall be made on a form furnished by the Trustees and must be accompanied by a cashier's check or certified check drawn on a state-chartered or a federal chartered bank or a certified share draft drawn on a state-chartered or federally chartered credit union or a bid bond on a form furnished by the Trustees; bid bonds on any other form will not be accepted and the bids they secure will not be opened. All bid bonds must be executed by a corporation authorized to contract as a surety in Iowa and filed in an envelope separate from the one containing the proposal, sealed and in an amount equal to five percent (5%) of the amount of the proposal made payable to the Monona County Auditor on behalf of the Onawa Drainage District, and may be cashed by the Trustees as liquidated damages in the event the successful bidder fails to enter into a contract within 10 days of award and post bond satisfactory to the Trustees insuring the faithful fulfillment of the contract as required by law and the specifications.

All payments shall be in the form of Warrants drawn on the District or by cash. The monthly progress payment will be made within thirty (30) days from the date the progress payment is approved by the District. Final payment will be made not less than thirty (30) days after completion of the work and acceptance by the District. Retention of unpaid funds and final payment shall be in accordance with Chapter 468, Code of Iowa, as amended.



The successful bidder will be required to furnish a performance, payment and maintenance bond in an amount equal to one hundred percent (100%) of the contract price, said bond to be issued by a responsible surety approved by the Trustees and shall guarantee the faithful performance of the contract and terms and conditions therein contained, shall guarantee the prompt payment for all materials and labor and protect and save harmless the Onawa Drainage District from claims and damages of any kind caused by the operations of the Contractor, and shall also guarantee the maintenance of the improvement caused by failures in materials and construction for a period of two years from and after acceptance of the contract. If applicable, the guaranteed maintenance period for new paving shall be four years.

Plans and specifications governing the construction of the proposed improvements have been prepared by Veenstra & Kimm, Inc., Consulting Engineers for the Trustee, which plans and specifications and the proceedings referring to and defining said proposed improvements are hereby made a part of this Notice and the proposed contract by reference, and the proposed contract shall be executed in compliance therewith. A copy of said plans and specifications are now on file at the Monona County Drainage Office, 610 Iowa Avenue, Onawa, Iowa 51040, for examination by bidders. Electronic copies of said plans and specifications will be available at [www.QuestCDN.com](http://www.QuestCDN.com). Downloads of the project documents require the user to register for a free membership at [www.QuestCDN.com](http://www.QuestCDN.com). Please contact [QuestCDN.com](http://www.QuestCDN.com) for assistance with free membership registration. A complete paper set of bid documents, including the plans and specifications, may be obtained from the Engineer, Veenstra & Kimm, Inc., 203 Sergeant Square Drive, Suite B, Sergeant Bluff, Iowa, email: [nwiowa@v-k.net](mailto:nwiowa@v-k.net), phone: (712) 943-5055.

**The completion date shall be August 30, 2024.** Liquidated damages in the amount of \$250.00 per day shall be assessed by the contractor for each calendar day that work proceeds on the project beyond the specified completion date, excepting authorized extensions thereof.

The Trustees hereby notifies all bidders that it will affirmatively insure that in any contract entered into pursuant to this advertisement, minority business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color or national origin in consideration for an award.

The Board of Trustees reserves the right to reject any or all proposals and to waive informalities.

Published upon order of the Board of Trustees of the Onawa Drainage District.

ONAWA DRAINAGE DISTRICT

By: Drainage Clerk, Monona County



## INSTRUCTIONS TO BIDDERS

### **11<sup>th</sup> STREET DRAINAGE IMPROVEMENTS ONAWA DRAINAGE DISTRICT MONONA COUNTY, IOWA**

#### **1. DESCRIPTION**

Sealed proposals are solicited by the Onawa Drainage District, Monona County, Iowa, for the construction of drainage improvements. The improvements will consist generally of class 10 excavation and backfill, subgrade stabilization material, PCC pavement, flooded backfill, intakes, storm sewer, pavement removal, traffic control, mulching and seeding and other items of work considered incidental thereto.

#### **2. BIDDER'S KNOWLEDGE**

Prospective bidders should examine the site of the proposed improvements to familiarize themselves with all factors and conditions affecting the construction of the proposed improvements.

#### **3. METHOD OF BIDDING**

All bid items are based on unit prices. The quantities of each item have been estimated from the construction plans. The unit price bid for each item of work shall be full compensation to the contractor for the complete installation of that particular item, including incidental items of cost not listed but necessary to complete the bid item. In the event of discrepancies between unit prices and unit price extensions listed in the bidder's proposal, the unit prices shall govern. If a unit price line is left blank, the unit price will be zero dollars.

#### **4. SUBMISSION OF BIDS**

Bids shall be submitted on forms furnished by the Drainage District through its Engineer, to the address as shown on the Bid Form, no later than the time and date as specified in the Notice. **Bidders shall be a Plan Holder having obtained plans as furnished by the Engineer's Office. Bids from non-plan holders shall be rejected.** Bidders should submit one copy only of their bids sealed in an envelope, separate from the one containing the bid security. Only an authorized representative of the firm submitting a bid may sign the Bid Form.

#### **5. BID SECURITY**

The Notice to Bidders sets out details regarding Bid Security.

#### **6. WITHDRAWAL OF BIDS**

Bids may be withdrawn any time prior to the scheduled closing time for receipt of bids; however, bids may not be withdrawn for a period of 30 days after said closing time.

#### **7. EVALUATION OF BIDS**

The Drainage District reserves the right to reject any or all items of work or any or all alternate items, unresponsive bids, or waive informalities or technicalities in the bids. It is



the intent to make an award of this contract within 10 days after the scheduled closing time for receipt of bids or reject all bids.

8. TAXES

The contractor will be responsible for payment of all sales tax on material incorporated in the project. Upon the completion of the project, the contractor shall file a Contractor's Statement of Sales Tax form with the Drainage Clerk showing the amounts of materials purchased and the sales tax paid thereon.

9. PREFERENCE FOR LABOR AND MATERIALS

Not applicable.

10. EXECUTION OF CONTRACT

The successful bidder shall, within 10 calendar days after date of written notice of award, enter into written contract with the Drainage District on forms included in the specifications for the performance of the work. The contract, when executed, shall be deemed to include the entire agreement between parties, and the contractor shall not claim any modification resulting from representation or promises made by representatives of the Drainage District or other persons.

11. PAYMENT

The contractor will be paid as stated in the Notice to Bidders.

12. TIME OF CONSTRUCTION

Work on the proposed project shall be commenced and completed as stated in the Notice to Bidders.

13. GUARANTEE

The Notice to Bidders sets forth details regarding the performance, payment and maintenance bonds.

14. STATEMENT OF SPECIFICATIONS

The Iowa Department of Transportation Standard Specifications for Highway and Bridge Construction, Series 2023, as amended, shall apply to work on this project.

15. INSURANCE

A. The Contractor shall purchase and maintain such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations under the contract, whether such operations be by the Contractor or by any subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts by them may be liable:

1. Claims under Worker's Compensation, disability benefit, and other similar employee benefit acts;



2. Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employee.
3. Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employee.

B. The insurance to be maintained by Contractor shall be written as follows:

1. Workers' Compensation and Employers Liability Insurance, as prescribed by Iowa law, minimum limits shown below covering Employers Liability:

Bodily Injury by accident	\$500,000 each accident
Bodily Injury by disease	\$500,000 each employee
Bodily Injury by disease	\$500,000 policy limit

2. Commercial General Liability Insurance Combined Single Limits shown below covering Bodily Injury, Property Damage and Personal Injury:

General Aggregate Limit	\$2,000,000
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Products-Completed Operations Aggregate Limit	\$2,000,000
-----------------------------------------------------	-------------

Personal and Advertising Injury Limit	\$1,000,000
Each Occurrence Limit	\$1,000,000

Fire Damage Limit (for any one fire)	\$50,000
-----------------------------------------	----------

Medical Expense Limit (any one person)	\$5,000
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**The General Liability Limit shall apply per project and per location during the period of the contract.**

This insurance must include the following features:

- a. Coverage for all premises and operations. The policy shall be endorsed to provide the Aggregate per Project Endorsement.
- b. Personal and Advertising Injury.
- c. Operations by independent contractors.
- d. Contractual Liability coverage.
- e. Coverage for property damage underground or damaged by



explosion or collapse (XCU).

3. Automobile Liability insurance, covering all owned, non-owned, hired and leased vehicles with a minimum combined single limit for Bodily Injury and Property Damage of \$1,000,000 per accident. Insurance must include Contractual Liability.
4. Umbrella/Excess Insurance – The limits specified here-in may be satisfied with a combination of primary and Umbrella/Excess Insurance. Umbrella policy minimum shall be \$4,000,000.
5. Additional Insured – The Contractor will include the Onawa Drainage District and Engineer as additional insured on all policies except Workers' Compensation as respects all work performed for the jurisdiction.
6. Insurance Certificates – Each policy noted above shall be issued by an insurance company authorized to write such insurance in the State of Iowa and shall be reasonably acceptable to the Drainage District. These insurance policies shall not be cancelled for **any** reason without at least 30 days prior written notice to Drainage District.

**An Endorsement to the Certificate shall be provided which guarantees that the issuing insurer will mail the 30 day written notice to the Certificate holder. This endorsement shall supersede the Standard Cancellation Statement on the Certificate of Insurance.**

7. **ENDORSEMENTS:** The Public Liability Policy specified above shall be endorsed with the following specific language:

THE DRAINAGE DISTRICT is named as additional insured for all liability arising out of the operations by or on behalf of the named insured, and this policy protects the additional insured, its officers, agents and employees against liability for bodily injuries, deaths or property damage or destruction arising in any respect directly or indirectly in the performance of the contract.

The Public Liability Risk Policy specified above shall be endorsed with the following specific language:

- a. The inclusion of more than one insured shall not operate to impair the rights of one insured against another insured and the coverage afforded shall apply as though separate policies have been issued to each insured.
- b. The insurance provided herein is primary and no insurance held or owned by THE DRAINAGE DISTRICT shall be called upon to contribute to a loss.



- c. Coverage provided by this policy shall not be reduced or cancelled without thirty (30) days written notice given to THE DRAINAGE DISTRICT by certified mail.
- d. The certificate must state that the insurance is under an “occurrence” (not a “claims-made” or “modified occurrence”) basis.

8. **DOCUMENTATION:** The following documentation of insurance shall be submitted to THE DRAINAGE DISTRICT and approved prior to execution of this Contract:

Certificates of insurance showing the limits of insurance provided and signed copies of the specified endorsements for each policy.

At the time of making application for an extension of time, Contractor shall submit evidence that the insurance policies will be in effect during the requested period of time.

9. All liability policies which include THE DRAINAGE DISTRICT as an additional insured shall include a Governmental Immunities Endorsement (See the Standard Endorsements Figure 1070.5), pursuant to Chapter 670.4 of the Iowa Code, which endorsement shall include the following provisions:

a. Nonwaiver of Government Immunity.

The insurance carrier expressly agrees and states that the purchase of this policy and including THE DRAINAGE DISTRICT as an Additional Insured does not waive any of the defenses of governmental immunity available to THE DRAINAGE DISTRICT under the Iowa Code Section 670.4 as it now exists and as it may be amended from time to time.

b. Claims Coverage.

The insurance carrier further agrees that this policy of insurance shall cover only those claims not subject to the defenses of governmental immunity under Iowa Code Section 670.4 as it now exists and as it may be amended from time to time.

c. Assertions of Government Immunity.

THE DRAINAGE DISTRICT shall be responsible for asserting any defense of governmental immunity and may do so at any time and shall do so upon the timely written request of the insurance carrier.

d. Non-Denial of Coverage.

The insurance carrier shall not deny coverage or deny any of the rights and benefits accruing to THE DRAINAGE DISTRICT under this policy for reasons of governmental immunity unless and until a court of competent jurisdiction has ruled in favor of the defense(s) of governmental immunity asserted by THE DRAINAGE DISTRICT,



C. Subrogation:

To the extent that such insurance is in force and collectible and to the extent permitted by law, the Drainage District and Contractor each hereby releases and waives all right of recovery against the other or anyone claiming through or under each of them by way of subrogation or otherwise. The foregoing release and waiver shall apply to damage to contractor's equipment, tools, and other personal property as well as automobiles.

D. Indemnification:

To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Drainage District and Engineer, and their agents and employees from and against all claims, damages, losses and expenses, including but not limited to attorney's fees, arising out of or resulting from the performance of the project provided that any such claim, damage, loss or expense:

1. 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 there from; and
2. Is caused in whole or in part by any negligent act or omission of the Contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable regardless of whether or not it is caused in part by a party indemnified hereunder.

Such obligations shall not be construed to negate, abridge or otherwise reduce any other right or obligation or indemnity which would otherwise exist as to any party or person described in this paragraph.

In any and all claims against the Drainage District or any of their agents or employees by any employee of the Contractor, any subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them are liable, indemnification under this paragraph shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any subcontractor under worker, worker's or workman's compensation acts, disability benefit acts, or any other employee benefits acts.

E. Certificate Holder:

The certificate holder shall be Onawa Drainage District, Monona County, Iowa.

**The contractor's attention is drawn to the "SAMPLE" CERTIFICATE OF INSURANCE included in the project specifications manual.**

16. PRECONSTRUCTION CONFERENCE



A preconstruction conference shall be held at a place to be determined later prior to the Contractor beginning any work. Appropriate Contractor supervisory personnel shall be present at said conference.

17. LIQUIDATED DAMAGES

The Notice to Bidders sets forth the details regarding liquidated damages.

18. RELEASE OF LIABILITY

Acceptance by the Contractor of the final payment shall be a release to the Drainage District and every officer and agent thereof, from all claims and liability hereunder for anything done or furnished for, or relating to the work, or for any act or neglect of the Drainage District or of any person relating to or affecting the work.

19. CLAIMS FOR LABOR AND MATERIALS

The Contractor shall indemnify and hold harmless the Drainage District from all claims for labor and materials furnished under this contract.

20. PROSECUTION OF WORK

The Contractor shall notify the Engineer at least twenty-four hours in advance of the time he intends to start. The Contractor shall operate at such points as the Engineer may direct. The Contractor shall conduct the work with sufficient materials, equipment and labor to ensure completion within the time specified. Should work be discontinued for any reason by the Contractor with consent of the Engineer, the Contractor shall notify the Engineer twenty-four hours in advance of resuming operations.

21. SUBMITTAL REQUIREMENTS

Submittals, including shop drawings or material certifications, will not be required for the project.

22. QUESTIONS OF INTERPRETATION DURING BIDDING PHASE

- A. If questions arise during the bidding process regarding the meaning of any portion of the contract documents, the prospective bidder shall submit the questions to the Engineer for clarification.
- B. Any definitive interpretation or clarification of the contract documents will be published by addenda, properly issued to each person holding documents, prior to the bid date.
- C. Verbal interpretation or explanation not issued in the form of an addendum shall not be considered part of the bidding documents.
- D. When submitting questions for clarification, adequate time for issuance and delivery of addenda must be allowed.
- E. The Engineer shall be the sole judge regarding interpretations of conflicts within contract documents.

23. CONTRACT DOCUMENT DISCREPANCIES



- A. If any ambiguities should appear in the contract documents, request clarification from the Engineer before proceeding with the work.
- B. If the Contractor fails to make such request, no excuse will thereafter be entertained for failure to carry out the work in a manner satisfactory to the Engineer.
- C. The Engineer shall be the sole judge regarding interpretations of conflicts within contract documents.



**BID FORM**

**11<sup>TH</sup> STREET DRAINAGE IMPROVEMENTS  
ONAWA DRAINAGE DISTRICT  
MONONA COUNTY, IOWA**

TO: BOARD OF TRUSTEES  
ONAWA DRAINAGE DISTRICT

DATE: \_\_\_\_\_

The undersigned bidder, having examined the plans, specifications, Notice to Bidders, the location and sites of the proposed work, the nature of the work to be done, extent and condition of existing structures affecting, or affected by the proposed work, and being fully advised as to the extent, character of the work and all existing local conditions relative to construction difficulties, hazards, labor, transportation, hauling, trucking, and other factors affected by or affecting the work covered by this proposal as outlined in the plans and specifications, and having received the following Addenda to the Plans and Specifications:

Addendum No.

Date Received

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

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

HEREBY PROPOSES to furnish all materials, tools, appliances, plant and equipment; and to perform all necessary labor required for the complete construction of the 11<sup>th</sup> Street Drainage Improvements project and all other items incidental thereto and to perform all work in accordance with all items of expense and profit to-wit.

**BID SCHEDULE**

**11<sup>TH</sup> STREET DRAINAGE IMPROVEMENTS**

ITEM	DESCRIPTION	UNIT	EST QTY	UNIT PRICE	AMOUNT
<b>DIVISION 1 – CITY OF ONAWA</b>					
1	EXCAVATION, CLASS 10, ROADWAY AND BORROW	CY	27		
2	SPECIAL BACKFILL	CY	14.8		
3	SUBGRADE STABILIZATION MATERIAL, POLYMER GRID	SY	58.8		
4	STANDARD OR SLIP FORM PORTLAND CEMENT CONCRETE PAVEMENT, CLASS C, CLASS 3 DURABILITY, 8 IN.	SY	57.7		
5	FLOODED BACKFILL	CY	12.9		
6	INTAKE, SW-507	EA	2		
7	INTAKE, SW-508 MODIFIED	EA	1		
8	REMOVAL OF PAVEMENT	SY	6.4		
9	REMOVAL OF INTAKES AND UTILITY ACCESSES	EA	1		
10	TRAFFIC CONTROL	LS	0.5		



11	MOBILIZATION	LS	0.5		
12	MULCH	ACRE	0.1		
13	SEEDING AND FERTILIZING (URBAN)	ACRE	0.1		
<b>TOTAL DIVISION 1 BID AMOUNT</b>					<b>\$</b>
<b>ITEM</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>EST QTY</b>	<b>UNIT PRICE</b>	<b>AMOUNT</b>
<b>DIVISION 2 – ONAWA DRAINAGE DISTRICT</b>					
1	STORM SEWER GRAVITY MAIN, TRENCHED, POLYVINYL CHLORIDE PIPE (PVC), 10 IN.	LF	25.0		
2	STORM SEWER GRAVITY MAIN, TRENCHLESS, POLYVINYL CHLORIDE PIPE (PVC), 10 IN.	LF	341.0		
3	TRAFFIC CONTROL	LS	0.5		
4	MOBILIZATION	LS	0.5		
<b>TOTAL DIVISION 2 BID AMOUNT</b>					<b>\$</b>

NOTICE TO CONTRACTOR: The total bid is based on estimated quantities and the actual amount will be adjusted in accordance with the final determination of the quantities involved. In case of error in the item totals as quoted, the proper figure based on the estimated quantities and the unit prices as quoted shall govern. If a unit price is left blank, the unit price for the item shall be zero dollars.

The Drainage District must approve any subcontractor which prime Contractor contracts with to do any portion of said contract.

Accompanying this bid shall be the Bid Bond in the amount specified in the Notice to Bidders, the same being subject to forfeiture in event of default by the undersigned.

In submitting this bid, it is understood that the right is reserved by the Drainage District to reject any or all bids, and it is agreed that this bid may not be withdrawn after the closing of bids and shall remain valid for a period of 30 days.

The undersigned bidder agrees to furnish the required bond and deliver the signed Agreement to the Drainage District within ten (10) days after notification that he is the apparent successful bidder.

CONTRACT TIME: If awarded the contract, the undersigned bidder agrees to commence the work and to complete the work as specified in the Notice to Bidders.

The bidder hereby certifies:

That this bid is genuine and is not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules or any group, association, organization or corporation.



1. That he has not directly induced or solicited any other bidder to put in a false or sham bid.
2. That he has not solicited or induced any person, firm or corporation to refrain from bidding.
3. That he has not sought collusion or otherwise to obtain for himself any advantage over any other bidder.

SIGNATURE: \_\_\_\_\_

DATE: \_\_\_\_\_

NAME (typed or printed): \_\_\_\_\_

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

FIRM NAME: \_\_\_\_\_

EMAIL: \_\_\_\_\_

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

\_\_\_\_\_

#### LIST OF SUBCONTRACTORS

The above figures include quotations from the following subcontractors whom we intend to employ on this project, subject to approval from the Engineer:

#### SUBCONTRACTOR

#### WORK TO BE PERFORMED

- |          |       |
|----------|-------|
| 1. _____ | _____ |
| 2. _____ | _____ |
| 3. _____ | _____ |







## **BID BOND**

KNOW ALL BY THESE PRESENTS:

That we, \_\_\_\_\_, as Principal and \_\_\_\_\_, as Surety, are held and firmly bound unto Onawa Drainage District of Monona County, as Owner, in the penal sum of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_), or five percent (5%) of the amount bid in lawful money of the United States, for which payment said Principal and Surety bind themselves, their heirs, executors, administrators, successors, and assigns jointly and severally, firmly by these presents.

The condition of the above obligation is such that whereas the Principal has submitted to the Onawa Drainage District a certain proposal, in a separate envelope, and hereby made a part hereof, to enter into a contract in writing, for the following described improvements:

### **11<sup>th</sup> STREET DRAINAGE IMPROVEMENTS**

Work will include Class 10 excavation roadway and borrow, subgrade stabilization material, PCC pavement, flooded backfill, intakes, storm sewer, pavement removal, traffic control, mulching, seeding and fertilizing, and other related construction work including cleanup.

Work shall be completed by August 30, 2024.

The Surety hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by any extension of the time within which the Owner may accept such bid or execute such Contract; and said Surety does hereby waive notice of any such extension.

In the event that any actions or proceedings are initiated with respect to this Bond, the parties agree that the venue thereof shall be Monona County, State of Iowa. If legal action is required by the Owner against the Surety or Principal to enforce the provisions of the bond or to collect the monetary obligation incurring to the benefit of the Owner, the Surety or Principal agrees to pay the Owner all damages, costs, and attorney fees incurred by enforcing any of the provisions of this Bond. All rights, powers, and remedies of the Owner hereunder shall be cumulative and not alternative and shall be in addition to all rights, powers and remedies given to the Owner, by law. The Owner may proceed against Surety for any amount guaranteed hereunder whether action is brought against Principal or whether Principal is joined in any such action or actions or not.

NOW, THEREFORE, if said proposal by the Principal be accepted, and the Principal shall enter into a contract with Owner in accordance with the terms of such proposal, including the provision of insurance and of a bond as may be specified in the contract documents, with good and sufficient surety for the faithful performance of such contract, for the prompt payment of labor and material furnished in the prosecution thereof, and for the maintenance of said improvements as



may be required therein, then this obligation shall become null and void; otherwise, the Principal shall pay to the Owner the full amount of the bid bond, together with court costs, attorney's fees, and any other expense of recovery.

Signed and sealed this \_\_\_\_\_ day of \_\_\_\_\_, 2024.

SURETY:

PRINCIPAL:

\_\_\_\_\_  
Surety Company

\_\_\_\_\_  
Bidder

By \_\_\_\_\_  
Signature Attorney-in-Fact/Officer

By \_\_\_\_\_  
Signature

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

\_\_\_\_\_  
Name (Print/Type)

\_\_\_\_\_  
Company Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Company Address

\_\_\_\_\_  
Street Address

\_\_\_\_\_  
City, State, Zip Code

\_\_\_\_\_  
City, State, Zip Code

\_\_\_\_\_  
Company Telephone Number

\_\_\_\_\_  
Telephone Number

**NOTE: All signatures on this Bid Bond must be original signatures in ink; copies, facsimile, or electronic signatures will not be accepted. This bond must be sealed with the Surety's raised, embossing seal. The Certificate or Power of Attorney accompanying this bond must be valid on its face and sealed with the Surety's raised, embossing seal.**



## CONTRACT

THIS CONTRACT, made and entered into this \_\_\_\_\_ day of \_\_\_\_\_, 2024, by and between the Onawa Drainage District, Monona County, Iowa, hereinafter called the "Owner", and

\_\_\_\_\_,  
hereinafter called the "Contractor".

That the Contractor, for and in consideration of \_\_\_\_\_ Dollars (\$\_\_\_\_\_) payable as set forth in the Notice to Bidders and specifications constituting a part of this contract, hereby agrees to construct, in accordance with the plans and specifications, entitled 11<sup>TH</sup> STREET DRAINAGE IMPROVEMENTS, ONAWA DRAINAGE DISTRICT, MONONA COUNTY, and in the amounts and locations designated on the plans, the said improvements and such other work as may be incidental thereto according to the Contract Attachment which is attached hereto.

WITNESSETH:

That the Contract Attachment: Bid Items, Quantities is based on estimated quantities and that final payment shall be made for the actual quantities of work completed which are covered by this contract.

That the specifications and plans as set forth in the Notice to Bidders are hereby made a part of and the basis of this agreement and a true copy of said plans and specifications is now on file in the office of the Engineer in Sergeant Bluff, Iowa.

That in consideration of the foregoing, the Owner hereby agrees to pay the Contractor promptly and according to the provisions set out in the Notice to Bidders, the amount set forth in the bid, subject to the conditions as set forth in the specifications.

But it is mutually understood and agreed by the parties hereto, that the Notice to Bidders, Instruction to Bidders, Bid Form, the specifications for said improvements, the Contractor's Performance and Payment Bond and the general detailed plans, are a part of and constitute the basis of contract between the parties thereto.

This contract is awarded and executed for completion of the work specified in the contract documents for the bid prices shown on the Contract Attachment: Bid Items, Quantities and Prices, which were proposed by the Contractor in its bid submitted in accordance with the Notice to Bidders and Notice of Public Hearing for the following described improvements:

### **11<sup>TH</sup> STREET DRAINAGE IMPROVEMENTS**

Work includes Class 10 excavation roadway and borrow, subgrade stabilization material, PCC pavement, flooded backfill, intakes, storm sewer, pavement removal, traffic control, mulching, seeding and fertilizing, and other related construction work including cleanup.



Work shall be completed by August 30, 2024.

IN WITNESS WHEREOF, the Parties hereto have executed this instrument, in triplicate on the date first shown written.

OWNER:

CONTRACTOR:

By \_\_\_\_\_

\_\_\_\_\_

Contractor

(Seal)

By \_\_\_\_\_

ATTEST:

Signature

\_\_\_\_\_

Title

Street Address

City, State, Zip Code

Telephone Number

Email Address

CONTRACTOR PUBLIC REGISTRATION INFORMATION To Be Provided By:

1. All Contractors: The Contractor shall enter its Public Registration No. \_\_\_\_ - \_\_\_\_ Issued by the Iowa Commissioner of Labor pursuant to Section 91C.5 of the Iowa Code.

2. Out-of-State Contractors:

A. Pursuant to Section 91C.7 of the Iowa Code, an out-of-state contractor, before commencing a contract in excess of five thousand dollars in value in Iowa, shall file a bond with the division of labor services of the department of workforce development. It is the contractor's responsibility to comply with said Section 91C.7 before commencing this work.

B. Prior to entering into contract, the designated low bidder, if it is a corporation organized under the laws of a state other than Iowa, shall file with the Engineer a certificate from the Secretary of the State of Iowa showing that it has complied with all the provisions of Chapter 490 of the Iowa Code, or as amended, governing foreign corporations.

**NOTE: All signatures on this contract must be original signatures in ink; copies, facsimile, or electronic signatures will not be accepted.**



## CORPORATE ACKNOWLEDGMENT

State of \_\_\_\_\_)  
\_\_\_\_\_) SS  
\_\_\_\_\_County)

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me, the undersigned, a Notary Public in and for the State of \_\_\_\_\_, personally appeared \_\_\_\_\_ and \_\_\_\_\_ to me known, who being by me duly sworn, did say that they are the \_\_\_\_\_, and \_\_\_\_\_, respectively, of the corporation executing the foregoing instrument; that (no seal has been procured by) (the seal affixed hereto is the seal of) the corporation; that said instrument was signed (and sealed) on behalf of the corporation by authority of this Board of Directors; that \_\_\_\_\_ and \_\_\_\_\_ acknowledged the execution of the instrument to be the voluntary act and deed of the corporation, by it and by them voluntarily executed.

\_\_\_\_\_  
Notary Public in and for the State of \_\_\_\_\_  
My Commission Expires \_\_\_\_\_

## PARTNERSHIP ACKNOWLEDGMENT

State of \_\_\_\_\_)  
\_\_\_\_\_) SS  
\_\_\_\_\_County)

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me, the undersigned, a Notary Public in and for the State of \_\_\_\_\_, personally appeared \_\_\_\_\_, and \_\_\_\_\_, to me personally known, who being by me duly sworn, did say that the person is one of the partners of \_\_\_\_\_, a partnership, and that the instrument was signed on behalf of the partnership by authority of the partners and the partner acknowledged the execution of the instrument to be the voluntary act and deed of the partnership by it and by the partner voluntarily executed.

\_\_\_\_\_  
Notary Public in and for the State of \_\_\_\_\_  
My Commission Expires \_\_\_\_\_



## INDIVIDUAL ACKNOWLEDGMENT

State of \_\_\_\_\_)  
\_\_\_\_\_) SS  
\_\_\_\_\_County)

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me, the undersigned, a Notary Public in and for the State of \_\_\_\_\_, personally appeared \_\_\_\_\_, and \_\_\_\_\_, to me personally known to be the identical person(s) named in and who executed the foregoing instrument, and acknowledged that (he) (she) (they) executed the instrument as (his) (her) (their) voluntary act and deed.

\_\_\_\_\_  
Notary Public in and for the State of \_\_\_\_\_  
My Commission Expires \_\_\_\_\_

## LIMITED LIABILITY COMPANY ACKNOWLEDGMENT

State of \_\_\_\_\_)  
\_\_\_\_\_) SS  
\_\_\_\_\_County)

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me a Notary Public in and for said county, personally appeared \_\_\_\_\_, to be personally known, who being by me duly sworn did say that person is \_\_\_\_\_ of said \_\_\_\_\_, that (the seal affixed to said instrument is the seal of said OR no seal has been procured by the said) \_\_\_\_\_, and that said instrument was signed and sealed on behalf of the said \_\_\_\_\_, by authority of its managers and the said \_\_\_\_\_ acknowledged the execution of said instrument to be the voluntary act and deed of said \_\_\_\_\_, by it voluntarily executed.

\_\_\_\_\_  
Notary Public in and for the State of \_\_\_\_\_  
My Commission Expires \_\_\_\_\_



**CONTRACT ATTACHMENT: BID ITEMS, QUANTITIES**

This contract is awarded and executed for completion of the work specified in the contract documents for the bid prices tabulated below as proposed by the Contractor in its proposal submitted in accordance with Notice to Bidders and Instructions to Bidders. All quantities are subject to revision by the Owner. Quantity changes which amount to twenty (20) percent or less of the amount bid shall not affect the unit bid price.

<b>11<sup>TH</sup> STREET DRAINAGE IMPROVEMENTS</b>					
<b>Item</b>	<b>Description</b>	<b>Unit</b>	<b>Estimated Quantity</b>	<b>Unit Price</b>	<b>Amount</b>
<b>DIVISION 1 – CITY OF ONAWA</b>					
1	EXCAVATION, CLASS 10, ROADWAY AND BORROW	CY	27		
2	SPECIAL BACKFILL	CY	14.8		
3	SUBGRADE STABILIZATION MATERIAL, POLYMER GRID	SY	58.8		
4	STANDARD OR SLIP FORM PORTLAND CEMENT CONCRETE PAVEMENT, CLASS C, CLASS 3 DURABILITY, 8 IN.	SY	57.7		
5	FLOODED BACKFILL	CY	12.9		
6	INTAKE, SW-507	EA	2		
7	INTAKE, SW-508 MODIFIED	EA	1		
8	REMOVAL OF PAVEMENT	SY	6.4		
9	REMOVAL OF INTAKES AND UTILITY ACCESSES	EA	1		
10	TRAFFIC CONTROL	LS	0.5		
11	MOBILIZATION	LS	0.5		
12	MULCH	ACRE	0.1		
13	SEEDING AND FERTILIZING (URBAN)	ACRE	0.1		
<b>TOTAL DIVISION 1 AMOUNT</b>					<b>\$</b>
<b>Item</b>	<b>Description</b>	<b>Unit</b>	<b>Estimated Quantity</b>	<b>Unit Price</b>	<b>Amount</b>
<b>DIVISION 2 – ONAWA DRAINAGE DISTRICT</b>					
1	STORM SEWER GRAVITY MAIN, TRENCHED, POLYVINYL CHLORIDE PIPE (PVC), 10 IN.	LF	25.0		
2	STORM SEWER GRAVITY MAIN, TRENCHLESS, POLYVINYL CHLORIDE PIPE (PVC), 10 IN.	LF	341.0		
3	TRAFFIC CONTROL	LS	0.5		
4	MOBLIZATION	LS	0.5		
<b>TOTAL DIVISION 2 AMOUNT</b>					<b>\$</b>







SURETY BOND NO. \_\_\_\_\_

**PERFORMANCE AND PAYMENT BOND**

KNOW ALL BY THESE PRESENTS:

That we, \_\_\_\_\_,  
as Principal (hereinafter the "Contractor" or "Principal") and

\_\_\_\_\_,  
as Surety are held and firmly bound unto Onawa Drainage District of Monona County, as Obligee (hereinafter referred to as "the District"), and to all persons who may be injured by any breach of any of the conditions of this Bond in the penal sum of \_\_\_\_\_

\_\_\_\_\_, Dollars (\$ \_\_\_\_\_),  
lawful money of the United States, for the payment of which sum, well and truly to be made, we bind ourselves, our heirs, legal representatives and assigns, jointly or severally, firmly by these presents.

The conditions of the above obligations are such that whereas said Contractor entered into a contract with the District, bearing date the \_\_\_\_\_ day of \_\_\_\_\_, 2024, (hereinafter the "Contract") wherein said Contractor undertakes and agrees to construct the following described improvements:

**11<sup>TH</sup> STREET DRAINAGE IMPROVEMENTS**

Work includes Class 10 excavation roadway and borrow, subgrade stabilization material, PCC pavement, flooded backfill, intakes, storm sewer, pavement removal, traffic control, mulching, seeding and fertilizing, and other related construction work including cleanup.

Work shall be completed by August 30, 2024.

and to faithfully perform all the terms and requirements of said Contract within the time therein specified, in a good and workmanlike manner, and in accordance with the Contract Documents.

WHEREAS, the Contractor is required to promptly pay all claims for labor and materials furnished in the performance of the contract and also to save harmless the District from damage claims to person and property arising through the performance of the work; and

NOW THEREFORE, the conditions of this obligation are such that if the said Contractor shall perform all the work contemplated by the Contract in a workmanlike manner and in strict compliance with the plans and specifications, and will pay all claims for labor and materials used in connection with said improvement, and indemnify the District for all damages, costs and expenses incurred by the reason of damages to persons or property arising through the performance of said contract, and will reimburse the District for any outlay of money which it may be required to make in order to complete said improvement for the period specified in the contract where this bond is obligated for maintenance, and will faithfully comply with all the provisions of Section 468 of the Code of Iowa, and as later amended, then this obligation shall be null and void, otherwise it shall remain in full force and effect.



All conditions of this bond must be fully complied with before the principal or his surety will be released.

The contract, contractor's proposal, and plans and specifications shall be considered as part of this bond just as fully as if their terms were repeated herein.

Witness our hands, in triplicate, this \_\_\_\_\_ day of \_\_\_\_\_, 2024.

PRINCIPAL:

SURETY:

\_\_\_\_\_  
Contractor

\_\_\_\_\_  
Surety Company

By \_\_\_\_\_  
Signature

By \_\_\_\_\_  
Signature Attorney-in-Fact Officer

\_\_\_\_\_  
Title

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

\_\_\_\_\_  
Company Name

\_\_\_\_\_  
Company Address

\_\_\_\_\_  
City, State, Zip Code

\_\_\_\_\_  
Telephone Number

**NOTE:** All signatures on this Performance and Payment Bond must be original signatures in ink; copies, facsimile or electronic signatures will not be accepted. This bond must be sealed with the Surety's raised, embossing seal. The Certificate or Power of Attorney accompanying this bond must be valid on its face and sealed with the Surety's raised, embossing seal. The name and signature of the Surety's Attorney-in-Fact/Officer entered on this bond must be exactly as listed on the Certificate or Power of Attorney accompanying this bond.





# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)  
mm/dd/yyyy

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

**IMPORTANT:** If the certificate holder is an **ADDITIONAL INSURED**, the policy(ies) must be endorsed. If **SUBROGATION IS WAIVED**, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

<b>PRODUCER</b> Insurance Company  Insurance Company's Address  City, State Zip Code	<b>CONTACT NAME:</b> <b>PHONE</b> (A/C, No. Ext): <b>E-MAIL ADDRESS:</b> <b>PRODUCER CUSTOMER ID #:</b>  <b>INSURER(S) AFFORDING COVERAGE</b>  <b>INSURER A:</b> INSURANCE COMPANY NAME <b>INSURER B:</b> <b>INSURER C:</b> <b>INSURER D:</b> <b>INSURER E:</b> <b>INSURER F:</b>
<b>INSURED</b> Contractor's Name  Contractor's Address City, State Zip Code	<b>NAIC #</b> XXXX XXXX

**COVERAGES****CERTIFICATE NUMBER:****REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
<b>A</b>	<b>GENERAL LIABILITY</b> <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR  GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input checked="" type="checkbox"/> LOC	X	X	Policy Number	MM/DD/YY	MM/DD/YY	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 1,000,000 MED EXP (Any one person) \$ 5,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000 \$
<b>B</b>	<b>AUTOMOBILE LIABILITY</b> <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS	X	X	Policy Number	MM/DD/YY	MM/DD/YY	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$ \$
<b>C</b>	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> DEDUCTIBLE <input checked="" type="checkbox"/> RETENTION \$ 10,000	X	X	Policy Number	MM/DD/YY	MM/DD/YY	EACH OCCURRENCE \$ 4,000,000 AGGREGATE \$ 4,000,000 \$ \$
<b>B</b>	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N N	N/A X	Policy Number	MM/DD/YY	MM/DD/YY	<input checked="" type="checkbox"/> WC STATUTORY LIMITS E.L. EACH ACCIDENT \$ 500,000 E.L. DISEASE - EA EMPLOYEE \$ 500,000 E.L. DISEASE - POLICY LIMIT \$ 500,000
<b>D</b>							

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

Additional Insured (CGL, Auto, Umb): Onawa Drainage District and Veenstra & Kimm, Inc. Engineer, as required by written contract with the insured, per policy terms and conditions.

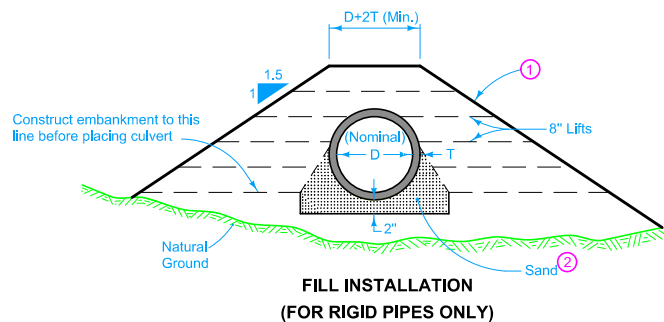
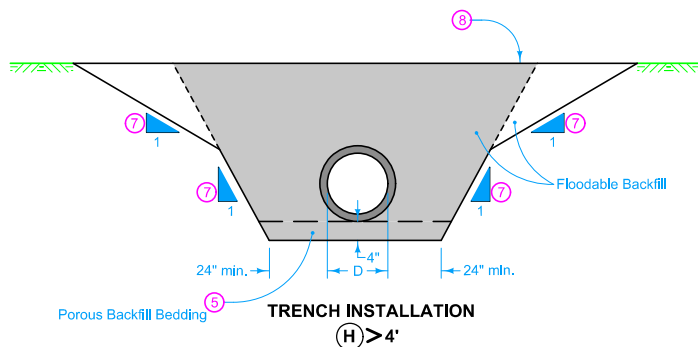
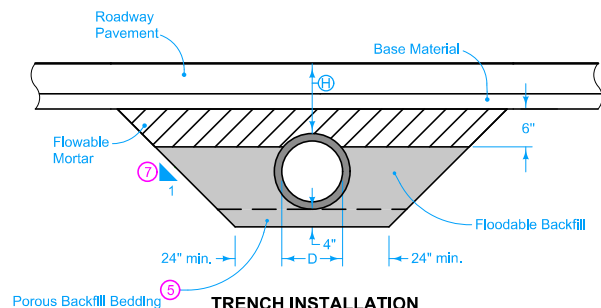
**CERTIFICATE HOLDER****CANCELLATION**

Onawa Drainage District  610 Iowa Avenue  Onawa, Iowa 51040  USA	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.  AUTHORIZED REPRESENTATIVE
------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

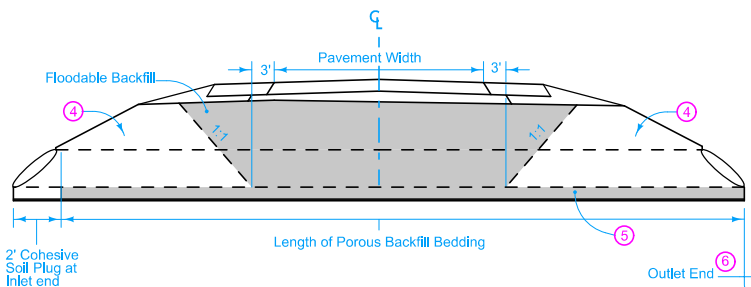
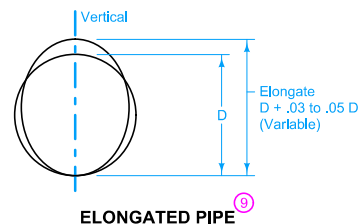
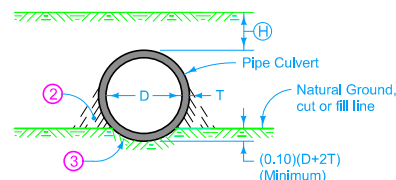








**CLASS 'B' BEDDING & BACKFILL**



Refer to **DR-104** for minimum and maximum allowable cover (H) for the particular kind of pipe culvert.

- ① The backfill adjacent to and above the pipe culvert may be placed in conjunction with normal embankment construction. Thoroughly tamp the embankment within the limits shown.
- ② Take extra care to ensure complete and satisfactory tamping of backfill material in the area immediately adjacent to the lower portion of pipe.
- ③ Carefully shape excavation below groundline either using a template conforming to actual dimension and shape of the pipe or using other means. If using other means, check with a template conforming to the actual dimension and shape of the pipe.
- ④ For culverts backfilled by flooding, place a cohesive soil plug at the inlet, outlet, and, when necessary, sides, prior to flooding.
- ⑤ 4-inch Porous Backfill bedding, 2-inch Floodable Backfill bedding may be used under unsealed rigid pipe.
- ⑥ Extend Porous Backfill through the outlet end soil plug when used for bedding.
- ⑦ Quantity calculations are based upon a 1:1 slope and minimum trench dimension. Actual slope of trench may vary based upon Contractor's operations.
- ⑧ Ground Line at time of pipe installation. When existing ground exceeds 5 feet depth over pipe, backfill and compaction by flooding is not required more than 5 feet above the pipe.
- ⑨ Where a corrugated metal pipe culvert requiring elongation is to be installed (to counteract deformation caused by backfill), complete elongation using a means approved by the Engineer. Elongation may be developed either as part of shop fabrication or field installation. Install with elongated axis vertical.

Possible Contract Items:

Flowable Mortar  
Flooded Backfill  
Excavation, Class 20

Possible Tabulations:

104-3  
104-4

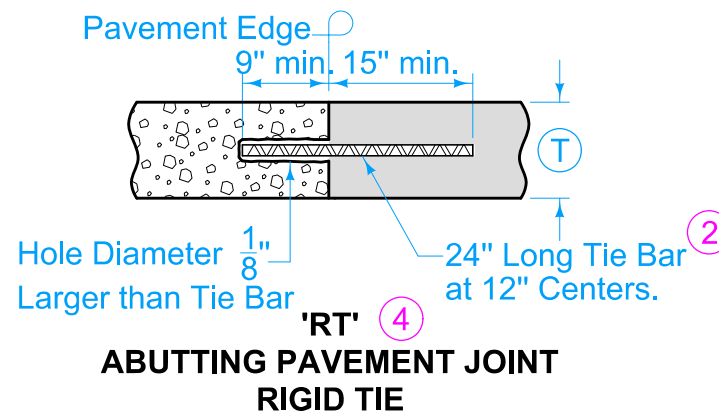
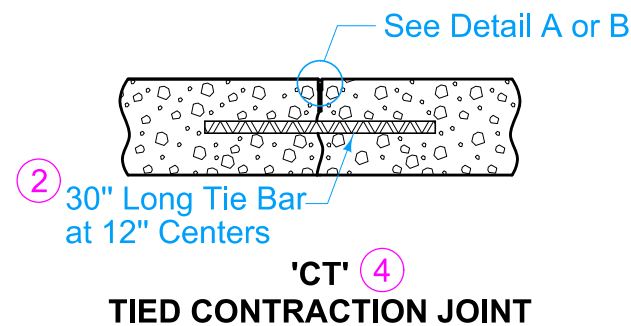
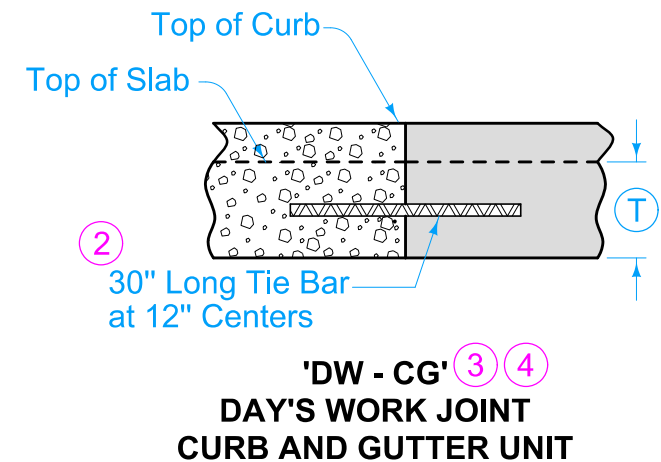
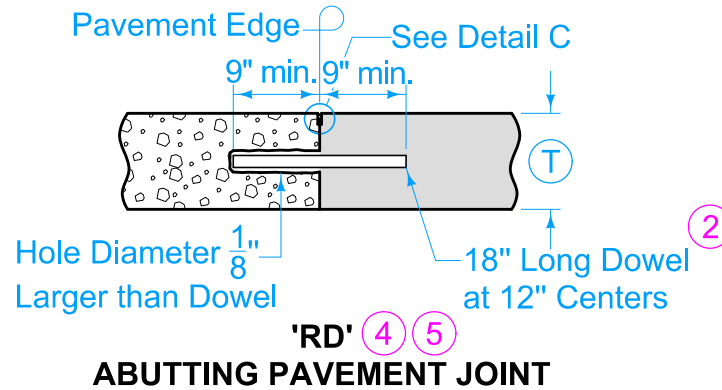
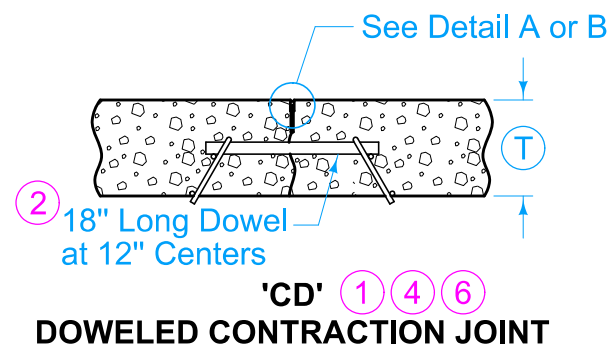
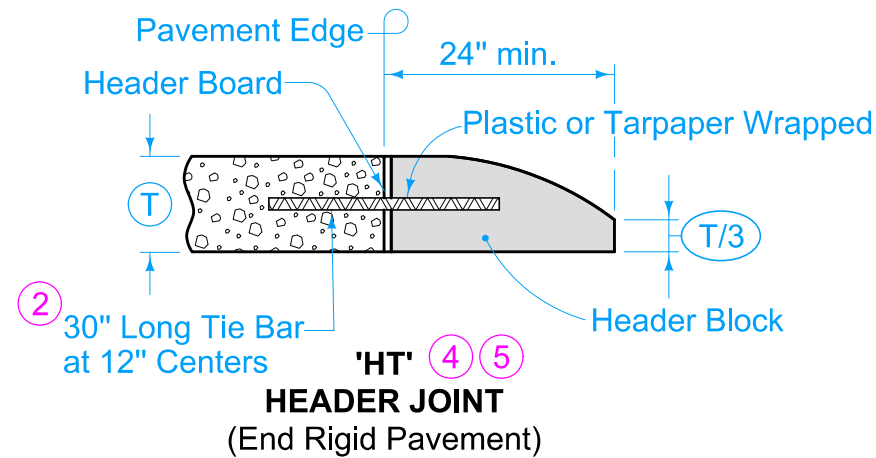
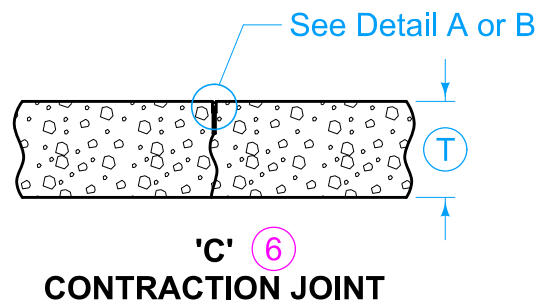
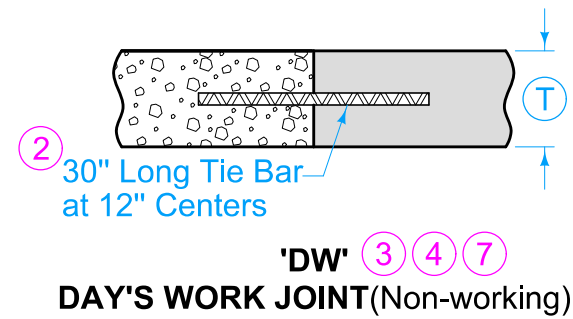
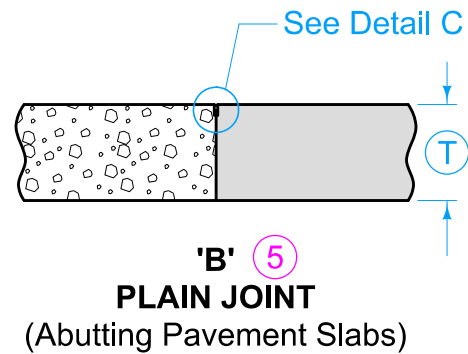
<b>IOWA DOT</b> <b>STANDARD ROAD PLAN</b> <small>REVISIONS: Changed "Porous Backfill" to "Porous Backfill Bedding" for clarity. Modified trench installation detail for H&gt;4' to clarify pay limits.</small>	<small>REVISION</small> 2 04-18-17
	<b>DR-101</b>
	<small>SHEET 1 of 1</small>

*Brian Smith*  
APPROVED BY DESIGN METHODS ENGINEER

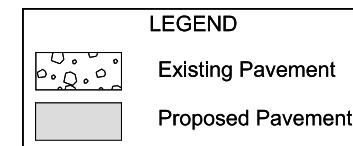
**PIPE CULVERT  
(BEDDING AND BACKFILL)**

Denotes pay limits for flooded backfill





- 1 See dowel assemblies for fabrication details.
- 2 See Bar Size Table for Contraction Joints on Sheet 2.
- 3 Locate 'DW' joint at a mid-panel location between future 'C' or 'CD' joints. Place no closer than 5 feet to a 'C' or 'CD' joint.
- 4 Place bars within the limits shown under dowel assemblies.
- 5 Edge with 1/8 inch tool for length of joint. For HT joint, remove header block and board when second slab is placed.
- 6 Unless specified otherwise, use 'CD' transverse contraction joints in mainline pavement when  $T$  is greater or equal to 8 inches. Use 'C' joints when  $T$  is less than 8 inches.
- 7 'RT' joint may be used in lieu of 'DW' joint at the end of the days work. Remove any pavement damaged due to the drilling at no additional cost to the Contracting Authority.

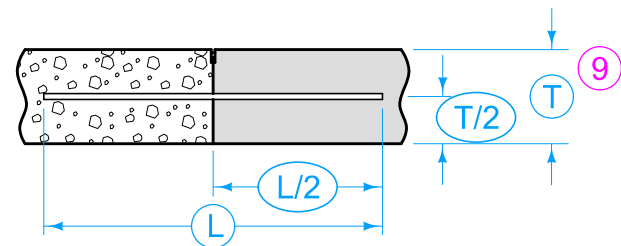


SUDAS	IOWA DOT	REVISION	
		11	04-19-22
FIGURE 7010.101	STANDARD ROAD PLAN	PV-101	
REVISIONS: Modified circle note 32.		SHEET 1 of 8	
Paul D. Wrigand SUDAS DIRECTOR		Shawn Miller DESIGN METHODS ENGINEER	

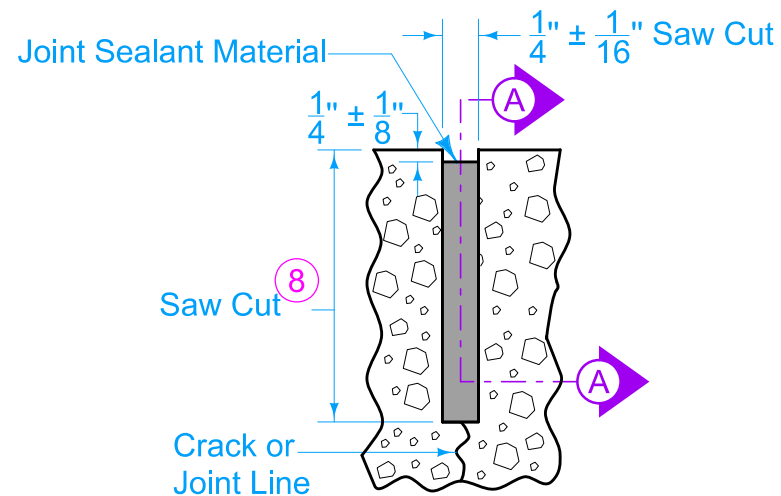
JOINTS

TRANSVERSE CONTRACTION





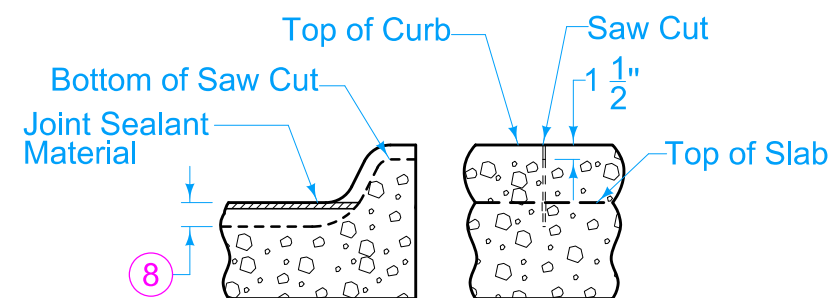
**BAR PLACEMENT**  
(Applies to all joints unless otherwise detailed.)



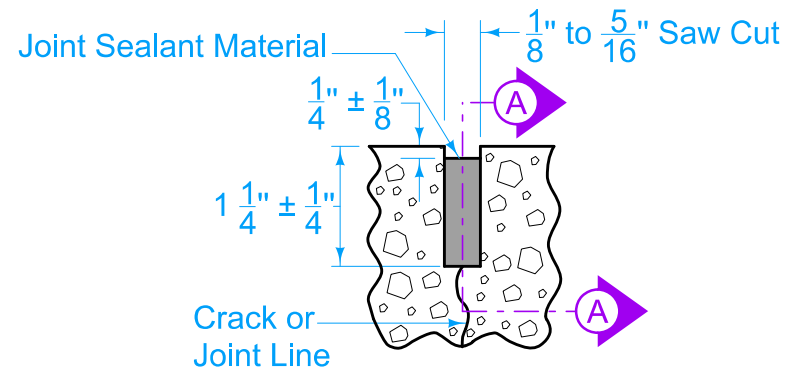
**DETAIL A**  
(Saw cut formed by conventional concrete sawing equipment.)

- ⑧ Saw 'CD' joint to a depth of  $T/3 \pm 1/4"$ ; saw 'C' joint to a depth of  $T/4 \pm 1/4"$ .
- ⑨ When tying into old pavement,  $\textcircled{T}$  represents the depth of sound PCC.

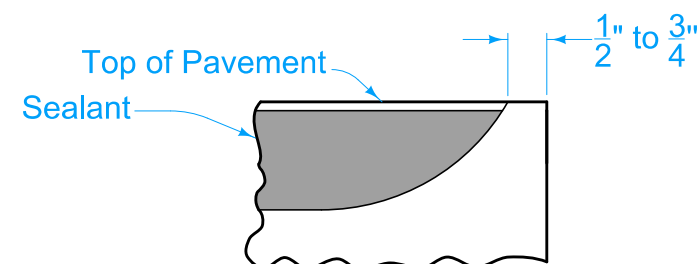
BAR SIZE TABLE FOR CONTRACTION JOINTS			
$\textcircled{T}$	Solid Dowel Diameter	Tubular Dowel Diameter	Tie Bar Size
< 8"	$\frac{3}{4}"$	$\frac{7}{8}"$	#6
$\geq 8"$ but < 10"	$1 \frac{1}{4}"$	$1 \frac{3}{8}"$	#10
$\geq 10"$	$1 \frac{1}{2}"$	$1 \frac{5}{8}"$	#11
Tubular Dowel Bars will not be allowed for RD joints.			



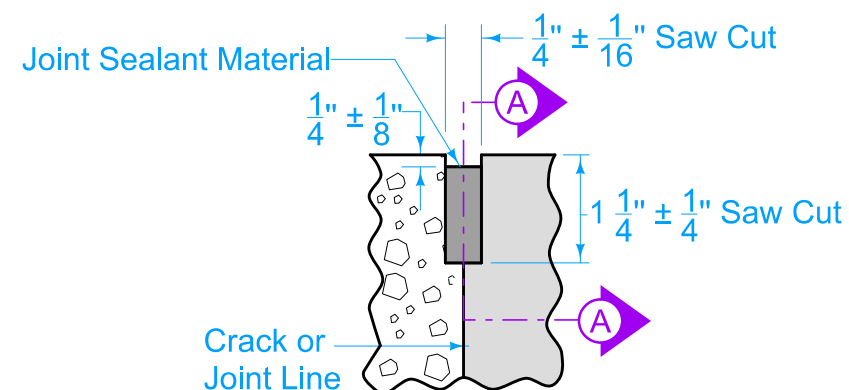
**'C' JOINT IN CURB**  
(Match 'CT', 'CD', or 'C' joint in pavement.)



**DETAIL B**  
(Saw cut formed by approved early concrete sawing equipment.)



**SECTION A-A**  
(Detail at Edge of Pavement)



**DETAIL C**

**TRANSVERSE CONTRACTION**

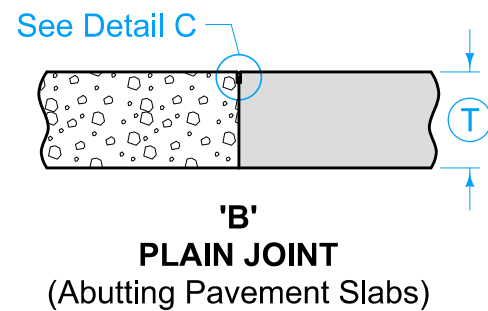
LEGEND	
	Existing Pavement
	Proposed Pavement

 SUDAS		REVISION	
		11	04-19-22
		<b>PV-101</b>	
FIGURE 7010.101	STANDARD ROAD PLAN	SHEET 2 of 8	

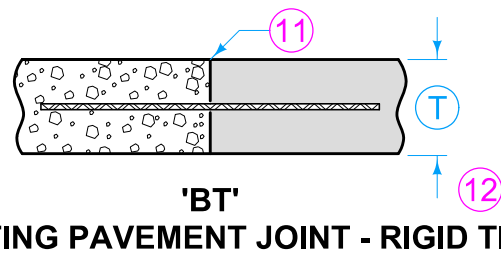
REVISIONS: Modified circle note 32.	
SUDAS	IOWA DOT
<i>Paul D. Wiegand</i> SUDAS DIRECTOR	<i>Shawn Miller</i> DESIGN METHODS ENGINEER

**JOINTS**

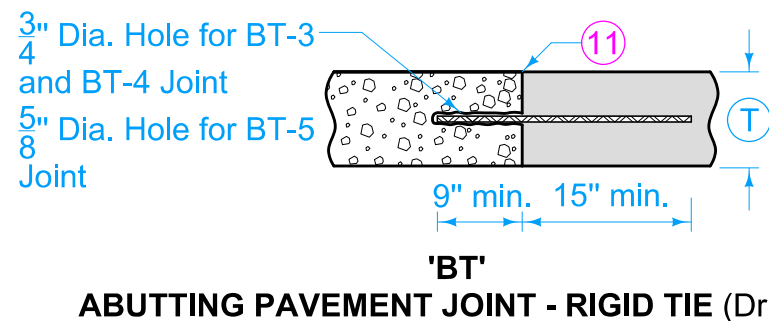




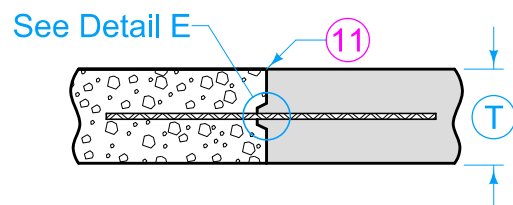
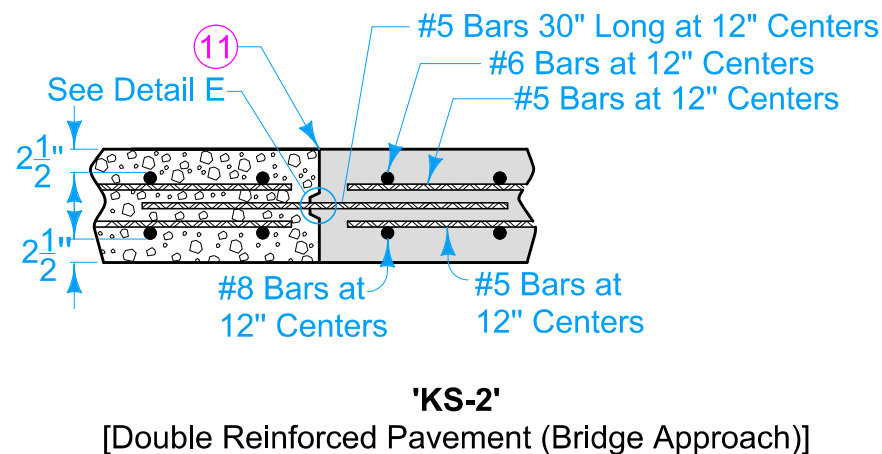
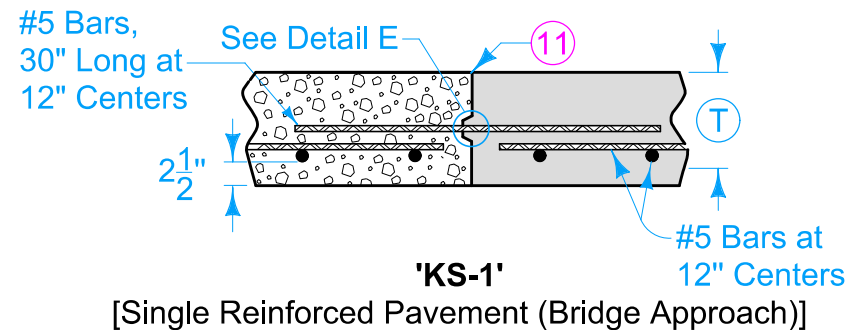
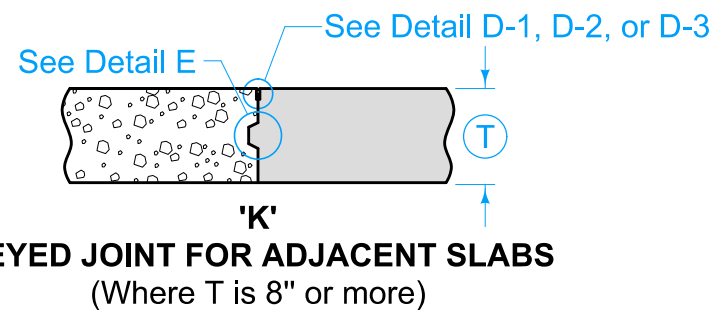
**'B'**  
**PLAIN JOINT**  
(Butting Pavement Slabs)



(T)	Joint	Bars	Bar Length and Spacing
< 8"	'BT-1'	#4	36" Long at 30" Centers
		#5	30" Long at 30" Centers
≥ 8"	'BT-2'	#5	36" Long at 30" Centers



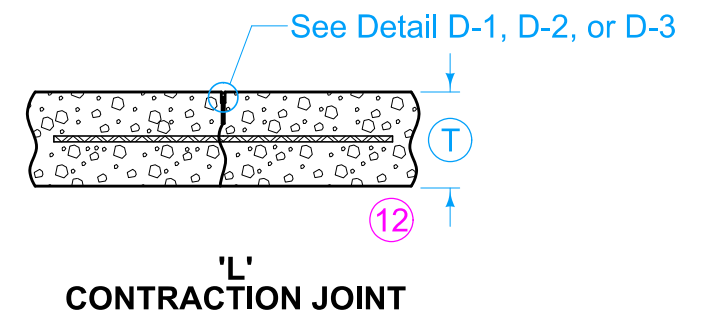
(T)	Joint	Bars	Bar Length and Spacing
< 8"	'BT-5'	#4	24" Long at 30" Centers
≥ 8"	'BT-3'	#5	24" Long at 30" Centers
	'BT-4'		24" Long at 15" Centers



(T)	Joint	Bars	Bar Length and Spacing
< 8"	'KT-1'	#4	30" Long at 30" Centers
≥ 8"	'KT-2'	#5	30" Long at 30" Centers
	'KT-3'		30" Long at 15" Centers

**LONGITUDINAL CONTRACTION**

- 10 Bar supports may be necessary for fixed form paving to ensure the bar remains in a horizontal position in the plastic concrete.
- 11 Sawing or sealing of joint not required.
- 12 The following joints are interchangeable, subject to the pouring sequence:  
'BT-1', 'L-1', and 'KT-1'  
'KT-2' and 'L-2'  
'KT-3' and 'L-3'



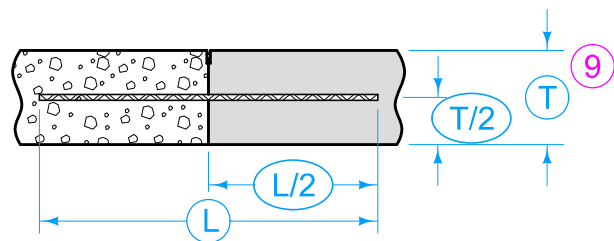
(T)	Joint	Bars	Bar Length and Spacing
< 8"	'L-1'	#4	36" Long at 30" Centers
≥ 8"	'L-2'	#5	36" Long at 30" Centers
	'L-3'		36" Long at 15" Centers

LEGEND	
	Existing Pavement
	Proposed Pavement

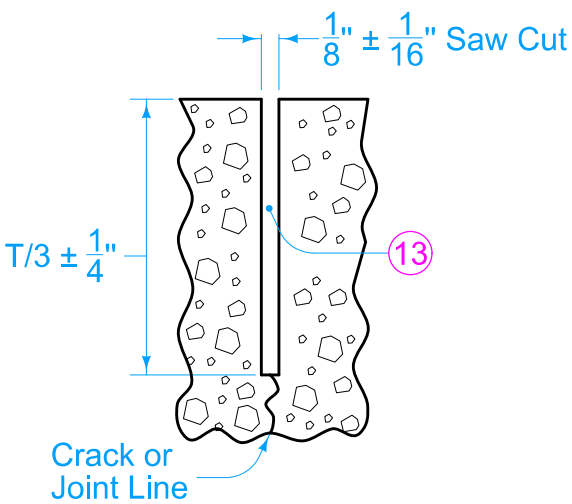
SUDAS		IOWA DOT		REVISION	
FIGURE 7010.101		STANDARD ROAD PLAN		11	04-19-22
REVISIONS: Modified circle note 32.		PV-101		SHEET 3 of 8	
Paul D. Wrigand SUDAS DIRECTOR		Shawn Miller DESIGN METHODS ENGINEER			

**JOINTS**

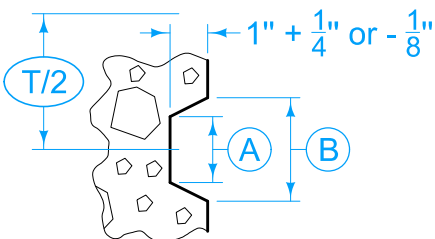




**TIE BAR PLACEMENT**  
(Applies to all joints unless otherwise detailed.)

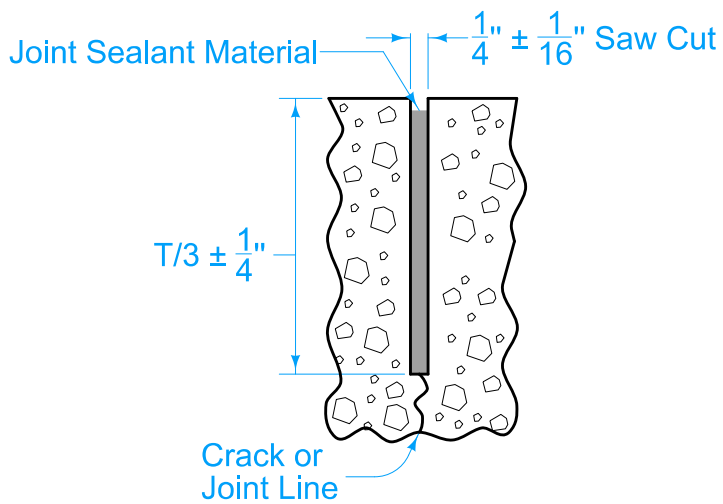


**DETAIL D-1**  
(Required when specified in the contract documents.)

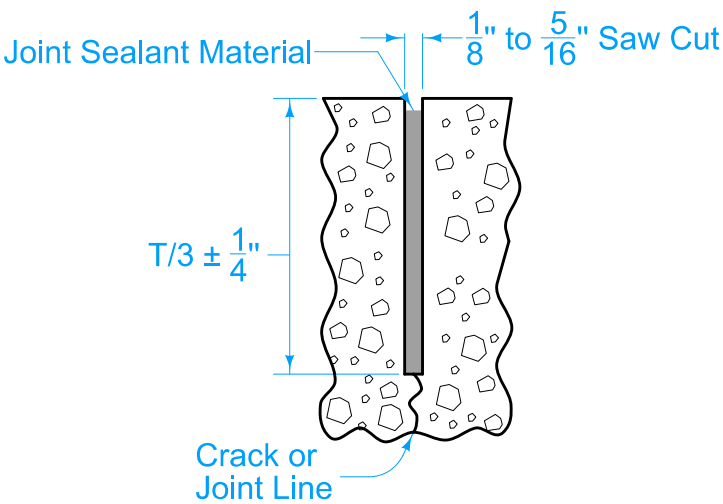


**DETAIL E**

- 9 When tying into old pavement, T represents the depth of sound PCC.
- 13 Sealant or cleaning not required.



**DETAIL D-2**  
(Required when the Department of Transportation is not the Contracting Authority, or when specified in the contract documents)



**DETAIL D-3**  
(Required when the Department of Transportation is the Contracting Authority, or when specified in the contract documents)

KEYWAY DIMENSIONS			
Keyway Type	Pavement Thickness T	A	B
Standard	8" or greater	1 3/4"	2 3/4"
Narrow	Less than 8"	1"	2"

LEGEND	
	Existing Pavement
	Proposed Pavement

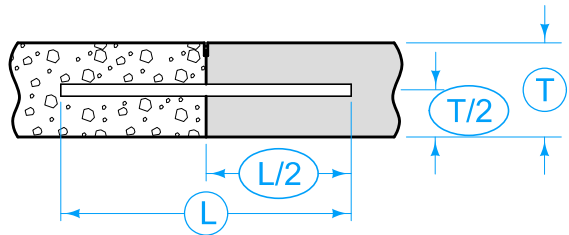
SUDAS IOWA DOT	<b>FIGURE 7010.101</b> <b>STANDARD ROAD PLAN</b>	REVISION 11 04-19-22	
		<b>PV-101</b> SHEET 4 of 8	

REVISIONS: Modified circle note 32.	
 SUDAS DIRECTOR	 DESIGN METHODS ENGINEER

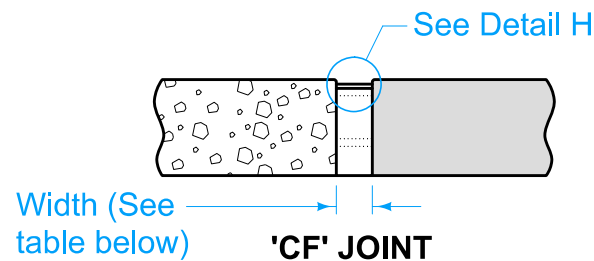
**JOINTS**

**LONGITUDINAL CONTRACTION**



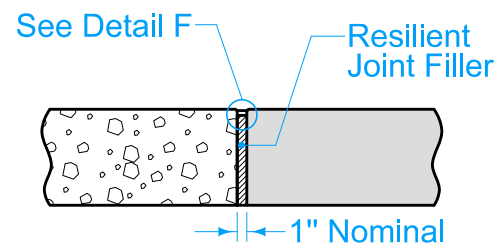


**DOWEL PLACEMENT**  
(Applies to all joints unless otherwise detailed.)

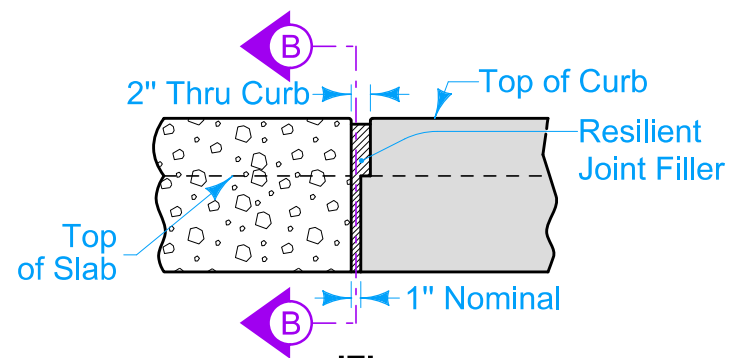


**'CF' JOINT**

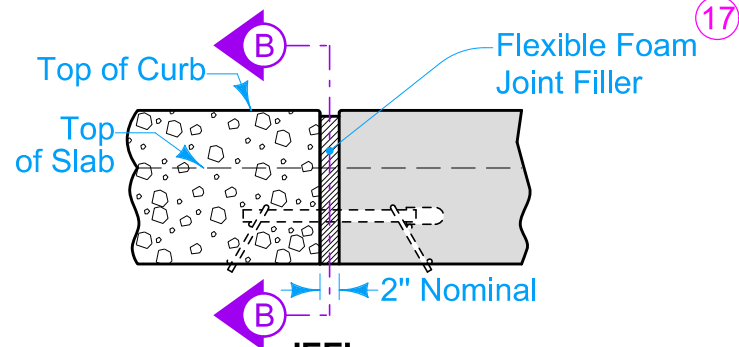
TYPE	WIDTH
CF-1	2"
CF-2	2 1/2"
CF-3	3"
CF-4	3 1/2"



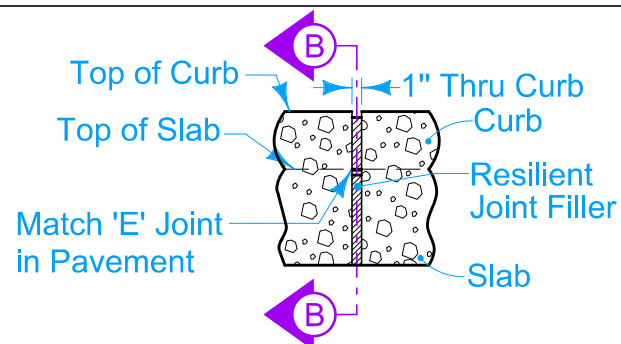
**'E' JOINT**  
**1" EXPANSION JOINT**



**'E' JOINT IN CURB**  
(View at Back of Curb)

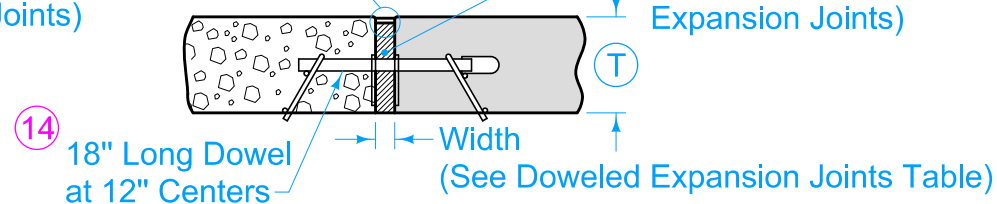


**'EE' JOINT IN CURB**  
(View at Back of Curb)

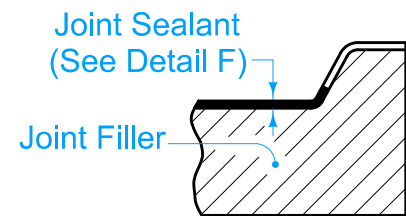


**'ES' JOINT IN CURB**  
(View at Back of Curb)

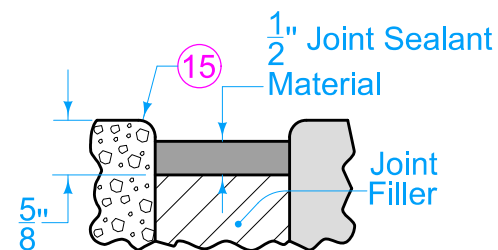
Detail F or Detail G (See Bar Size Table for Doweled Expansion Joints)



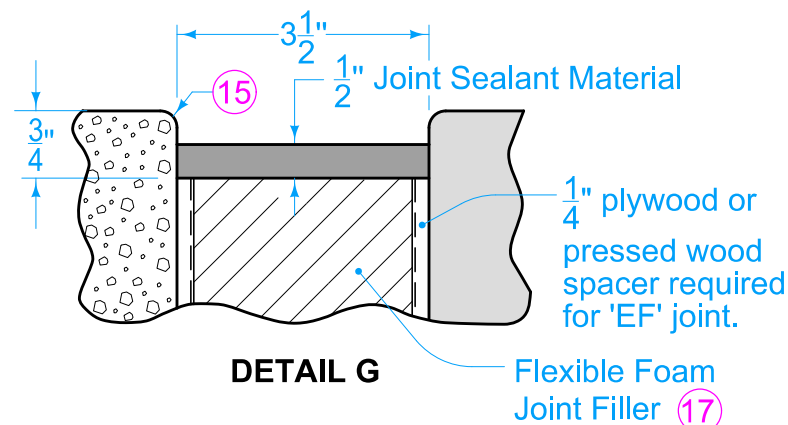
**'ED', 'EE', 'EF' DOWELED EXPANSION JOINT**



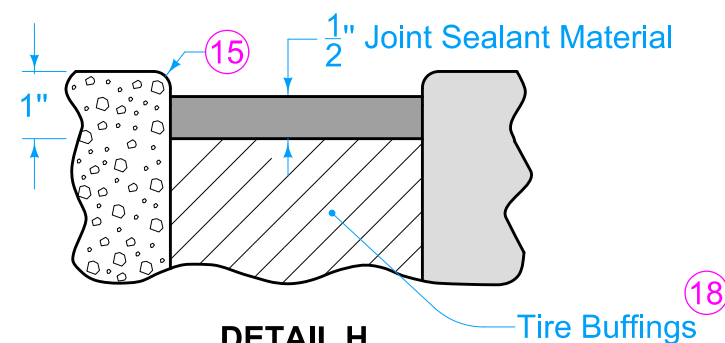
**SECTION B-B**



**DETAIL F**



**DETAIL G**



**DETAIL H**

**EXPANSION**

- 14 See Bar Size Table for Doweled Expansion Joints.
- 15 Edge with 1/4 inch tool for length of joint indicated if formed; edging not required when cut with diamond blade saw.
- 16 See Dowel Assemblies for fabrication details and placement limits. Coat the free end of dowel bar to prevent bond with pavement. At intake locations, dowel bars may be cast-in-place.
- 17 Predrill or preform holes in joint material for appropriate dowel size.
- 18 Compact tire buffings by spading with a square-nose shovel.

**DOWELED EXPANSION JOINTS**

TYPE	WIDTH	FILLER MATERIAL 17
ED	1"	Resilient (Detail F)
EE	2"	Flexible Foam (Detail F)
EF	3 1/2"	Flexible Foam (Detail G)

**BAR SIZE TABLE FOR DOWELED EXPANSION JOINTS**

T	< 8"	≥ 8" but < 10"	≥ 10"
Dowel Diameter	3/4"	1 1/4"	1 1/2"

Tubular Dowel Bars will not be allowed for expansion joints.

**LEGEND**

	Existing Pavement
	Proposed Pavement

SUDAS IOWA DOT	<b>FIGURE 7010.101</b> <b>STANDARD ROAD PLAN</b>	REVISION 11 04-19-22	
		<b>PV-101</b> SHEET 5 of 8	

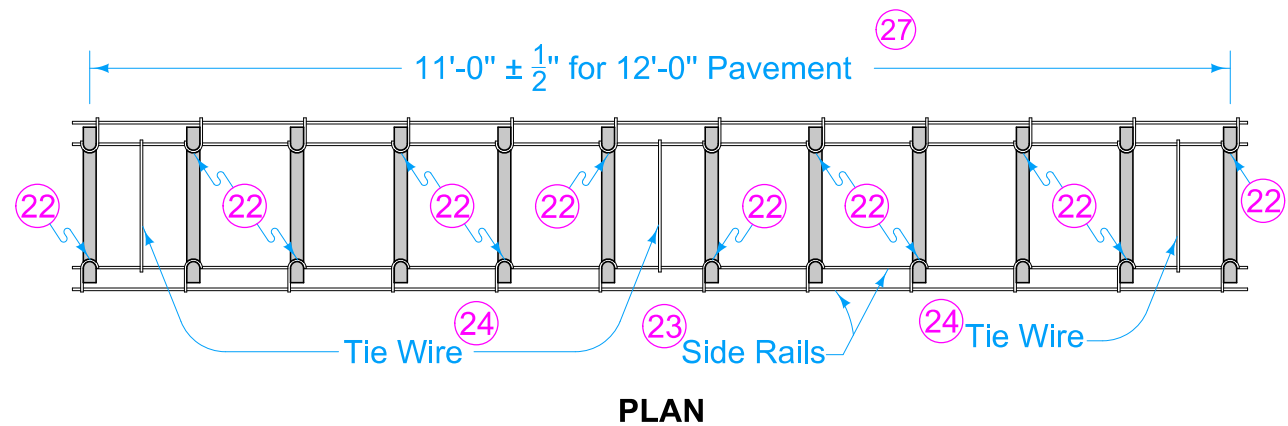
REVISIONS: Modified circle note 32.

Paul D. Wiegand  
 SUDAS DIRECTOR
 Shawn Miller  
 DESIGN METHODS ENGINEER

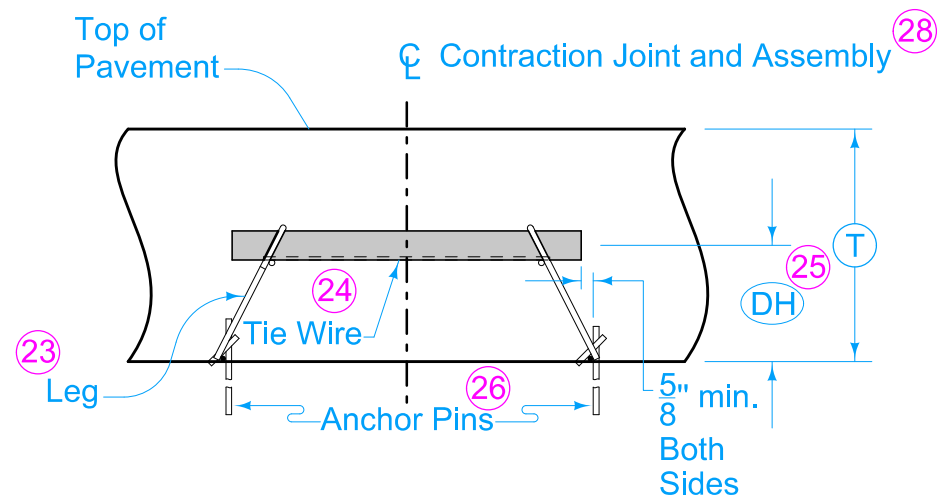
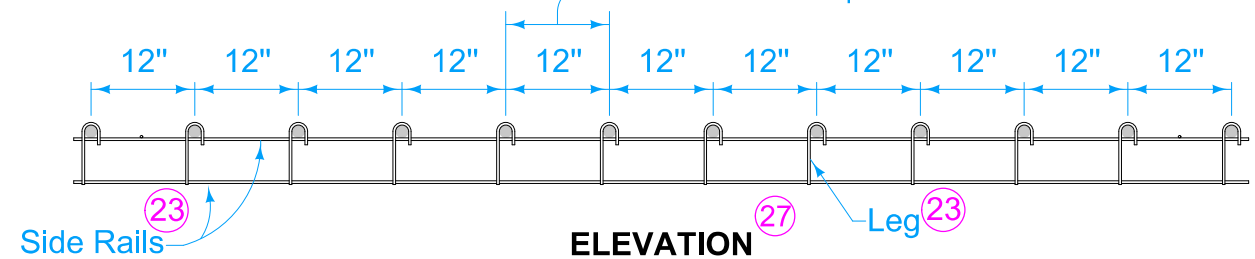
**JOINTS**



CONTRACTION JOINTS



Spaces between dowel bars are nominal dimensions with a 1/4" allowable tolerance.



LONGITUDINAL SECTION

DOWEL ASSEMBLIES

19 20 21

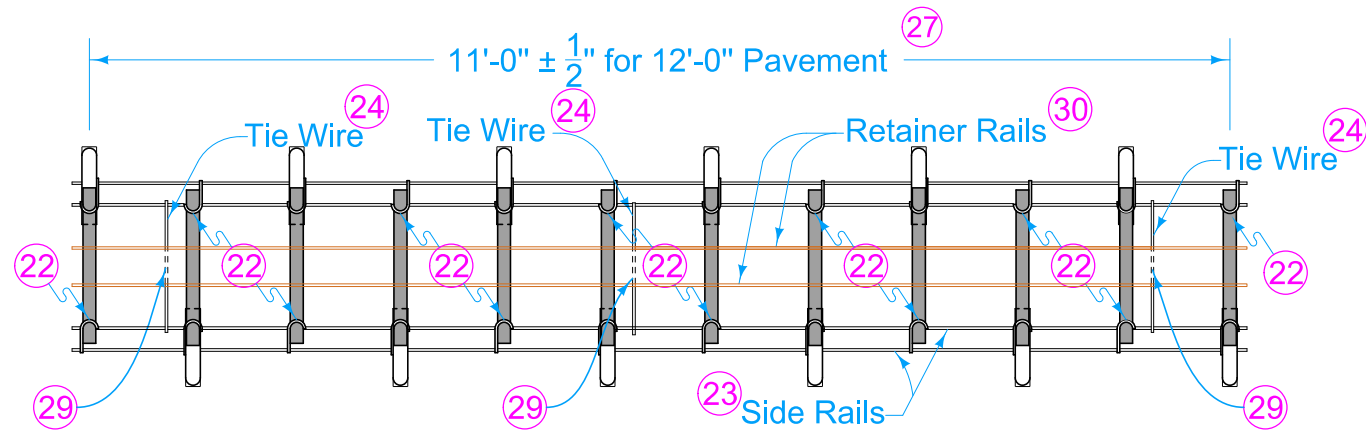
- 19 Use 18 inch long dowel bars with a tolerance of  $\pm 1/8$  inch. Ensure the centerlines of individual dowels are parallel to the other dowels in the assembly within  $\pm 1/8$  inch.
- 20 Use wires with a minimum tensile strength of 50 ksi.
- 21 Details apply to both transverse contraction and expansion joints.
- 22 Weld alternately throughout.
- 23 0.306 inch diameter wire. Wire sizes shown are the minimum required.
- 24 Maximum 0.177 inch diameter wire, welded or friction fit to upper side rail, both sides.
- 25 Measured from the centerline of dowel bar to bottom of lower side rail + 1/4 inch.
- 26 Per lane width, install a minimum of 8 anchor pins evenly spaced (4 per side), to prevent movement of assembly during construction. Anchor assemblies placed on pavement or PCC base with devices approved by the Engineer.
- 27 If dowel basket assemblies are required for curbed pavements, the assembly length is based on the jointing layout. See PV-101, sheet 8.
- 28 Ensure dowel basket assembly centerline is within 2 inches of the intended joint location longitudinally and has no more than 1/4 inch horizontal skew from end of basket to end of basket.

DOWEL HEIGHT AND DIAMETER FOR DOWELED CONTRACTION JOINTS			
T	DH 25	Diameter (Solid)	Diameter (Tubular)
7" to 7 1/2"	3 1/2"	3/4"	7/8"
8" to 9 1/2"	4 1/4"	1 1/4"	1 3/8"
10" to 11 1/2"	5 1/4"	1 1/2"	1 5/8"
12" to 13"	6 1/4"	1 1/2"	1 5/8"
Tubular Dowel Bars will not be allowed for RD joints.			

SUDAS	IOWA DOT	REVISION	
		11	04-19-22
FIGURE 7010.101	STANDARD ROAD PLAN	PV-101	
REVISIONS: Modified circle note 32.		SHEET 6 of 8	
Paul D. Wrigand SUDAS DIRECTOR		Shawn Miller DESIGN METHODS ENGINEER	
JOINTS			

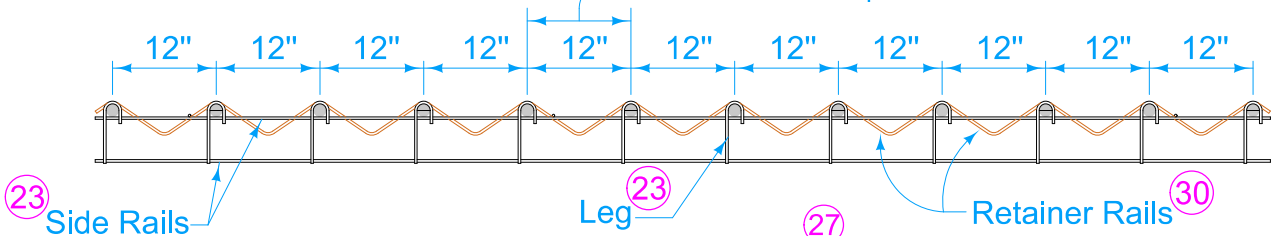


EXPANSION JOINTS

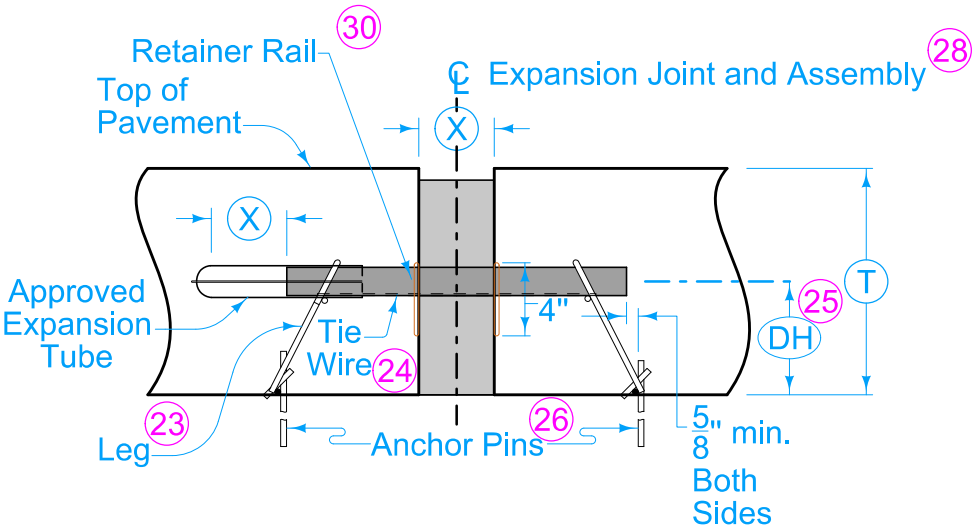


PLAN

Spaces between dowel bars are nominal dimensions with a 1/4" allowable tolerance.



ELEVATION



SECTION THRU EXPANSION JOINT

JOINT OPENING AND EXPANSION TUBE EXTENSION		
Joint Type	(X)	Minimum Tube Length
"ED"	1"	6"
"EE"	2"	7"
"EF"	3 1/2"	9"

DOWEL HEIGHT AND DIAMETER FOR DOWELED EXPANSION JOINTS		
(T)	(DH) (25)	Diameter
7" to 7 1/2"	3 1/2"	3/4"
8" to 9 1/2"	4 1/4"	1 1/4"
10" to 11 1/2"	5 1/4"	1 1/2"
12" to 13"	6 1/4"	1 1/2"

Tubular Dowel Bars will not be allowed for expansion joints.

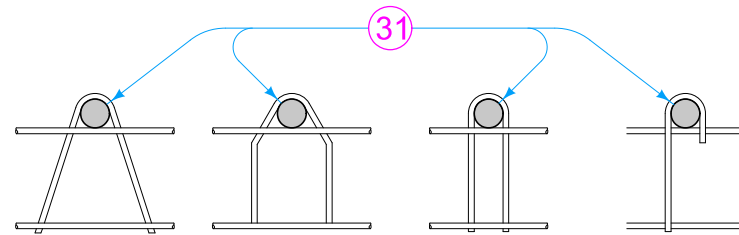
DOWEL ASSEMBLIES

(19) (20) (21)

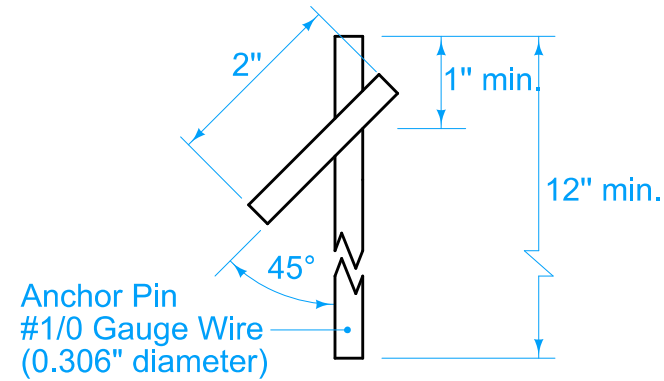
- (19) Use 18 inch long dowel bars with a tolerance of ± 1/8 inch. Ensure the centerlines of individual dowels are parallel to the other dowels in the assembly within ± 1/8 inch.
- (20) Use wires with a minimum tensile strength of 50 ksi.
- (21) Details apply to both transverse contraction and expansion joints.
- (22) Weld alternately throughout.
- (23) 0.306 inch diameter wire. Wire sizes shown are the minimum required.
- (24) Maximum 0.177 inch diameter wire, welded or friction fit to upper side rail, both sides.
- (25) Measured from the centerline of dowel bar to bottom of lower side rail + 1/4 inch.
- (26) Per lane width, install a minimum of 8 anchor pins evenly spaced (4 per side), to prevent movement of assembly during construction. Anchor assemblies placed on pavement or PCC base with devices approved by the Engineer.
- (27) If dowel basket assemblies are required for curbed pavements, the assembly length is based on the jointing layout. See PV-101, sheet 8.
- (28) Ensure dowel basket assembly centerline is within 2 inches of the intended joint location longitudinally and has no more than 1/4 inch horizontal skew from end of basket to end of basket.
- (29) Clip and remove center portion of tie during field assembly.
- (30) 1/4 inch diameter wire.

SUDAS	IOWA DOT	REVISION	
		11	04-19-22
FIGURE 7010.101	STANDARD ROAD PLAN	PV-101	
		SHEET 7 of 8	
REVISIONS: Modified circle note 32.			
Paul D. Wrigand SUDAS DIRECTOR		Shawn Miller DESIGN METHODS ENGINEER	
JOINTS			



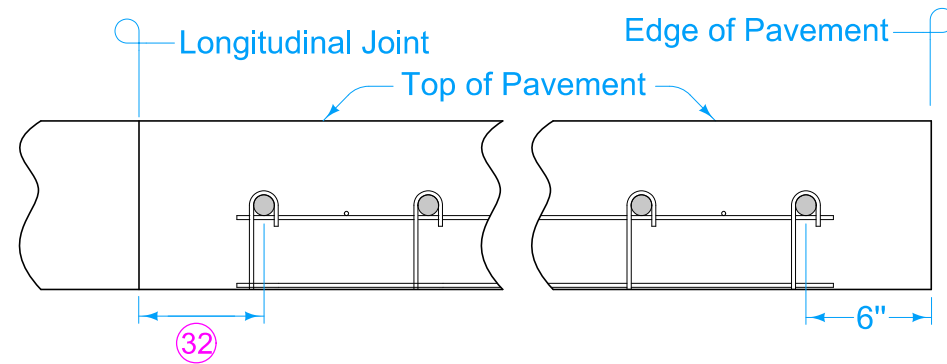


**OPTIONAL LEG SHAPES**

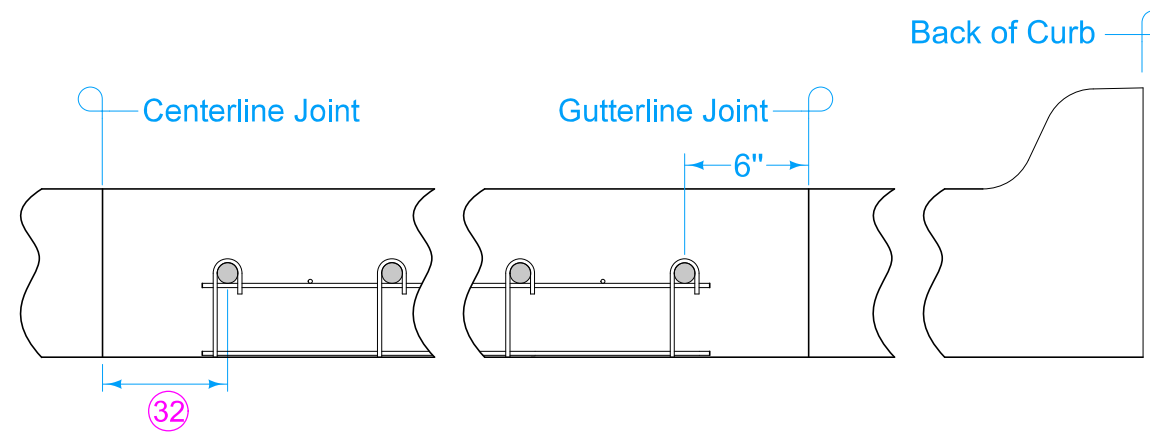


**ANCHOR PIN**

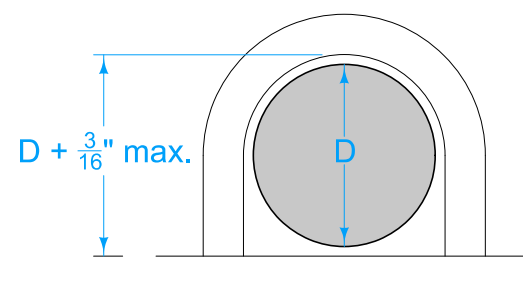
- (19) Use 18 inch long dowel bars with a tolerance of  $\pm 1/8$  inch. Ensure the centerlines of individual dowels are parallel to the other dowels in the assembly within  $\pm 1/8$  inch.
- (20) Use wires with a minimum tensile strength of 50 ksi.
- (21) Details apply to both transverse contraction and expansion joints.
- (31) Diameter of bend around dowel is dowel diameter +  $1/8$  to  $3/16$  inches.
- (32) For uniform lane widths: 3 to 6 inches. For taper and variable width pavements: 3 to 12 inches.



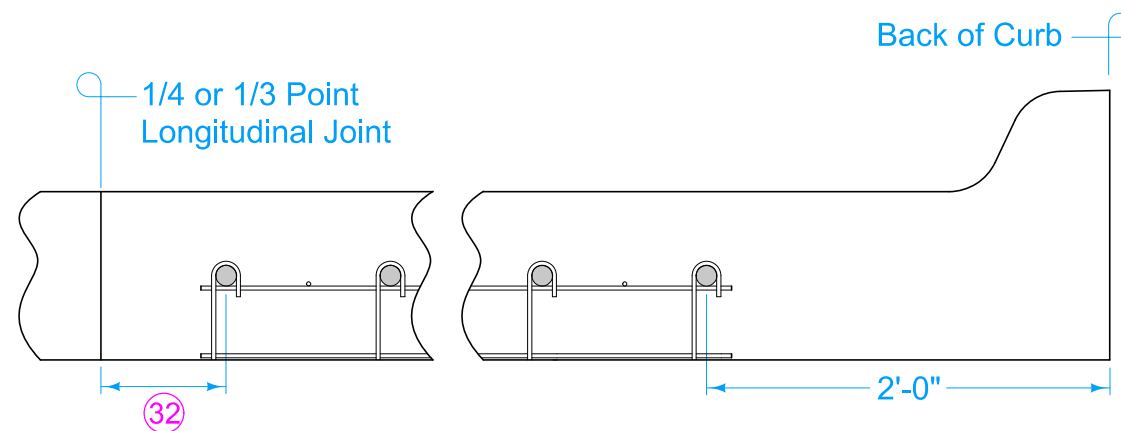
**PLACEMENT LIMITS**  
(Rural Section)



**PLACEMENT LIMITS**  
(Curb and Gutter - Gutterline Jointing)







**BEND AROUND DOWEL** (31)



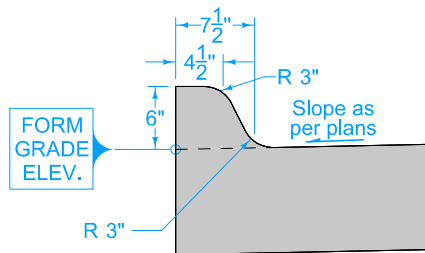
**PLACEMENT LIMITS**  
(Curb and Gutter - 1/4 or 1/3 Point Jointing)

**DOWEL ASSEMBLIES**

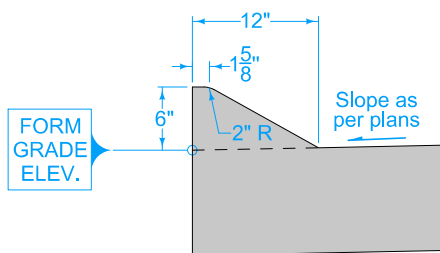
(19) (20) (21)

 SUDAS	 IOWA DOT	REVISION	
		11	04-19-22
		PV-101	
FIGURE 7010.101	STANDARD ROAD PLAN	SHEET 8 of 8	
REVISIONS:            Modified circle note 32.			
 SUDAS DIRECTOR		 DESIGN METHODS ENGINEER	
JOINTS			

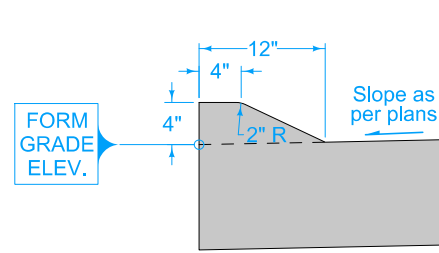




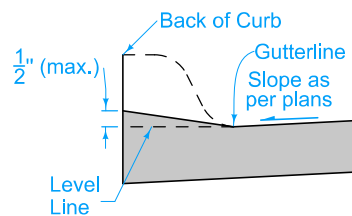
**6" STANDARD CURB**



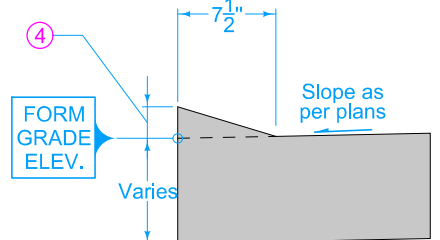
**6" SLOPED CURB**



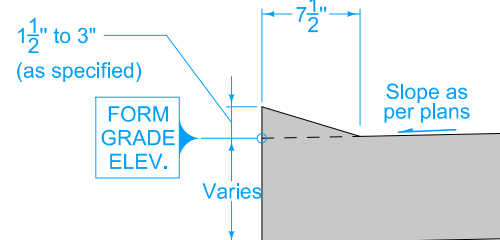
**4" SLOPED CURB**



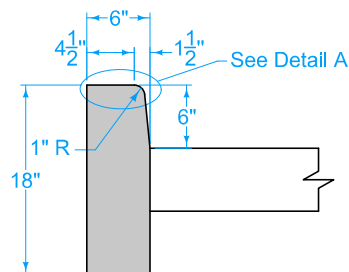
**DROP CURB  
AT SIDEWALK**



**DRIVEWAY DROP CURB  
(Iowa Department of Transportation  
is not the Contracting Authority)**

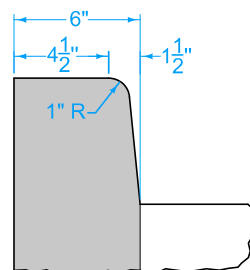


**DRIVEWAY DROP CURB  
(Iowa Department of Transportation  
is the Contracting Authority)**

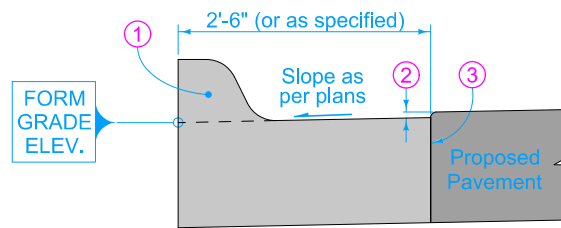


**BEAM CURB\***

\*For short replacement sections,  
match existing curb profile







**DETAIL A**



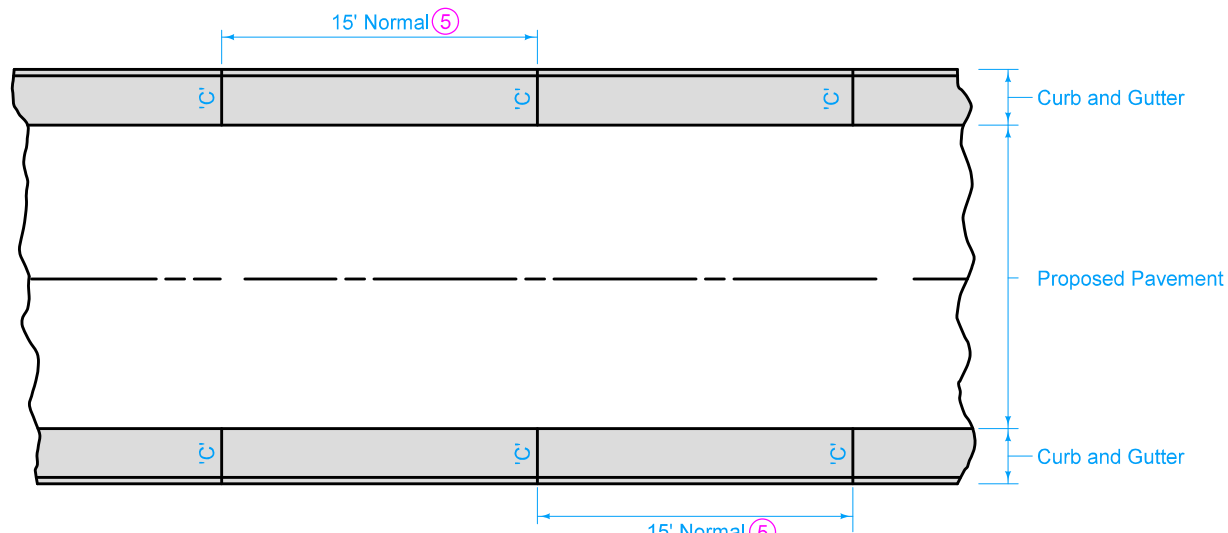
**CURB AND GUTTER UNIT**

For joint details, see [PV-101](#).

- ① 6 inch Standard Curb, 6 inch Sloped Curb, or 4 inch Sloped Curb as specified.
- ② 1/8 inch if Proposed Pavement is HMA. No elevation difference if Proposed Pavement is PCC.
- ③ 'BT', 'KT', or 'L' joint if Proposed Pavement is PCC. 'B' joint if Proposed Pavement is HMA.
- ④ 0 to 2 inches for residential entrances. 1 1/2 to 3 inches for industrial or commercial entrances.

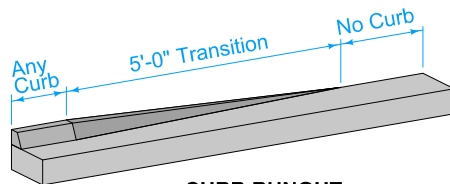
 SUDAS	 IOWADOT	REVISION	
		5	04-21-20
FIGURE 7010.102	STANDARD ROAD PLAN	PV-102	
		SHEET 1 of 2	
REVISIONS: Split DRIVEWAY DROP CURB detail into two details. Added new circle note 4 on Sheet 1. Renumbered circle note on Sheet 5.			
			
SUDAS DIRECTOR		DESIGN METHODS ENGINEER	
PCC CURB DETAILS			



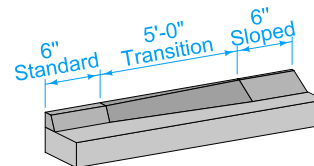


JOINTING DIAGRAM FOR CURB AND GUTTER UNIT

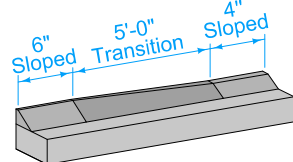
5 If proposed pavement is PCC, match joint spacing for proposed pavement. Place 'E' joints in curb and gutter section where expansion joints are to be placed in proposed pavement.



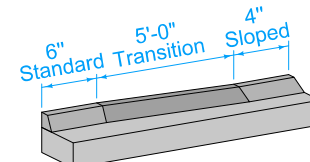
CURB RUNOUT FOR ALL CURBS





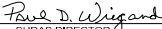

CURB TRANSITION FROM 6" STANDARD TO 6" SLOPED



CURB TRANSITION FROM 6" SLOPED TO 4" SLOPED



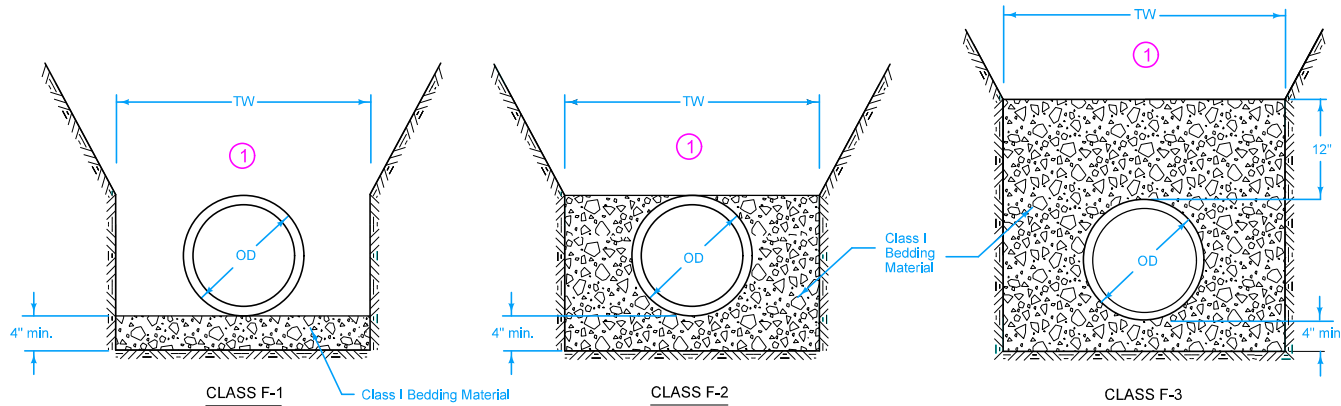
CURB TRANSITION FROM 6" STANDARD TO 4" SLOPED

 SUDAS	 IOWADOT	REVISION	
		5	04-21-20
FIGURE 7010.102	STANDARD ROAD PLAN	PV-102	
		SHEET 2 of 2	
REVISIONS: Split DRIVEWAY DROP CURB detail into two details. Added new circle note 4 on Sheet 1. Renumbered circle note on Sheet 5.			
 SUDAS DIRECTOR		 DESIGN METHODS ENGINEER	
PCC CURB DETAILS			



DO NOT USE ON PRIMARY ROADWAYS

### BEDDING CLASSES



- 1 Place remainder of bedding and backfill materials as specified in the contract documents.
- 2 Minimum depth of bury 12 inches or as specified by the manufacturer.

### ALLOWABLE BEDDING CLASSES

PIPE MATERIAL	STORM SEWER	SANITARY SEWER
Ductile Iron	F-1, F-2, F-3	F-1, F-2, F-3
HDPE	F-2, F-3	Not allowed
Polypropylene	F-2, F-3	F-3
PVC	F-2, F-3	F-3

### Key

OD = Outside diameter of pipe

TW = Trench width at top of pipe:  
Min. = OD+18 Inches OR 1.25xOD+12 Inches  
(whichever is greater)

### ALLOWABLE BURY DEPTH

#### PVC PIPE

Pipe Diameter (in)	ASTM D 3034			ASTM F 679	ASTM F 949	ASTM F 1803	ASTM D 2680
	Solid Wall			SDR 35	Corrug. Exterior	Closed Profile	Composite (Truss Type)
	SDR 23.5	SDR 26	SDR 35				
8	30'	28'	24'	---	24'	---	32'
10	30'	28'	24'	---	24'	---	32'
12	30'	28'	24'	---	24'	---	32'
15	30'	28'	24'	---	24'	---	32'
18	---	---	---	24'	24'	---	---
21	---	---	---	24'	24'	24'	---
24	---	---	---	24'	24'	24'	---
27	---	---	---	24'	---	24'	---
30	---	---	---	24'	24'	24'	---
33	---	---	---	24'	---	---	---
36	---	---	---	24'	24'	24'	---
42	---	---	---	24'	---	24'	---
48	---	---	---	24'	---	24'	---
54	---	---	---	---	---	24'	---
60	---	---	---	---	---	24'	---

#### DUCTILE IRON, AWWA C151, CLASS 52

Pipe Diameter (in)	Class F-1 Bedding	Class F-2 Bedding	Class F-3 Bedding
4	40'	40'	40'
6	40'	40'	40'
8	40'	40'	40'
10	40'	40'	40'
12	37'	40'	40'
14	31'	40'	40'
16	28'	37'	40'
18	25'	34'	40'
20	23'	32'	40'
24	20'	29'	38'
30	18'	23'	31'
36	18'	22'	30'
42	17'	21'	29'
48	16'	19'	27'
54	16'	19'	27'

#### HDPE PIPE

Pipe Diameter (in)	AASHTO M 294
12	8'
15	9'
18	9'
24	9'
30	9'
36	9'
42	8'
48	8'
54	8'
60	8'

#### POLYPROPYLENE PIPE

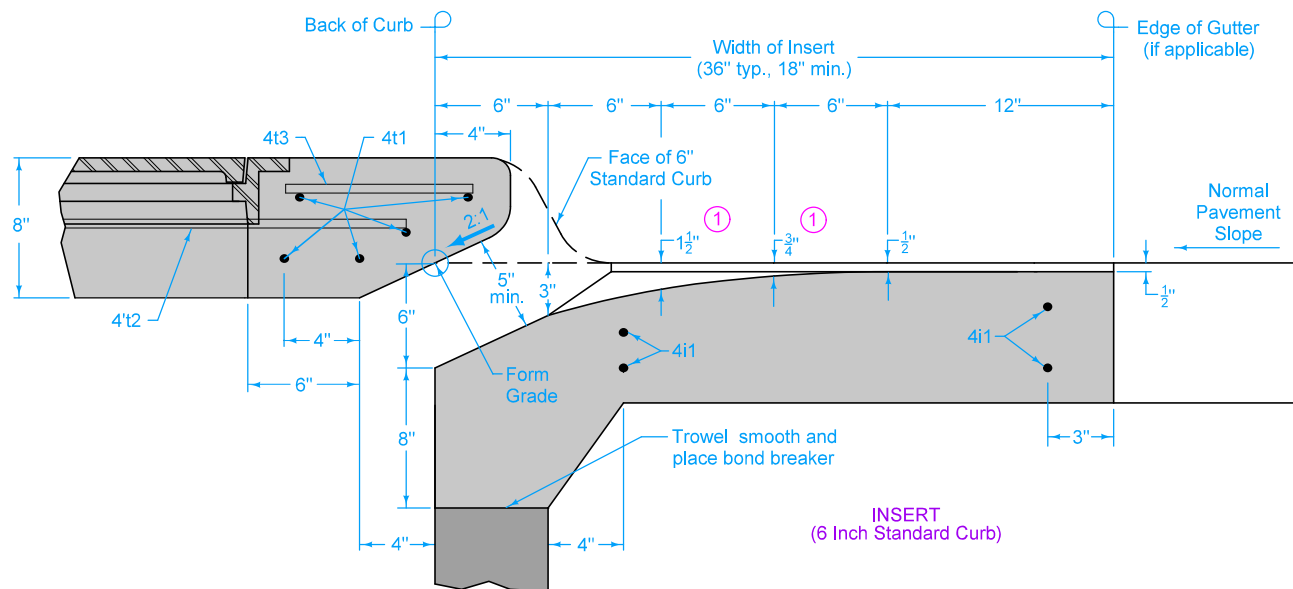
Pipe Diameter (in)	ASTM F 2764
12	24'
15	25'
18	22'
24	20'
30	22'
36	21'
42	22'
48	23'
54	21'
60	21'

FIGURE 3010.103

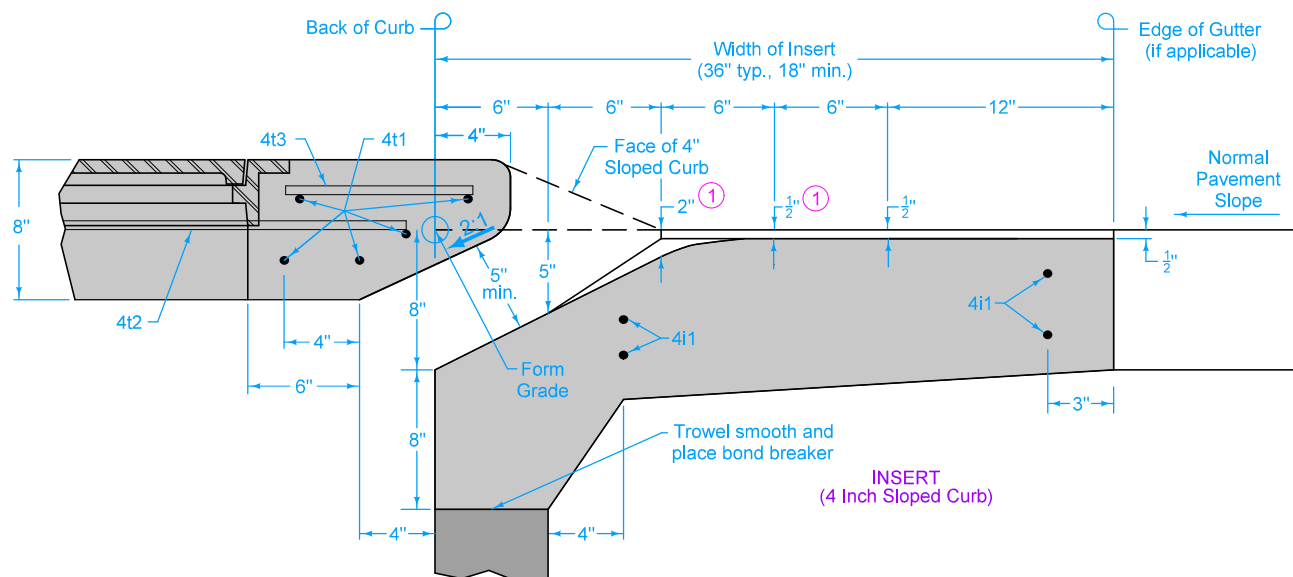
SHEET 1 OF 1





		REVISION
		4 04-20-21
FIGURE 3010.103	STANDARD ROAD PLAN	SW-103
REVISIONS: Added note DO NOT USE ON PRIMARY ROADWAYS.		SHEET 1 of 1
 SUDAS DIRECTOR		 DESIGN METHODS ENGINEER
FLEXIBLE GRAVITY PIPE TRENCH BEDDING		



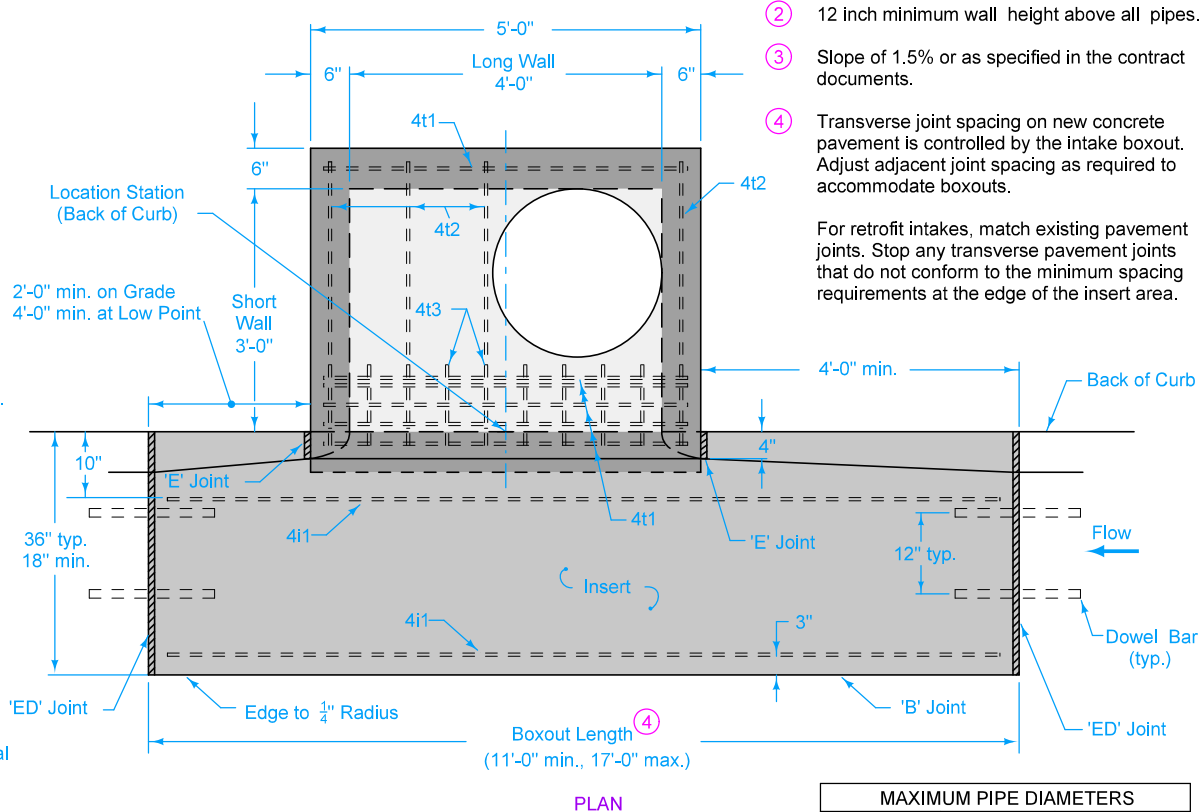


① Insert shaping may be modified for insert widths less than 36 inches. For an 18 inch insert, reduce dimensions indicated by  $\frac{1}{2}$  inch.



 SUDAS	 IOWADOT	REVISION	
		4	04-21-20
FIGURE 6010.507	STANDARD ROAD PLAN	SW-507	
		SHEET 1 of 2	
REVISIONS: Added Class 1 Bedding Material and changed maximum box out length to 17'.			
 SUDAS DIRECTOR		 DESIGN METHODS ENGINEER	
SINGLE OPEN-THROAT CURB INTAKE, SMALL BOX			





MAXIMUM PIPE DIAMETERS		
Pipe Location	Precast Structure	Cast-in-place Structure
Short Wall	24"	30"
Long Wall	30"	36"

REINFORCING BAR LIST						
Mark	Size	Location	Shape	Count	Length	Spacing
4t1	4	Top	————	6	4'-8"	See Insert
4t2	4	Top	————	4	3'-6"	12"
4t3	4	Top	————	10	10"	6"
4b1	4	Base	————	6	3'-6"	1 1"
4b2	4	Base	————	5	4'-6"	10"
4i1	4	Insert	————	4	Boxout Length minus 8"	See Plan
4w1	4	Walls	————	14	Wall Height minus 4"	14"
4w2	4	Long Walls	————	Varies	4'-8"	12"
4w3	4	Short Walls	————	Varies	3'-8"	12"

		REVISION	
		4	04-21-2
FIGURE 6010.507	STANDARD ROAD PLAN	<b>SW-507</b> SHEET 2 of 2	

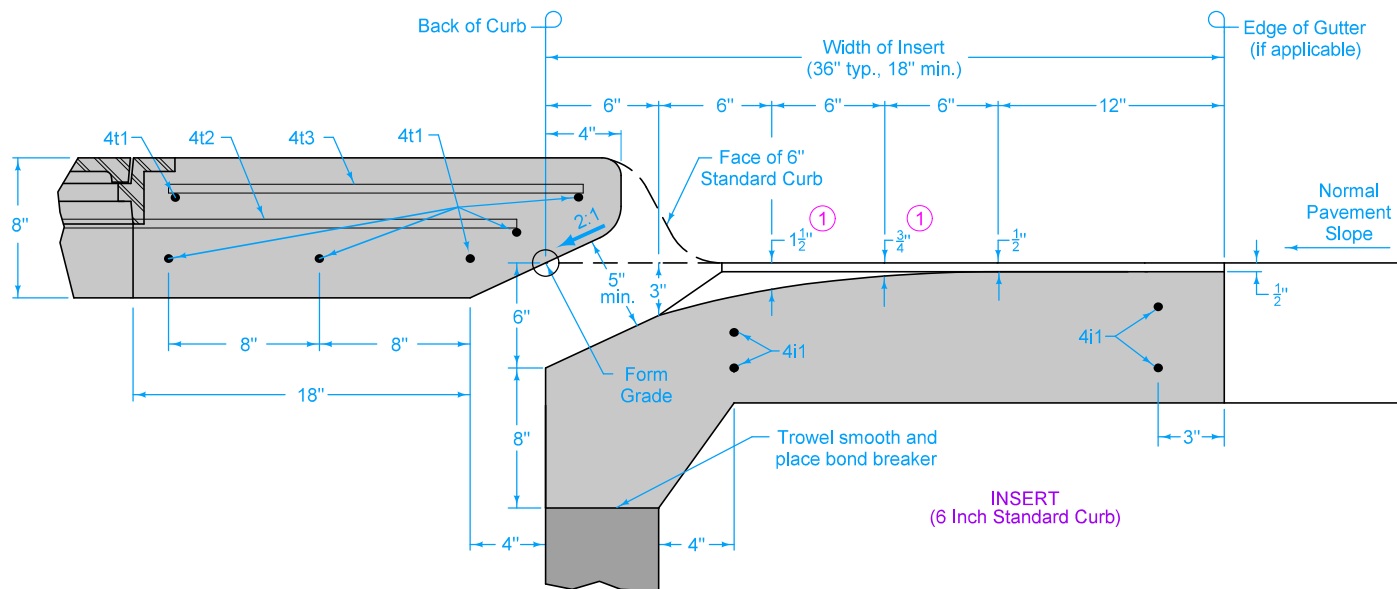
REVISIONS: Added Class I Bedding Material and changed maximum box out length to 17'

Paul D. Wiegand  
SUDAS DIRECTOR

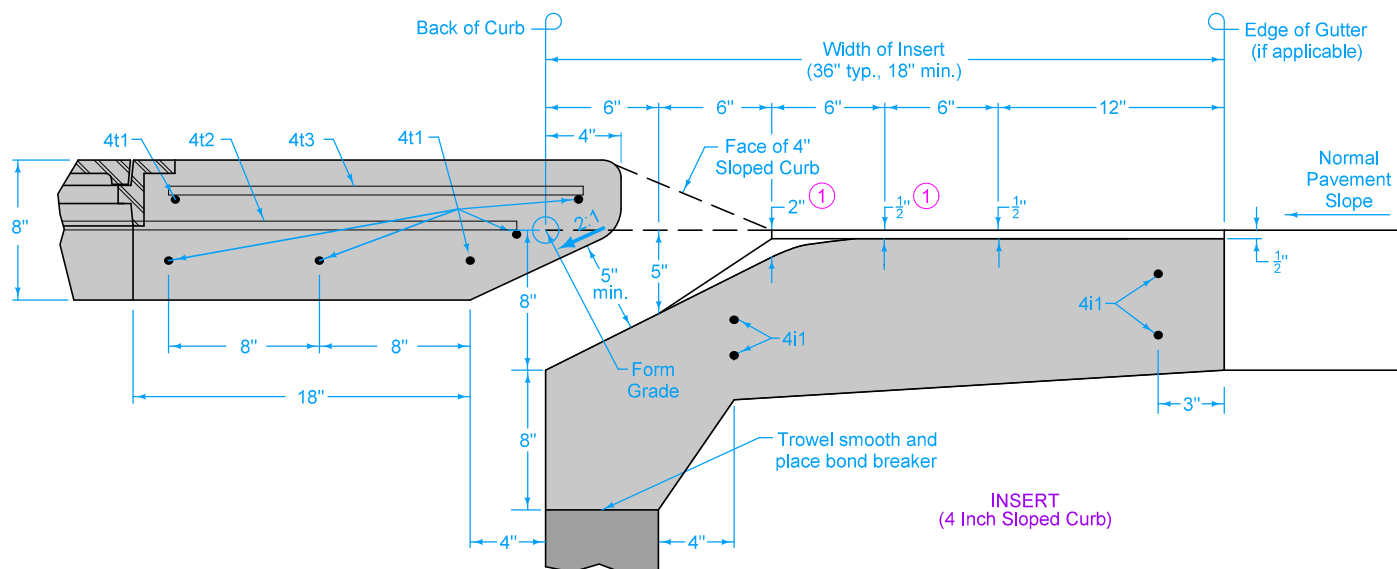
Shawn Miller  
DESIGN METHODS ENGINEER





### SINGLE OPEN-THROAT CURB INTAKE, SMALL BOX



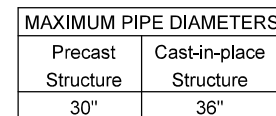


① Insert shaping may be modified for insert widths less than 36 inches. For an 18 inch insert, reduce dimensions indicated by  $\frac{1}{2}$  inch.





	SUDAS		IOWADOT	REVISION	
				4	04-21-20
FIGURE 6010.508	STANDARD ROAD PLAN	SW-508			
		SHEET 1 of 2			
REVISIONS: Added Class 1 Bedding Material and changed maximum box out length to 17'.					
					
SUDAS DIRECTOR			DESIGN METHODS ENGINEER		
SINGLE OPEN-THROAT CURB INTAKE, LARGE BOX					



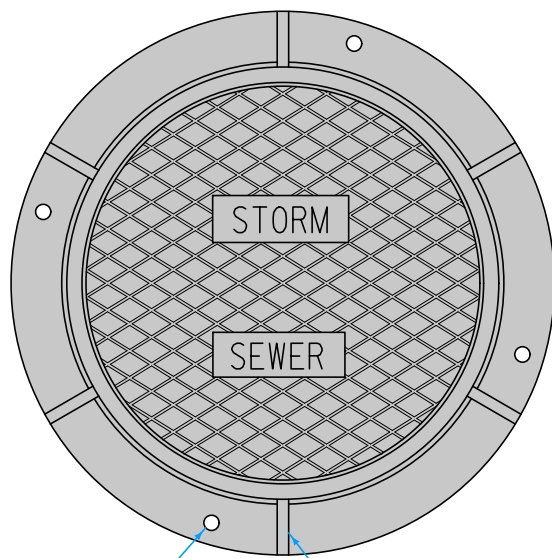


REINFORCING BAR LIST						
Mark	Size	Location	Shape	Count	Length	Spacing
4t1	4	Top	————	7	4'-8"	See Insert
4t2	4	Top	————	4	4'-6"	12"
4t3	4	Top	————	10	1'-10"	6"
4b1	4	Base	————	6	4'-6"	11"
4b2	4	Base	————	6	4'-6"	11"
4i1	4	Insert	————	4	Boxout Length minus 8"	See Plan
4w1	4	Walls	————	16	Wall Height minus 4"	14"
4w2	4	Walls	————	Varies	4'-8"	12"
4w3	4	Walls	————	Varies	4'-8"	12"

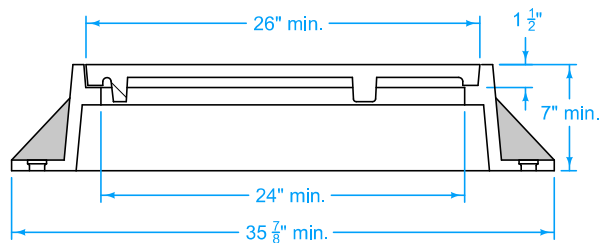
 <b>SUDAS</b>	 <b>IOWA DOT</b>	<b>REVISION</b>	
		<b>4</b>	<b>04-21-2</b>
		<b>SW-508</b>	
<b>FIGURE 6010.508</b>	<b>STANDARD ROAD PLAN</b>	<b>SHEET 2 of 2</b>	
<b>REVISIONS: Added Class I bedding Material and changed maximum box out length to 17'.</b>			
<i>Paul D. Weigand</i> <b>SUDAS DIRECTOR</b>		<i>Shawn Miller</i> <b>DESIGN METHODS ENGINEER</b>	
<b>SINGLE OPEN-THROAT CURB INTAKE, LARGE BOX</b>			



**TYPE E**  
Two-piece fixed casting

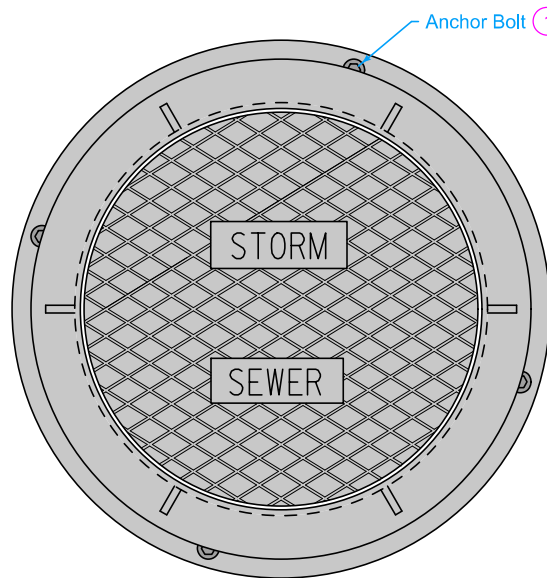


**PLAN**

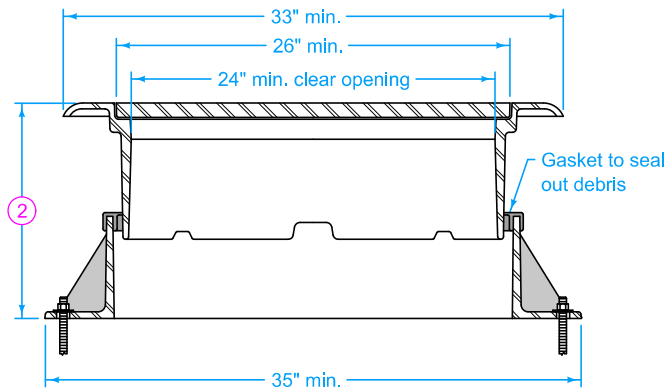


**TYPICAL SECTION**

**TYPE F: HMA**  
Three-piece floating casting for use in HMA paving



**PLAN**







**TYPICAL SECTION**

Frame Notes:  
Size, spacing, and number of lugs and flanges may vary.

Cover Notes:  
Roughness pattern and text style may vary.  
Minimum one pickhole.

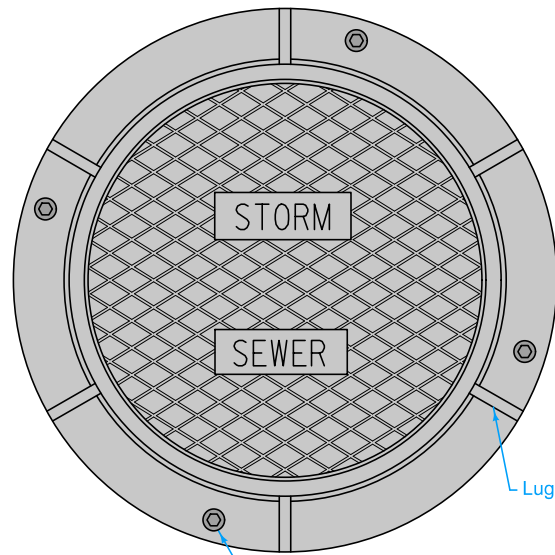
- ① Anchor the lower frame of all three-piece castings to the manhole structure. When specified in the contract documents, anchor the frame of two-piece castings to the manhole structure. If casting frame does not include anchor holes or slots, drill four 7/8 inch diameter holes, equally spaced around the frame.
- ② Casting height varies. Minimum adjustment range of 4 inches.

 SUDAS	 IOWADOT	REVISION	
		4	04-21-20
FIGURE 6010.602	STANDARD ROAD PLAN	SW-602	
REVISIONS: Add option for 3-piece HMA casting		SHEET 1 of 3	
 SUDAS DIRECTOR		 DESIGN METHODS ENGINEER	
<div>CASTINGS FOR STORM SEWER MANHOLES</div>			

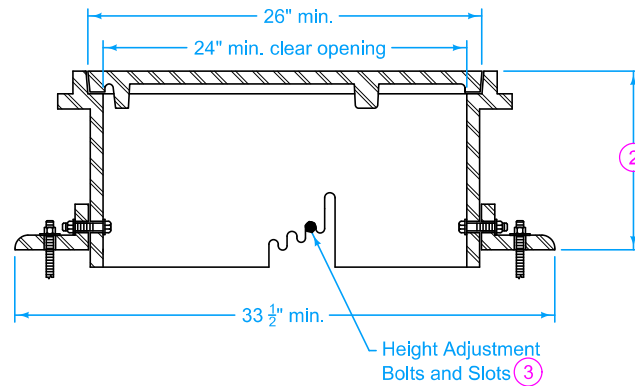


# **TYPE F: PCC**

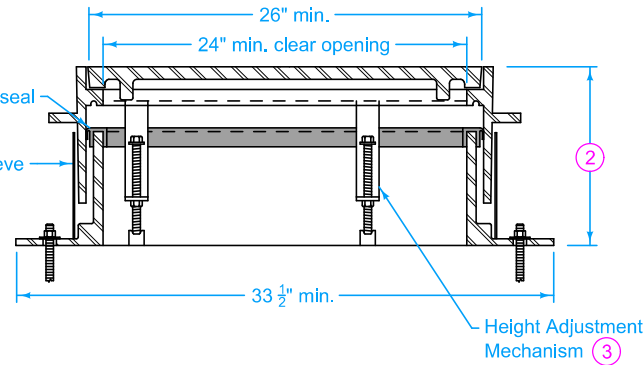
Three-piece floating casting for use  
in PCC paving and PCC boxouts



**PLAN**



Gasket to seal  
out debris  
Steel Sleeve







**TYPICAL SECTION (4)**

Frame Notes:  
Size, spacing, and number of lugs and flanges  
may vary.

Cover Notes:  
Roughness pattern and text style may vary.  
Minimum one pickhole.

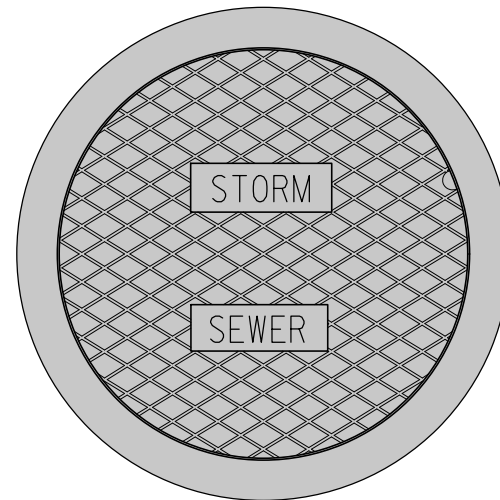
- (1) Anchor the lower frame of all three-piece castings to the manhole structure. When specified in the contract documents, anchor the frame of two-piece castings to the manhole structure. If casting frame does not include anchor holes or slots, drill four 7/8 inch diameter holes, equally spaced around the frame.
- (2) Casting height varies. Minimum adjustment range of 4 inches.
- (3) Set casting at proper grade using the adjustment slots or adjustment mechanism. Remove bolts or mechanism upon completion of paving.
- (4) Height adjustment method may vary; two options are shown.

 SUDAS	 IOWADOT	REVISION	
		4	04-21-20
FIGURE 6010.602	STANDARD ROAD PLAN	SW-602	
		SHEET 2 of 3	
REVISIONS: Add option for 3-piece HMA casting			
 SUDAS DIRECTOR		 DESIGN METHODS ENGINEER	
<div>CASTINGS FOR STORM SEWER MANHOLES</div>			

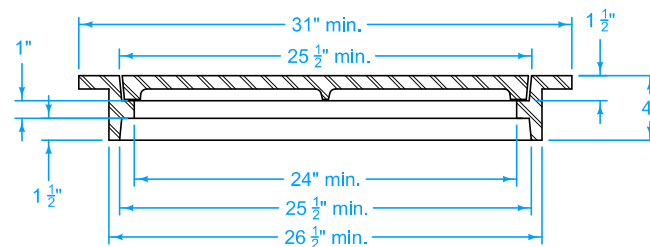


**TYPE G**  
Two piece fixed casting





Cover Notes:  
Roughness pattern and text style may vary.  
Minimum one pickhole.



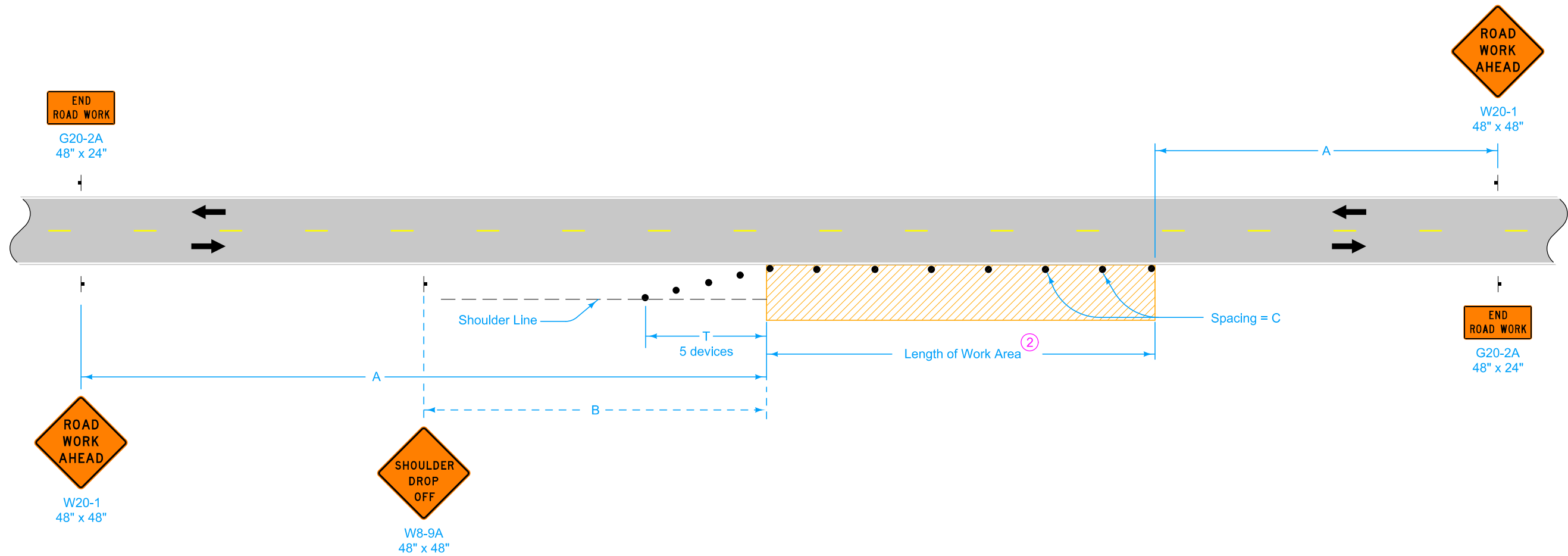
**PLAN**



**TYPICAL SECTION**

 SUDAS	 IOWA DOT	REVISION	
		4	04-21-20
FIGURE 6010.602	STANDARD ROAD PLAN	SW-602	
		SHEET 3 of 3	
REVISIONS: Add option for 3-piece HMA casting			
 SUDAS DIRECTOR		 DESIGN METHODS ENGINEER	
CASTINGS FOR STORM SEWER MANHOLES			





When a pavement edge drop-off exists, install a SHOULDER DROP-OFF sign.

No pavement edge drop-offs greater than pavement depth will be allowed during non-working hours.

Shoulder edge drop-offs shall be mitigated according to Article 1107.08.K2 of the Standard Specifications.

For work lasting less than one hour, refer to TC-1.

① When the length of a pavement edge drop-off is 1000 feet or less, the temporary fillet requirement of Article 1107.08 of the Standard Specifications does not apply. Reduce channelizer spacing to 40 feet.

② For work areas less than 200 feet long, use channelizers spaced at 20 foot centers or use a vehicle with an amber revolving light or amber strobe light.

Possible Contract Item:  
Traffic Control

LEGEND

Traffic Sign

42" Channelizer

Work Area

Direction of Traffic

SPEED LIMIT (mph)*	A	B	C ②	T
35 or less	500'	250'	40'	100'
40 - 45	700'	350'	80' ①	200'
50 or greater	1000'	500'	100' ①	200'

\* Speed Limit refers to regulatory speed limit before road work.

STANDARD ROAD PLAN

REVISIONS: Added speed limit note.

APPROVED BY DESIGN METHODS ENGINEER

WORK WITHIN 15 FT OF TRAVELED WAY

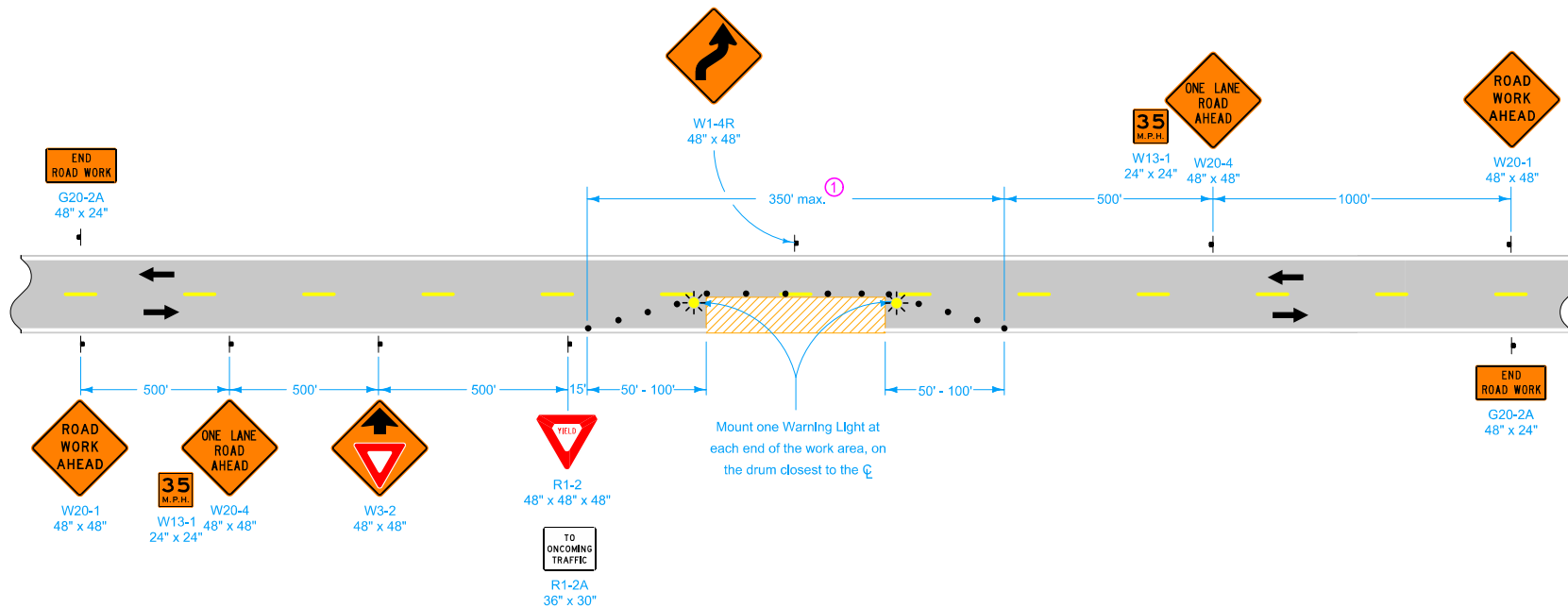
REVISION

104-18-23

TC-202

SHEET 1 of 1





#### LEGEND

- Type 'A' Warning Light
- Traffic Sign
- Work Area
- Direction of Traffic
- 42" Channelizer

Do not use this layout when ADT exceeds 2000 vehicles.

Locate this layout at least 2,500 feet from any other work site layout.

Full-depth openings during non-working hours will not be allowed. Temporary plating, plank or filling may be necessary. Vehicles, unattended equipment, materials or stock-piled waste are not permitted between the shoulder lines during non-working hours.

For bridge deck overlay projects: The night before overlay operations begin, a bridge deck finishing machine and necessary materials may be placed on the roadway.

① Do not use this layout if a No Passing Zone for the closed lane is located within this area.

Possible Contract Item:  
Traffic Control

	REVISION
	3 10-15-19
STANDARD ROAD PLAN	TC-211
REVISIONS: New logo.	SHEET 1 of 1
APPROVED BY DESIGN METHODS ENGINEER	
<b>LANE CLOSURE ON LOW VOLUME ROADWAY</b>	



SIGN PLACEMENT ON  
TYPE III BARRICADES





Typical Sign Placement



Sign Placement with  
Supplemental Sign

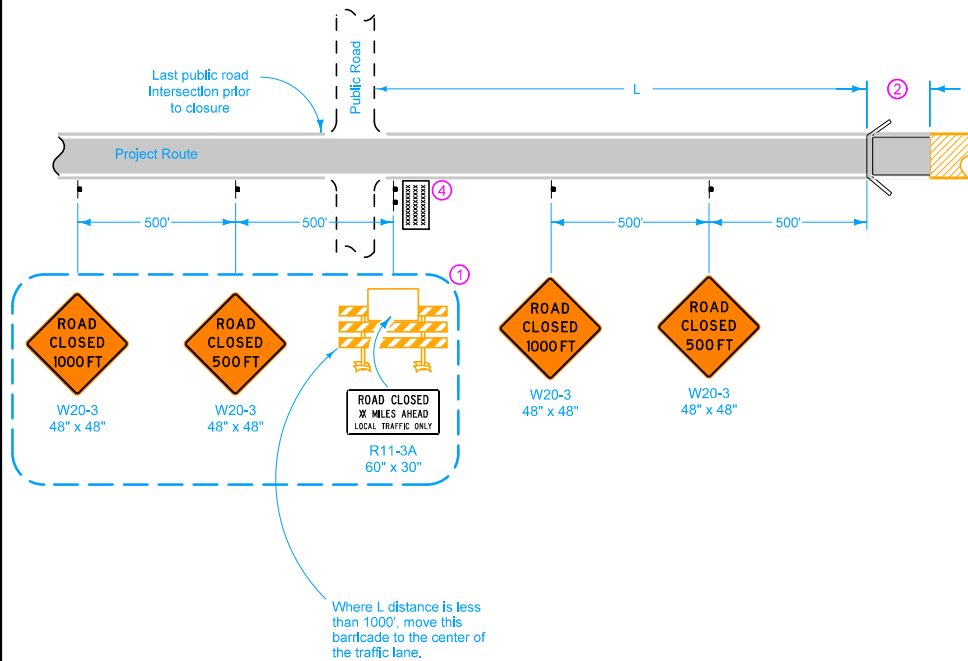
Possible Contract Items:  
Traffic Control  
Safety Closures  
Portable Dynamic Message Sign

Possible Tabulation:  
108-13A

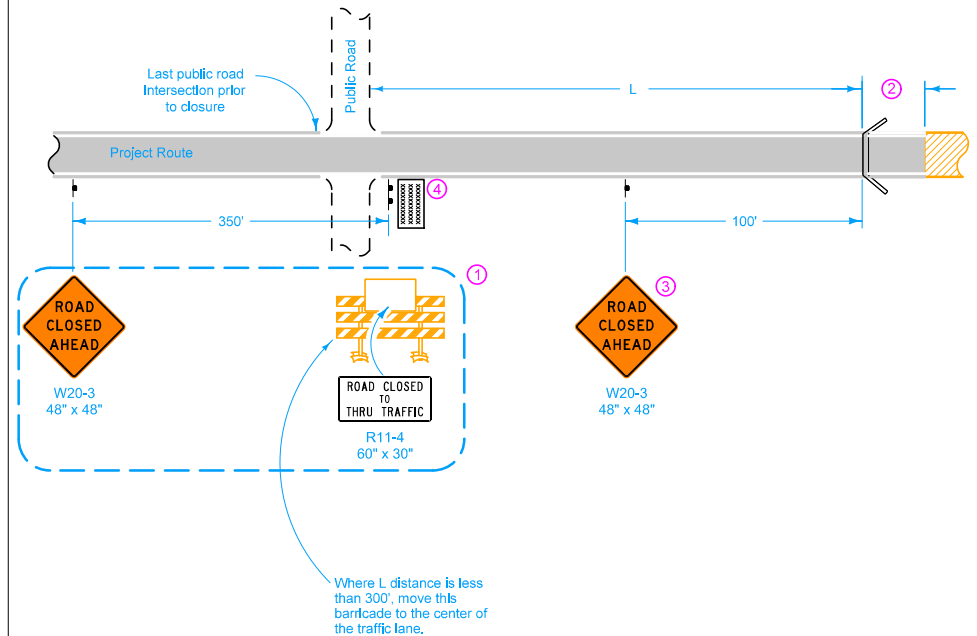
 <b>STANDARD ROAD PLAN</b>	REVISION	
	6	04-21-20
	<b>TC-252</b>	
	SHEET 1 of 3	
REVISIONS: Added Portable Dynamic Message Sign and new note 4 on Sheet 2.		
		
APPROVED BY DESIGN METHODS ENGINEER		
<b>ROUTES CLOSED TO TRAFFIC</b>		



**SITUATION 1 (RURAL)**  
Project Route Closure



**SITUATION 1 (URBAN)**  
Project Route Closure



**LEGEND**

- Traffic Sign
- Type III Barricade
- Portable Dynamic Message Sign
- Work Area
- Road Closure

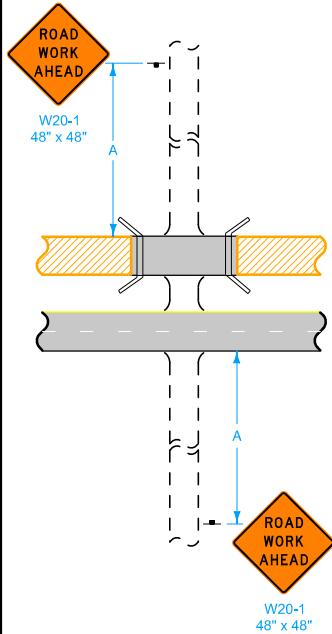
- ① In situation 1, if the intersection is the point of detour these signs and barricade will become the responsibility of the contracting authority and may be modified by the contracting authority to fit detour signing.
- ② When possible, a 100' buffer is desirable.
- ③ When L is less than 300 feet, omit the ROAD CLOSED AHEAD sign.
- ④ Place for 7 calendar days prior to closure. The Engineer will determine the message to display. Remove when road is closed. Use of Portable Dynamic Message Sign is optional on non-primary roadways.

	REVISION
	6 04-21-20
	TC-252
	SHEET 2 of 3
REVISIONS: Added Portable Dynamic Message Sign and new note 4 on Sheet 2.	
APPROVED BY DESIGN METHODS ENGINEER	
ROUTES CLOSED TO TRAFFIC	



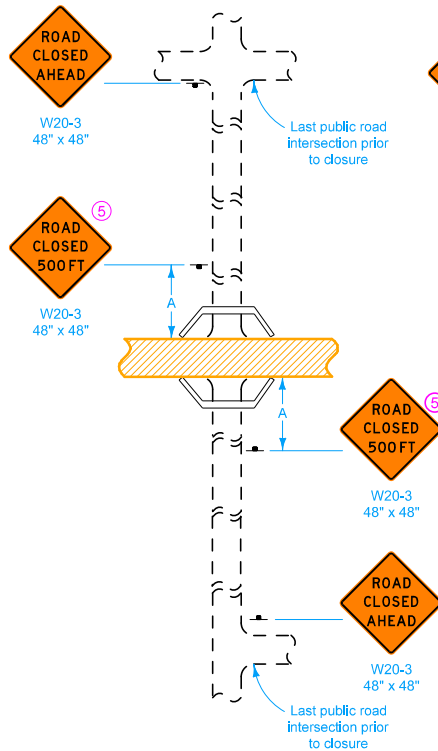
### SITUATION 2

Public cross-traffic maintained.  
No access to project.



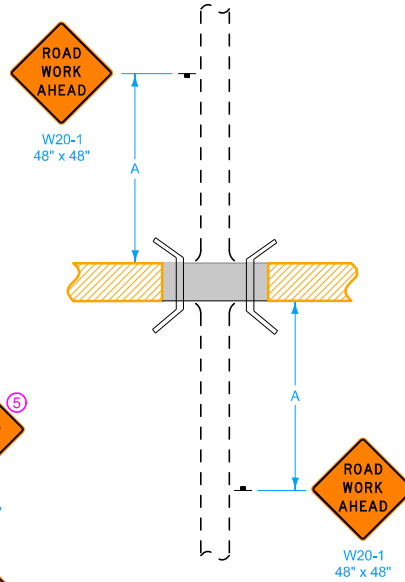
### SITUATION 3

No access to project  
(Applicable to T-Intersections)



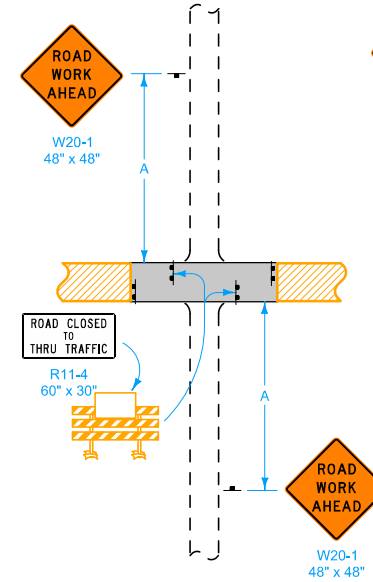
### SITUATION 4

Public cross-traffic maintained.  
No access to project.



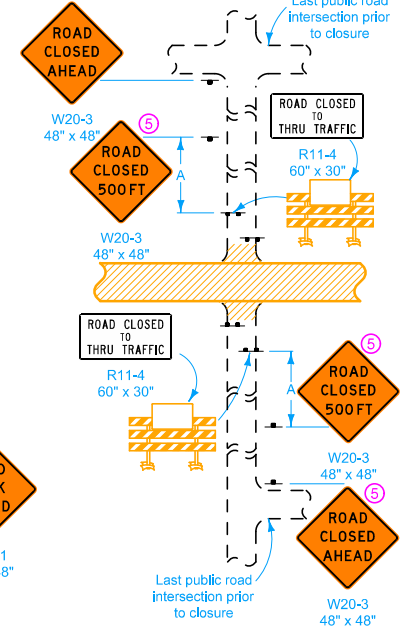
### SITUATION 5

Public cross-traffic maintained.  
Contractor and resident access.



### SITUATION 6

No public access. Contractor and resident  
access only. (Applicable to T-Intersections)



#### LEGEND



Location	A
Urban	200'
Rural	500'

During suspension of work, (such as over winter):

- Use Situation 2 on two-lane to four-lane projects.
- Situation 5 is preferred where cross-traffic is maintained.

⑤ When the distance between the last public road intersection and the ROAD CLOSED or ROAD CLOSED TO THRU TRAFFIC barricade is less than 1,000 feet, omit the ROAD CLOSED 500 FT sign.

	REVISION
	6 04-21-20
	<b>STANDARD ROAD PLAN</b>
	<b>TC-252</b>
SHEET 3 of 3	
REVISIONS: Added Portable Dynamic Message Sign and new note 4 on Sheet 2.	
APPROVED BY DESIGN METHODS ENGINEER	
<b>ROUTES CLOSED TO TRAFFIC</b>	