
SPECIFICATIONS

FOR

MAIN STREET SIDEWALK – PHASE 2

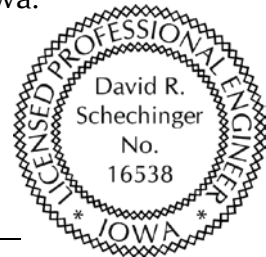
WEST BRANCH, IOWA

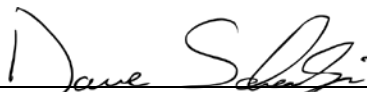
SPECIFICATIONS
FOR
MAIN STREET SIDEWALK – PHASE 2
WEST BRANCH, IOWA

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:

Date:





4/2/2015

David R. Schechinger, P.E.

Iowa License No. 16538

My license renewal date is December 31, 2016

Detailed parts covered by this seal:

ALL

Prepared by
VEENSTRA & KIMM, INC.
West Des Moines,
Iowa

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MAIN STREET SIDEWALK – PHASE 2 WEST BRANCH, IOWA

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NOTICE OF HEARING AND LETTING

NOTICE OF PUBLIC HEARING ON PROPOSED PLANS AND SPECIFICATIONS, PROPOSED FORM OF CONTRACT AND ESTIMATE OF COST FOR CONSTRUCTION OF MAIN STREET SIDEWALK – PHASE 2 FOR THE CITY OF WEST BRANCH, IOWA, AND THE TAKING OF BIDS THEREFOR

Notice is hereby given that the City Council of West Branch, Iowa will meet in the Council Chambers, 110 North Poplar Street, West Branch, Iowa, on the 20th day of April, 2015 at 7:00 p.m. at which time a hearing will be held and said Council proposes to adopt plans, specifications, form of contract and estimate of cost for the construction of the Main Street Sidewalk – Phase 2 and work incidental thereto for said City.

Sealed proposals will be received by the City Clerk of the City of West Branch, Iowa, at City Hall, 110 North Poplar Street, West Branch, Iowa, until 2:10 p.m. on the 16th day of April, 2015, for the construction of Main Street Sidewalk – Phase 2 as described in the plans and specifications therefor, now on file in the office of the City Clerk. Proposals will be opened and the amount of the bids announced by the City Clerk at the time and date specified above. Proposals will be acted upon by said City at the April 20th City Council Meeting or at such later time and place as then may be fixed.

The location of the work to be done and the kinds and sizes of materials proposed to be used are as follows:

MAIN STREET SIDEWALK – PHASE 2

Construct Main Street Sidewalk – Phase 2 including all labor, materials, and equipment necessary for approximately 360 square yards of PCC sidewalk, 312 linear feet of curb and gutter, 252 square yards of 7" PCC pavement, pedestrian hand rail, detectable warning curb ramps, and miscellaneous associated work.

All work and materials are to be in accordance with the proposed plans, specifications, form of contract and estimate of cost now on file in the office of the City Clerk of West Branch, Iowa, and by this reference made a part thereof as though fully set out and incorporated herein.

At said hearing, the City Council will consider the proposed plans, specifications, form of contract and estimate of cost for the project, the same now being on file in the office of the City Clerk, reference to which is made for a more detailed and complete description of the proposed improvements, and at said time and place the said Council will also receive and consider any objections to said plans, specifications and form of contract or to the estimate cost of said improvements made by any interested party.

All proposals and bids in connection therewith shall be submitted to the City Clerk of said City on or before the time herein set for receiving bids. All proposals shall be made on official bidding blanks furnished by the City, and any alternations in the official form of proposal will entitle the Council, at its option, to reject the proposal involved from consideration. Each proposal shall be sealed and plainly identified.

Each proposal shall be made out on a blank form furnished by the municipality and must be accompanied in a sealed envelope by either (1) a certified or cashier's check drawn on a solvent Iowa bank or a bank chartered under the laws of the United States or a certified share draft drawn on a credit union in Iowa or chartered under the laws of the United States, in an amount equal to five percent (5%) of the bid, or (2) a bid bond executed by a corporation authorized to contract as a surety in the State of Iowa, in the penal sum of five percent (5%) of the bid.

The bid security should be made payable to the CITY OF WEST BRANCH, IOWA. The bid security must not contain any conditions either in the body or as an endorsement thereon. The bid security shall be forfeited to the City as liquidated damages in the event the successful bidder fails or refuses to enter into a contract within 10 days after the award of contract and post bond satisfactory to the City insuring the faithful fulfillment of the contract and the maintenance of said work, if required, pursuant to the provisions of this notice and other contract documents. Bidders shall use the bid bond form bound in the specifications.

By virtue of statutory authority, preference will be given to products and provisions grown and coal produced within the State of Iowa, and to Iowa domestic labor, to the extent lawfully required under Iowa Statutes.

The City Council reserves the right to reject any or all bids and to waive informalities or technicalities in any bid and to accept the bid which it deems to be in the best interest of the City.

The Council reserves the right to defer acceptance of any proposal for a period not to exceed thirty (30) calendar days from the date of Hearing and Letting.

The successful bidder will be required to furnish a 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 City Council and shall guarantee the faithful performance of the contract and the terms and conditions therein contained and shall guarantee the prompt payment for all materials and labor and protect and save harmless the City from claims and damages of any kind caused by the operations of the Contractor, and shall guarantee the work against faulty workmanship and materials for a period of four (4) years after its completion and acceptance by the City Council.

The work will commence within ten (10) days after written Notice to Proceed and shall be completed by June 19, 2015.

Liquidated damages in the amount of Five Hundred Dollars (\$500.00) per consecutive calendar day will be assessed for each day that work shall remain uncompleted after the end of the contract period, with due allowance for extensions of the contract period due to conditions beyond the control of the Contractor.

Payment to the Contractor for said improvements will be made in cash derived from the proceeds of the issuance and sale of such bonds and/or from such cash funds of the City as may be legally used for said purposes. Any combination of the above methods of payment may be used at the discretion of the City Council.

Payment to the Contractor will be on the basis of monthly estimates equivalent to ninety-five percent (95%) of the contract value of the work completed and payments made to material suppliers for materials ordered specifically for the project or delivered to the site during the preceding calendar month. Estimates will be prepared on the last day of each month by the Contractor, subject to the approval of the Engineer, who will certify to the City for payment each approved estimate on or before the tenth (10th) day of the following month. Such monthly payments shall in no way be construed as an act of acceptance for any part of the work partially or totally completed. Upon completion of the work and its acceptance by the Council, the Contractor will be paid an amount which, together with previous payments, will equal ninety-five percent (95%) of the contract price of the contract. Final payment of the remaining five percent (5%) will be made not less than thirty-one (31) days after completion and acceptance by resolution of the City Council of the completed contract, subject to the conditions and in accordance with the provisions of Chapter 573 of the Code of Iowa, as amended. No such partial or final payments will be due until the Contractor has certified to the City that the materials, labor and services involved in each estimate have been paid for in accordance with the requirements stated in the specifications.

The City will issue a sales tax exemption certificate applicable for all materials purchased for the project.

Plans and specifications governing the construction of the proposed improvements, and also the prior proceedings of the City Council 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.

Notice of Hearing and Letting

Copies of said plans and specifications are now on file in the office of the City Clerk, for examination by bidders. Copies may be obtained from TECHNIGRAPHICS, 415 Highland Avenue, Suite 100, Iowa City, Iowa 52240. Contact Jill Chambers at 319-354-5950 or email jillc@rapidsrepro.com. A refundable deposit of \$30 is required. Please make checks to Veenstra & Kimm, Inc. Mail said deposit checks to Technigraphics, 415 Highland Avenue, Suite 100, Iowa City, Iowa 52240, Attn: Jill Chambers. Upon receiving deposit check, plans and specifications will be mailed out. When plans and specifications are returned in good condition within 14 days of the award date of the project, deposit checks will be returned.

This notice is given by order of the Council of the City of WEST BRANCH, Iowa.

CITY OF WEST BRANCH, IOWA

Mark Worrell, Mayor

ATTEST:

Matt Muckler, City Administrator

INSTRUCTIONS TO BIDDERS

MAIN STREET SIDEWALK – PHASE 2 WEST BRANCH, IOWA

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1. DEFINITION OF TERMS

- A. "Owner", and "City" shall mean the City of West Branch, Iowa, acting through the City Council or an authorized representative of the City Council.
- B. "Person" shall mean any individual, partnership, society, association, joint stock company, corporation, estate, receiver, trustee, assignee or referee, whether appointed by a court or otherwise, and any combination of individuals.
- C. "Bidder" shall mean any person who submits a proposal to furnish the work described in the Contract Documents.
- D. "Contractor" shall mean the person with whom the Owner may enter into contract for the execution of the work specified.
- E. "Subcontractor" shall mean the person supplying materials, labor, equipment and appurtenances for the work, such person having contractual relations with the Contractor, but not with the Owner.
- F. "Engineer" shall mean VEENSTRA & KIMM, INC., Coralville, Iowa.
- G. "Standard Drawings" shall mean construction detail drawings bound with these specifications.
- H. "Work" shall mean the work to be done and the equipment, supplies and materials to be furnished under the contract, unless some other meaning is indicated by the context.

I. "Station", "Sta." shall mean one hundred (100) linear feet measure.

2. CONTRACT DOCUMENTS

A. Contract Documents, sometimes referred to as the "plans and specifications", shall mean and include the following parts as used herein:

1. Notice of Hearing and Letting
2. Instructions to Bidders
3. Proposal
4. Contract
5. Bond
6. General Conditions
7. Special Conditions
8. Plans List
9. Detailed Specifications
10. Plans listed in the Specifications
11. Numbered addenda issued to the foregoing.

3. METHOD OF BIDDING

- A. Bidders shall submit unit and lump sum prices for work covered by the plans and specifications. Prices shall cover complete work and include all costs incidental thereto, unless indicated otherwise.
- B. Bids will be computed using quantities shown on Proposal. Where unit price bids are called for, quantities are approximate and only for comparison of bids. Engineer retains right to change location, quantities and combination of units be required during progress of construction. Compensation due Contractor will be computed on basis of final quantities of completed work.
- C. Work on this project is divided into two (2) scopes based on property ownership. All work on National Park Service property is categorized separately and must be invoiced directly to the National Park Service.
- D. In the event of discrepancies between unit prices and unit price extensions listed in bidder's proposal, unit prices shall govern and unit price extensions shall be corrected, as necessary, for agreement with unit prices. The total price will be determined on the basis of corrected extensions of the unit price.
- E. Unit prices for payment items included in the specifications, but not listed in the Proposal, will be negotiated, if needed.

4. QUALIFICATIONS OF BIDDERS

- A. Bidders shall be prepared to satisfy Owner as to integrity, experience, adequacy of equipment and personnel, and financial ability to perform work specified.
- B. If successful bidder is a non-Iowa corporation, he shall submit proof to Owner prior to execution of contract that he has been authorized by Secretary of State to do business in Iowa.
- C. This bid requires registration with the System for Award Management (SAM) prior to award, pursuant to applicable regulations and guidelines. Registration information can be found at www.sam.gov.

5. SUBMISSION OF BIDS

- A. Bidders shall submit the Proposal stamped "Official Bid" and the Proposal stamped "Engineer's Copy". The Proposal stamped "Official Bid" is considered the original Proposal and shall be used for bidding. The copy of the Proposal stamped "Engineer's Copy" is for the use of the Engineer. The copy of the Proposal stamped "Bidder's Copy" is for the use of the Bidder. Submit in a sealed envelope. Envelope shall bear return address of the bidder and shall be addressed as follows:

To:

City Clerk
City of West Branch
110 Poplar Street
West Branch, IA 52358

Proposal for:

Main Street Sidewalk – Phase 2

- B. Bids shall be signed by a legally authorized representative of the bidder.
- C. Bidders shall submit the Bidder Status Form with the Proposal.
- D. Bidders shall submit the specified bid security with the Proposal.

6. EVALUATION OF BIDS

- A. Award of contract will be made on the lowest, responsive, responsible bid that is in the best interest of the City of West Branch.

- B. Time of completion of the work, delivery dates, experience and responsibility of the bidder will be considered in determining which bid is in the Owner's best interests.
- C. Low bid will be determined on basis of lowest responsive bid from responsible bidder for total project including City of West Branch and National Parks Service (NPS) scopes of work.

7. WITHDRAWAL OF BIDS

- A. A bidder may withdraw his bid at any time prior to scheduled closing time for a receipt of bids, but no bid shall be withdrawn for a period of 30 calendar days from the date of receiving bids.

8. BID SECURITY

- A. Each bid shall be accompanied by bid security in the form and amount set out in the Notice of Hearing and Letting.
- B. Bid security shall be enclosed in the sealed envelope with the bid or in a separate sealed envelope.
- C. The bid security shall be forfeited and become the property of the Owner in case the Bidder fails or refuses to enter into contract and to furnish bond within 10 calendar days after his proposal shall have been accepted.
- D. Bid security of the unsuccessful bidders will be returned as soon as the successful bidder is determined or within 30 calendar days, whichever is sooner; bid security of successful bidder will be returned upon execution of contract and furnishing of bond.
- E. Bidders shall use bid bond form included with specifications.

9. EXAMINATION OF WORK

- A. Bidders shall familiarize themselves with the specifications and with all conditions which will affect construction. It will be assumed that bidders have made a personal examination of the job and the physical conditions affecting the work.

10. EXECUTION OF CONTRACT

- A. The successful bidder shall enter into a written contract with the Owner, within 10 days after acceptance of his proposal on the forms included with these specifications, for the performance of the work awarded to him.
- B. The contract, when executed, shall be deemed to include the entire agreement between the parties hereto, and the Contractor shall not claim any modification thereof resulting from any representation or promise made at any time by any representative of the Owner or any other person.

11. CONTRACT TERMINATION

- A. Provisions of law, as contained in Chapter 573A of the Code of Iowa shall apply to and be a part of this contract. Chapter 573A provides for termination of contracts for construction of public improvements when construction or work thereon is stopped because of a national emergency. The provisions of Chapter 573A shall be binding upon all parties thereto, including subcontractors and sureties upon any bond given or filed in connection therewith.

12. TAXES

- A. The City will issue a sales tax exemption certificate for all materials purchased on the project. The City will issue the appropriate tax exemption certificates and authorization letters to the Contractor and all subcontractors completing work on the project. Tax exemption certificates are applicable only for the specific project for which the tax exemption certificate is issued.
- B. Contractor shall provide a listing to the City identifying all appropriate subcontractors qualified for use of the tax exemption certificate. Contractor and subcontractors may make copies of the certificate and provide, to each supplier providing construction material, a copy of the tax exemption certificate.
- C. Successful bidder is subject to payment of Iowa income tax on income from this work in amounts prescribed by law. If successful bidder is a non-Iowa partnership, individual or association, he shall furnish evidence prior to execution of contract, that bond or securities have been posted with the Iowa Department of Revenue in the amount required by law.

13. PREFERENCE FOR LABOR AND MATERIALS

- A. By virtue of statutory authority, preference will be given to products and provisions grown and coal produced within the State of Iowa, and to Iowa domestic labor, to the extent lawfully required under Iowa Statutes; provided that the award of contract will be made to the lowest responsible bidder submitting the lowest responsive bid. The Iowa Reciprocal Preference Act (SF 2160) applies to the contract with respect to bidders who are not Iowa residents.
- B. The Iowa Reciprocal Preference Act (SF2160) applies to the contract with respect to bidders who are not Iowa residents.
 - 1. In accordance with the requirements of the Iowa Department of Labor all bidders must submit a fully completed Bidder Status Form. The Bidder Status Form must be included with and is considered an essential attachment to the Quotation. Any Quotation that does not include a fully completed Bidder Status Form may result in the Quotation being determined non-responsive.

14. PAYMENT

- A. Payment will be made in accordance with the payment provisions set out in Notice of Hearing and Letting.
- B. Payment will be made on the basis of estimates prepared by Contractor and approved by Engineer, solely for the purpose of payment; approval by Engineer shall not be deemed approval of workmanship or materials.
- C. Payment requests for work located on NPS property must be invoiced separately and must be submitted electronically through the U.S. Department of the Treasury's Internet Payment Platform System (IPP). The IPP website address is: <https://www.ipp.gov>. The contractor must use the IPP website to register and use IPP for submitting requests for payment. The Contractor Government Business Point of Contact as listed in SAM will receive enrollment instructions via email from the Federal Reserve Bank of Boston (FRBB) within 3 to 5 business days of the contract award date. Contractor assistance with enrollment can be obtained by contacting the IPP Production Helpdesk via email ippgroup@bos.frb.org or phone (866) 973-3131.

15. APPROVAL OF MATERIALS

- A. Approval of substitutions of any materials or equipment other than that specified shall be obtained in writing from Engineer. Otherwise, it will be assumed Contractor will furnish materials or equipment specified.

16. PERIOD OF GUARANTEE AND BOND

- A. Contractor shall guarantee work for period of four (4) years from date of final acceptance as provided for in the Code of Iowa. Surety bond furnished by Contractor shall run for a like period.

PROPOSAL

MAIN STREET SIDEWALK – PHASE 2
WEST BRANCH, IOWA

Name of Bidder _____

Address of Bidder _____

To: City Council
City of West Branch
110 Poplar Street
West Branch, Iowa 52358

The undersigned bidder submits herewith bid security amounting to five percent (5%) of the total amount of the bid which shall become the property of the City of West Branch should the undersigned fail or refuses to execute a contract and to furnish bond as called for in the specifications within the time provided.

The undersigned bidder, having examined the Contract Documents, and having familiarized himself with the nature and location of the work to be done and the conditions under which the work will be performed, hereby proposes to provide the required labor, services and materials and to perform the work described in the specifications, and addenda __, __, __, __ and __, within the time and for the sum or sums stated hereinafter on attached proposal schedule, which proposal schedule is hereby made a part of this Proposal.

The undersigned bidder certifies that this proposal is made in good faith, without collusion or connection with any other person or persons bidding on the work.

The undersigned bidder states that this proposal is made in conformity with the specifications and agrees that in the event of any discrepancies or differences between any conditions of his proposal and the specifications prepared by VEENSTRA & KIMM, INC., that the provisions of the latter shall prevail.

Bidder _____

By _____

Title _____

PROPOSAL SCHEDULE

MAIN STREET SIDEWALK – PHASE 2

1. Construct Main Street Sidewalk – Phase 2 for the following unit and lump sum prices:

A. City of West Branch

	<u>Description</u>	<u>Unit</u>	<u>Estimated Quantity</u>	<u>Unit Price</u>	<u>Extended Price</u>
1	Mobilization	LS	xxxxx	xxxxx	\$ _____
2	Construction Staking	LS	xxxxx	xxxxx	_____
3	Traffic Control	LS	xxxxx	xxxxx	_____
4	Pavement Removal			\$ _____	_____
4.1	PCC Pavement	SY	203	_____	_____
4.2	Sidewalk	SY	301	_____	_____
4.3	PCC Curb & Gutter	LF	382	_____	_____
4.4	HMA Pavement	SY	44	_____	_____
5	Removal & Reinstall Signs	Ea.	2	_____	_____
6	Fixture Adjustments			_____	_____
6.1	Water Valve	Ea.	3	_____	_____
6.2	Manhole	Ea.	2	_____	_____
7	Modified Subbase	CY	39.8	_____	_____
8	8" PCC Pavement	SY	203	_____	_____
9	HMA	Tons	17	_____	_____
10	6" PCC Sidewalk	SY	327	_____	_____
11	Curb & Gutter	LF	303	_____	_____
12	Detectable Warning – Curb Ramps	SF	100	_____	_____
13	Pedestrian Hand Rail	LF	29	_____	_____

CITY OF WEST BRANCH BID

(Items 1 – 13) \$ _____

B. National Park Service

	<u>Description</u>	<u>Unit</u>	<u>Estimated Quantity</u>	<u>Unit Price</u>	<u>Extended Price</u>
1	Pavement Removal				
1.1	PCC Pavement	SY	49	\$ _____	\$ _____
1.2	Sidewalk	SY	57	_____	_____
1.3	PCC Curb & Gutter	LF	72	_____	_____
1.4	HMA Pavement	SY	20	_____	_____
2	Removal & Reinstall Signs	Ea.	1	_____	_____
3	Signs & Installation	Ea.	2	_____	_____
4	Modified Subbase	CY	8.2	_____	_____
5	8" PCC Pavement	SY	49	_____	_____
6	HMA	Tons	7	_____	_____
7	6" PCC Sidewalk	SY	57	_____	_____

				<u>Proposal</u>	
	<u>Description</u>	<u>Unit</u>	<u>Estimated Quantity</u>	<u>Unit Price</u>	<u>Extended Price</u>
8	Curb & Gutter	LF	72		
9	Detectable Warning – Curb Ramps	SF	40		
NATIONAL PARK SERVICE BID					
(Items 1 – 9) \$					

C. Total Project Bid

City of West Branch Bid	\$	
National Park Service Bid	\$	
TOTAL BID	\$	

2. The work will commence within ten (10) calendar days after the date set forth in written Notice to Proceed. All work on the project shall be completed as set out in the Notice of Hearing and Letting.
3. Liquidated damages in the amount of Five Hundred Dollars (\$500.00) per consecutive calendar day will be assessed for each day that the work shall remain uncompleted after the end of the contract period, with due allowance for extensions of the contract period due to conditions beyond the control of the Contractor.

Bidder Status Form

To be completed by all bidders

Part A

Please answer "Yes" or "No" for each of the following:

☐ Yes ☐ No

My company is authorized to transact business in Iowa.
(To help you determine if your company is authorized, please review the worksheet on the next page).

☐ Yes ☐ No

My company has an office to transact business in Iowa.

☐ Yes ☐ No

My company's office in Iowa is suitable for more than receiving mail, telephone calls, and e-mail.

☐ Yes ☐ No

My company has been conducting business in Iowa for at least 3 years prior to the first request for bids on this project.

☐ Yes ☐ No

My company is not a subsidiary of another business entity or my company is a subsidiary of another business entity that would qualify as a resident bidder in Iowa.

If you answered "Yes" for each question above, your company qualifies as a resident bidder. Please complete Parts B and D of this form.

If you answered "No" to one or more questions above, your company is a nonresident bidder. Please complete Parts C and D of this form.

To be completed by resident bidders

Part B

My company has maintained offices in Iowa during the past 3 years at the following addresses:

Dates: ____ / ____ / ____ to ____ / ____ / ____

Address: _____

City, State, Zip: _____

Dates: ____ / ____ / ____ to ____ / ____ / ____

Address: _____

City, State, Zip: _____

Dates: ____ / ____ / ____ to ____ / ____ / ____

Address: _____

City, State, Zip: _____

You may attach additional sheet(s) if needed.

To be completed by non-resident bidders

Part C

1. Name of home state or foreign country reported to the Iowa Secretary of State:

2. Does your company's home state or foreign country offer preferences to bidders who are residents? ☐ Yes ☐ No

3. If you answered "Yes" to question 2, identify each preference offered by your company's home state or foreign country and the appropriate legal citation.

You may attach additional sheet(s) if needed.

To be completed by all bidders

Part D

I certify that the statements made on this document are true and complete to the best of my knowledge and I know that my failure to provide accurate and truthful information may be a reason to reject my bid.

Firm Name: _____

Signature: _____ Date: _____

You must submit the completed form to the governmental body requesting bids
per 875 Iowa Administrative Code Chapter 156.
This form has been approved by the Iowa Labor Commissioner.

Worksheet: Authorization to Transact Business

This worksheet may be used to help complete Part A of the Resident Bidder Status form. If at least one of the following describes your business, you are authorized to transact business in Iowa.

- ☐ Yes ☐ No My business is currently registered as a contractor with the Iowa Division of Labor.
- ☐ Yes ☐ No My business is a sole proprietorship and I am an Iowa resident for Iowa income tax purposes.
- ☐ Yes ☐ No My business is a general partnership or joint venture. More than 50 percent of the general partners or joint venture parties are residents of Iowa for Iowa income tax purposes.
- ☐ Yes ☐ No My business is an active corporation with the Iowa Secretary of State and has paid all fees required by the Secretary of State, has filed its most recent biennial report, and has not filed articles of dissolution.
- ☐ Yes ☐ No My business is a corporation whose articles of incorporation are filed in a state other than Iowa, the corporation has received a certificate of authority from the Iowa secretary of state, has filed its most recent biennial report with the secretary of state, and has neither received a certificate of withdrawal from the secretary of state nor had its authority revoked.
- ☐ Yes ☐ No My business is a limited liability partnership which has filed a statement of qualification in this state and the statement has not been canceled.
- ☐ Yes ☐ No My business is a limited liability partnership which has filed a statement of qualification in a state other than Iowa, has filed a statement of foreign qualification in Iowa and a statement of cancellation has not been filed.
- ☐ Yes ☐ No My business is a limited partnership or limited liability limited partnership which has filed a certificate of limited partnership in this state, and has not filed a statement of termination.
- ☐ Yes ☐ No My business is a limited partnership or a limited liability limited partnership whose certificate of limited partnership is filed in a state other than Iowa, the limited partnership or limited liability limited partnership has received notification from the Iowa secretary of state that the application for certificate of authority has been approved and no notice of cancellation has been filed by the limited partnership or the limited liability limited partnership.
- ☐ Yes ☐ No My business is a limited liability company whose certificate of organization is filed in Iowa and has not filed a statement of termination.
- ☐ Yes ☐ No My business is a limited liability company whose certificate of organization is filed in a state other than Iowa, has received a certificate of authority to transact business in Iowa and the certificate has not been revoked or canceled.

BID BOND

KNOW ALL MEN BY THESE PRESENTS: That we, _____

_____ of _____ as Principal and _____

_____ of _____

as Surety, are held and firmly bound unto the City of West Branch, Iowa, hereinafter defined as Obligee, in the penal sum of five percent (5%) of the total amount of the bid (\$ _____), 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 City of West Branch, Iowa, a certain bid, in a sealed envelope, and hereby made a part hereof to enter into a contract in writing, for: Main Street Sidewalk – Phase 2.

NOW THEREFORE, if the said bid by said Principal be accepted, and the Principal shall enter into a contract with the Obligee in accordance with the terms of such bid, and give such 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 or in the event of the failure of the Principal to enter such contract and give such bond, the Principal shall pay to the Obligee 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 _____, 2015.

Principal

By _____
Contractor's Signature

Surety

By _____
Attorney-in-Fact

CONTRACT

THIS AGREEMENT, made and entered into this _____ day of _____, 2015, by and between the City of West Branch, Iowa, party of the first part, hereinafter referred to as the "Owner", and _____, party of the second part, hereinafter referred to as the "Contractor".

WITNESSETH: THAT WHEREAS, the Owner has heretofore caused to be prepared certain specifications and proposal blanks, dated the _____ day of _____, 2015, for Main Street Sidewalk – Phase 2, under the terms and conditions therein fully stated and set forth, and,

WHEREAS, said plans, specifications and quotation blanks accurately and fully describe the terms and conditions upon which the Contractor is willing to perform the work specified:

NOW, THEREFORE, IT IS AGREED:

1. That the Owner hereby accepts the Quotation of the Contractor for the work, as follows:

2. That this contract consists of the following component parts which are made a part of this agreement and contract as fully and absolutely as if they were set out in detail in this contract:

A. Contract Documents, including:

1. Notice of Hearing and Letting
2. Instructions to Bidders
3. Proposal
4. Bond
5. General Conditions
6. Special Conditions
7. Plans List
8. Detailed Specifications
9. Plans listed in the specifications
10. Numbered addenda issued to the foregoing.

B. This Instrument.

C. The above components are complementary and what is called for by one shall be as binding as if called for by all.

3. That payments are to be made to the Contractor in accordance with and subject to the provisions embodied in the documents made a part of this contract.

4. That this contract is executed in triplicate.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hand and seal the date first written above.

CONTRACTOR

CITY OF WEST BRANCH, IOWA

By _____

Mayor

Title _____

ATTEST:

ATTEST:

City Administrator

Title _____

BOND

KNOW ALL MEN: That we, _____,
of _____, hereinafter called the Principal, and
_____,
hereinafter called the surety, are held and firmly bound unto the City of West Branch,
Iowa, hereinafter called the Owner in the sum of _____
Dollars (\$ _____), for the payment whereof the Principal and Surety bind
themselves, their heirs, executors, administrators, successors and assigns, jointly and
severally, firmly, by these presents.

WHEREAS, the principal has, by means of a written Agreement dated _____,
2015, entered into a Contract with the Owner for Main Street Sidewalk – Phase 2, which
Agreement includes a guarantee of all work against defective workmanship and materials
for a period of four (4) years from the date of final acceptance of the work by the Owner, a
copy of which Agreement is by reference made a part hereof;

NOW, THEREFORE, the condition of this Obligation is such that, if the Principal shall
faithfully perform the Contract on his part and shall fully indemnify and save harmless the
Owner from all costs and damage which he may suffer by reason of failure so to do and
shall fully reimburse and repay the Owner all outlay and expense which the Owner may
incur in making good any such default,

And Further, that if the Principal shall pay all persons who have contracts directly with the
Principal for labor or materials, failing which such persons shall have a direct right of
action against the Principal and Surety under this Obligation, subject to the Owner's
priority,

Then this Obligation shall be null and void, otherwise it shall remain in full force and
effect.

Provided, however, that no suit, action or proceeding by reason of any default whatever
shall be brought on this Bond after five (5) years from the date of final acceptance of the
work.

And Provided, that any alterations which may be made in the terms of the Contract, or in
the work to be done under it, or the giving by the Owner of any extension of time for the
performance of the Contract, or any other forbearance on the part of either the Owner or
the Principal to the other shall not in any way release the Principal and the Surety, or
either of them, their heirs, executors, administrators, successors or assigns from their
liability hereunder, notice to the Surety of any such alteration, extension or forbearance
being hereby waived.

And Further Provided, the Principal and Surety on this Bond hereby agree to pay all
persons, firms, or corporations having contracts directly with the Principal or with
subcontractors all just claims due them for labor performed or material furnished, in the
performance of the Contract on account of which this Bond is given, when the same are
not satisfied out of the portion of the contract price which the Owner shall retain until
completion of the improvements, but the Principal and Surety shall not be liable to said
persons, firms, or corporations unless the claims of said claimants against said portions of
the contract price shall have been established as provided by law.

The Surety on this Bond shall be deemed and held, any contract to the contrary notwithstanding, to consent without notice:

- a. To the extension of time to the Principal in which to perform the Contract.
- b. To changes in the plans, specifications, or Contract, when such changes do not involve an increase of more than twenty percent (20%) of the total contract price, and shall then be released only as to such excess increase.
- c. That no provision of this Bond or of any other contract shall be valid which limits to less than five (5) years from the date of final acceptance of the work the right to sue on this Bond for defects in workmanship or materials not discovered or known to the Owner at the time such work was accepted.

The Bond is executed in triplicate.

Signed and Sealed this _____ day of _____, 2015.

PRINCIPAL:

Contractor

Signature

Title

SURETY:

Surety Company

Signature, Attorney-in-Fact

Name of Attorney-in-Fact

Company Name

Company Address (Including Zip Code)

Company Telephone Number

GENERAL CONDITIONS

MAIN STREET SIDEWALK – PHASE 2 WEST BRANCH, IOWA

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1. CONTRACT DOCUMENTS

- A. All documents listed or identified as part of contract are each and all essential and component parts of agreement between Owner and Contractor.
- B. Contract Documents shall be signed in triplicate by Owner and Contractor.
- C. Contract Documents are complementary, and what is called for by any one shall be as binding as if called for by all. The intention of documents is to include all labor and materials, equipment and transportation necessary for proper execution of work. It is not intended that materials or work not covered by or properly inferable from any heading, branch, class or trade of the specifications shall be supplied unless distinctly noted. Materials or work described in words,

which have a well known technical or trade meaning, shall be held to refer to such recognized standards.

2. SURETY BOND

- A. Contractor shall furnish a good and sufficient surety bond in full amount of contract prior to signing contract. Surety bond shall guarantee faithful performance of all provisions of contract and payment of all bills and obligations arising from said contract. Should surety become irresponsible during time contract is in force, Owner may require additional and sufficient sureties. Contractor shall furnish said additional sureties to satisfaction of Owner within ten (10) days after written notice to do so. In default thereof, contract may be suspended as hereinafter provided.

3. CONTRACTOR'S RESPONSIBILITY

- A. Contractor shall assume full responsibility for safekeeping of all materials and equipment and for all unfinished work until final acceptance by Owner. Materials and equipment which are damaged or destroyed from any cause shall be replaced at Contractor's expense.
- B. Contractor shall indemnify and save harmless Owner against any liens filed for non-payment of Contractor's bills in connection with contract work. Contractor shall furnish Owner satisfactory evidence that all persons who have done work or furnished materials, equipment, or service of any type, under the contract have been fully paid prior to acceptance of work by Owner.
- C. Contractor shall erect and maintain such barriers and lights as will prevent accidents as a consequence of its work. It shall indemnify and save harmless the Owner and its agents from all suits brought against Contractor for any injuries received or sustained by any person or persons by or through Contractor, its servants, or agents, in construction of work, or by or in consequence of any acts or omissions or negligence in performing contract work.
- D. Without limiting GENERAL REQUIREMENTS of Contract Documents, protect flag poles, sidewalks, streets, pavements, fences, pipe, conduit, utilities, trees, shrubs and structures not shown for removal.
- E. Cooperate with Owner, Engineer, and representative of utilities in locating underground utility lines and structures; incorrect, inaccurate or inadequate information concerning location of utilities or structures shall not relieve Contractor of responsibility for damage thereto caused by his operations.

4. SUBCONTRACTS

- A. Contractor shall not assign, sub-let or transfer the whole or any part of work herein specified without written consent of Owner. Assignment, sub-letting or transfer shall not relieve Contractor from its responsibilities set forth herein.
- B. Detailed specifications are separated into titled parts for convenience or reference and to facilitate letting of contracts and subcontracts. Such arrangement shall not obligate Engineer to establish limits on contracts between Contractors and subcontractors.

5. CONTRACTOR'S EMPLOYEES

- A. Contractor shall personally supervise its work or provide a capable superintendent satisfactory to Engineer. Superintendent shall be authorized to receive instructions from Engineer.
- B. Incompetent or incorrigible employees shall be dismissed by the Contractor or its representative when requested by Engineer. Such dismissed persons shall not be permitted to return to work without written consent of Engineer.
- C. Contractor shall give preference to local labor in execution of this contract, insofar as is practicable.

6. PERMITS AND REGULATIONS

- A. In execution of work specified herein, Contractor shall conform to regulations and ordinances of any governmental body which may apply in execution of specified work. Contractor shall obtain such permits and licenses as may be required for construction of work.

7. PATENTS

- A. All fees or royalties for patented inventions, equipment or arrangements used in construction or erection of work, or any part thereof, shall be included in contract price. Contractor shall protect and hold harmless Owner against any and all claims or litigation by reason of infringement of any patent rights on any materials, equipment of construction furnished by Contractor.

8. GUARANTEE

- A. Contractor shall guarantee all work against faulty workmanship and materials for the period specified after date of final acceptance of work by Owner unless otherwise set out in "SPECIAL CONDITIONS" or "INSTRUCTIONS TO BIDDERS." Contractor shall repair or replace any defective workmanship and materials in a manner acceptable to Owner, without expense to Owner, within ten (10) days after written notification by Owner of such defect. If said repairs or replacements are not made within ten (10) days, Owner may make said repairs or replacements and charge the cost to Contractor.
- B. Contractor shall provide Owner with a good and sufficient surety maintenance bond in the full amount of contract prior to signing contract. Maintenance bond shall run for the period specified from time of acceptance to protect Owner from faulty workmanship and materials as outlined in preceding paragraph.

9. SHOP DRAWINGS

- A. Contractor shall provide Engineer with drawings, data and information regarding materials or equipment specified, or as may be called for by Engineer, for its review, within a reasonable time after award of contract. After review, Engineer shall return to Contractor one copy within a reasonable time after receipt.
 - 1. Submit 5 copies of all shop drawing submittals.
- B. Fabrication and shipment of materials or equipment prior to Engineer's review of drawings, data and information mentioned above shall be at Contractor's risk.

10. THE ENGINEER

- A. Engineer shall make general observation of work as agent of Owner. Engineer's general observation shall not be construed that it shall direct or control operations of Contractor.

11. PLANS AND SPECIFICATIONS

- A. Engineer shall provide Contractor with five sets of plans and specifications after execution of contract. If additional plans and specifications are required, Contractor shall compensate Engineer for costs of printing.
- B. Engineer shall provide Contractor with additional and supplemental plans as may be required to show details of construction after approval of manufacturers' drawings and data on materials and equipment.

- C. Engineer will provide Contractor with such revised plans and specifications as may be required to show any authorized changes or extra work.

12. INTERPRETATION OF PLANS AND SPECIFICATIONS

- A. Plans and specifications shall be interpreted by Engineer. Its decision shall be final and binding on all parties concerned.
- B. Contractor will not be allowed to take advantage of errors or omissions in plans and specifications. Engineer will provide full instructions when errors or omissions are discovered.

13. LINE AND GRADE

- A. Engineer shall provide stakes showing line and grade from bench marks, base lines and other reference points. Contractor shall provide competent men and tools, stakes and other materials as required to establish temporary or permanent reference marks in connection with the work. Contractor shall perform such detailed measurements and transfer elevations as required to properly lay out and construct work.
- B. Contractor shall carefully preserve all stakes and reference points against destruction and shall promptly notify Engineer of any stakes which have been disturbed. In case of willful or careless destruction, Contractor will be charged for expense and damage from such destruction.

14. DECISIONS BY ENGINEER

- A. Engineer shall make decisions, in writing, on claims between Contractor and Owner within a reasonable time after presentation. Such decisions shall be regarded as final except for appropriate legal recourse.

15. WORKMANSHIP AND MATERIALS

- A. All work done and all materials and equipment furnished by Contractor shall conform to plans and specifications. Competent labor and tradesmen shall be used on all work. Experienced manufacturers' representatives shall be used to supervise installation of equipment.
- B. In absence of detailed specifications in other sections, all materials shall conform to standards of American Society for Testing Materials.

- C. Wherever items of materials or equipment are specified by a manufacturer's name and type, or equal, it is the intent that materials or equipment of other manufacturers, equal in quality and performance, may be substituted. Such substitution may be made only with written authorization of Engineer.
- D. Wherever items of materials or equipment are specified by a manufacturer's name and type, or equal, and additional features of items are specifically required by specifications, additional features specified shall be provided whether or not they are normally included in standard manufacturer's items listed.
- E. Wherever items of materials or equipment are specified by a manufacturer's name and type, or equal, and specified items are or become obsolete and no longer available, Contractor shall provide acceptable equal items which are currently available at no change in contract price.
- F. When proposing "or equal" items or substitutions, Contractor shall furnish general arrangement drawings, full descriptive data, manufacturer's specifications and such performance data as required to satisfy Engineer that materials or equipment proposed are equal to that specified. Burden of proof of equality shall be responsibility of Contractor.
- G. Whenever items of materials or equipment are specified by a manufacturer's name and type and "or equal" is not listed, Contractor shall provide specified equipment without substitution, unless prior approval of Engineer is obtained for any substitution.
- H. Contractor shall abide by Engineer's decision when proposed substitutes of material or equipment are deemed to be unacceptable and in such an event Contractor shall furnish items of equipment or materials specified.
- I. Engineer reserves right to consider such factors as overall project arrangement, overall project cost, and similar factors in determining whether proposed substitutions will be acceptable.

16. ON-SITE REVIEW OR OBSERVATION

- A. All materials used and all work done by Contractor shall be subject at all times to review, observation, tests and approval by Engineer. Contractor shall furnish samples of materials for observation and tests as requested by Engineer.

General Conditions

Contractor shall furnish any information required concerning nature or source of any proposed materials or equipment.

- B. Construction, fabrication and manufacture of equipment or materials specified herein may be observed by Engineer at plant or factory.
- C. Materials, equipment or work which do not satisfactorily meet specifications may be condemned by Engineer by written notice to Contractor. Condemned materials, equipment or work shall be promptly removed and replaced.
- D. Defective materials, equipment or work may be rejected by Engineer at any time prior to final acceptance by Owner even though said defective items may have been previously overlooked.

17. RESIDENT ENGINEER AND/OR ENGINEER TECHNICIANS

- A. Resident engineer and/or engineer technicians may be appointed by Engineer or Owner to insure that work is performed in accordance with plans and specifications.
- B. Resident engineer and/or engineer technicians shall have authority to notify Contractor in writing of work which is not being properly performed. Contractor shall be liable for any work determined by Engineer as not being properly performed.
- C. Resident engineer and/or engineer technicians shall have no authority to permit deviation from plans and specifications and Contractor shall be liable for any deviations made without written order from Engineer.

18. TESTS

- A. Tests shall be performed by Contractor upon materials and equipment specified, to determine if the materials and equipment meet requirements of specifications, conditions of operation and guarantees of Contractor.
- B. Equipment shall be subject to factory tests specified herein. Certified evidence of tests shall be furnished when requested by Engineer.
- C. Tests shall be made in accordance with standards of American Society of Mechanical Engineers, Institute of Electrical and Electronic Engineers, American Society for Testing Materials, and other recognized standards.

19. TIME

- A. Contractor shall commence work within time specified and shall complete work within time specified in contract.

20. DELAYS

- A. Delays caused by injunction or legal actions, damages by elements, or other causes beyond control of Contractor (of which Owner shall be sole judge) shall entitle Contractor to a reasonable extension of time within which to complete work.
- B. Application for extension of time shall be made to Owner by Contractor and shall state reasons for request for extension of time.
- C. No extension of time shall be valid unless made in writing by Owner.
- D. Normal weather conditions shall not form the basis of request for extension of time. Abnormal weather conditions shall form basis of request for extension of time only to the delay in excess of that resulting from normal weather conditions.

21. CHANGES

- A. Engineer shall have the right to make changes in location and quantities of work as may be deemed advisable with consent of Owner and without notice to sureties on Contractor's bond.
- B. No change shall be made under this paragraph which will increase or decrease total contract amount more than twenty percent (20%) of original contract price and no changes shall be made in plan of improvement that would necessitate additional or different construction processes and equipment.
- C. Amount due Contractor shall be adjusted for changes in following manner:
 - 1. Where unit prices have been bid, these unit prices shall be used to compute adjustment in compensation.
 - 2. Where no such unit prices have been bid, Engineer and Contractor shall negotiate a reasonable adjustment in Contractor's compensation. Limitations on compensation in 22.B. of "22. EXTRA WORK" shall apply to changes where compensation is negotiated.
 - 3. No changes shall be authorized unless they are shown on revised plans or in written instructions of Engineer.

4. Authorized changes which require additional time to complete shall entitle Contractor to proportionate extension of time to completion which shall be determined by Engineer.

22. EXTRA WORK

- A. Required extra work not specified under this contract shall be done at an agreed price satisfactory to Contractor and Owner, or on basis of actual cost of work plus not more than ten percent (10%) for Contractor's overhead and profit. Actual cost shall include expense for equipment, materials, and labor and shall include no overhead items or profit. Where extra work is done by a subcontractor, with approval of Owner, there may be included in Contractor's actual cost, ten percent (10%) for subcontractor's profit.
- B. The term "extra work" as used herein shall not be construed to apply to changes described in "21. CHANGES".
- C. No compensation shall be allowed Contractor for extra work unless such work has been authorized in writing by Engineer and approved by Owner.
- D. Contractor shall submit a statement of costs to Engineer for approval when extra work is performed on an actual cost plus basis. After such a statement is approved, Engineer shall certify its correctness to Owner.

23. OWNERSHIP OF MATERIALS

- A. All materials and work covered by partial payments shall become sole property of Owner, but this provision shall not be construed as relieving Contractor from sole responsibility for all materials and work for which payments have been made, for restoration of damaged work, or as a waiver of rights of Owner to require fulfillment of all terms of contract.

24. OTHER CONTRACTS

- A. Owner reserves right to let other contracts in connection with this work. Contractor shall afford other contractors reasonable opportunity for introduction and storage of their materials and execution of their work, and shall properly connect and coordinate its work with theirs.
- B. When proper execution of Contractor's work depends upon work of another contractor, it shall inspect other work and report any defects to Engineer. Contractor's failure to inspect and report shall constitute an acceptance of other

contractor's work except for defects which may develop in work after completion.

- C. To insure proper execution of its subsequent work, Contractor shall measure work already in place and shall at once report to the Engineer any discrepancy between the executed work and drawings.

25. OWNER'S RIGHT TO DO WORK

- A. If Contractor neglects to prosecute work properly or fails to perform any provision of this contract, Owner, after three (3) days' written notice to Contractor, may, without prejudice to any other remedy it may have, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor, provided, however, that Engineer shall approve both such action and amount charged to Contractor.

26. OWNER'S RIGHT TO TERMINATE CONTRACT

- A. Owner, upon certification of Engineer that there is sufficient cause to justify termination of contract, may, without prejudice to any other right or remedy, and after giving Contractor seven (7) days' written notice may terminate employment of Contractor for any of following reasons:
 - 1. Contractor makes a general assignment for benefit of its creditors, or if adjudged a bankrupt.
 - 2. Receiver is appointed on account of Contractor's insolvency.
 - 3. Contractor persistently or repeatedly fails or refuses, except when extension of time to complete is granted, to provide enough skilled workmen or proper materials.
 - 4. Contractor fails to make prompt payment to subcontractors for material or labor.
 - 5. Contractor persistently disregards laws and ordinances or instructions of Engineer.
 - 6. Contractor violates a provision of contract.
- B. If Owner terminates employment of Contractor, it shall take possession of premises and all materials, tools and appliances thereon. It shall finish work by whatever method it may deem expedient. In such case Contractor shall not be entitled to receive any further payment until work is finished.
- C. If unpaid balance of contract price exceeds expense of finishing the work including compensation for additional managerial and administrative services, excess shall be paid to Contractor. If expense exceeds unpaid balance,

Contractor shall pay difference to Owner. Expense incurred by Owner as herein provided, and damage incurred through Contractor's default, shall be certified by Engineer.

27. CONTRACTOR'S RIGHT TO STOP WORK OR TERMINATE CONTRACT

- A. If Engineer fails to issue any certificate for payment within fifteen (15) days after it is due, or if Owner fails to pay to Contractor within thirty (30) days of its maturity and presentation, any sum certified by Engineer, then Contractor may, upon seven (7) days simultaneous written notice to Owner and Engineer, stop work or terminate this contract. If Contractor elects to stop work by written notice, work shall be resumed promptly upon payment by Owner. If Contractor elects to terminate this contract by written notice it shall recover from Owner payment for all work executed to date of notice and any loss sustained upon any plant or materials plus a reasonable profit.

28. PAYMENTS WITHHELD

- A. Engineer may withhold or nullify the whole or a part of payment certificate, on account of subsequently discovered evidence, to such extent as may be necessary to protect Owner from loss on account of:
1. Defective work not remedied.
 2. Claims filed or reasonable evidence indicating probable filing of claims.
 3. Failure of Contractor to make payments properly to subcontractors or for materials or labor.
 4. A reasonable doubt that contract can be completed for balance then unpaid.
 5. Damage to another contractor.
 6. Claims of Owner for liquidated damages.
- B. Payments shall be made for amounts withheld when above grounds are removed.

29. ACCEPTANCE AND FINAL PAYMENT

- A. When work has been satisfactorily completed, Engineer will certify Contractor's final estimate stating that work has been completed in accordance with terms and conditions thereof with qualifications, if any, as stated. Balance found to be due Contractor according to the terms of payment shall be paid by Owner as provided in contract, provided, however, that any state laws which designate manner of final payment shall be followed in lieu of manner of final payment outlined above.

- B. Making and acceptance of final payment shall constitute a waiver of all claims by Owner, except those arising from unsettled liens, from faulty work or materials appearing after final payment or from requirements of the specifications, and of all claims by Contractor, except those previously made and still unsettled.

30. SUSPENSION OF WORK

- A. Owner may suspend the work, or any part thereof, at any time, by giving ten (10) days' written notice to Contractor. The work shall be resumed by Contractor within ten (10) days after date fixed in written notice from Owner to Contractor to do so.
- B. If work, or any part thereof, shall be suspended and if Owner does not give written notice to Contractor to resume work within one (1) year of date of suspension, Contractor may abandon suspended portion of work. Contractor will be entitled to estimates and payments for all work done on the portions so abandoned, if any.

31. CLEANING UP

- A. Contractor shall keep premises free from accumulations of waste material or rubbish caused by its employees or work. After completion of work it shall remove all its rubbish and all its tools, scaffolding and surplus materials from work site. It shall leave its work "broom clean" or its equivalent, unless more exactly specified. In case of dispute the Owner may remove rubbish and charge costs to Contractor as Engineer shall determine to be just.

32. HAZARDOUS MATERIALS

- A. The use of Asbestos Construction Building Materials (ACBM) is specifically prohibited. The Contractor, suppliers, and subcontractors shall warrant that all products used are asbestos free. In the event that a specified product contains asbestos, it shall be the responsibility of the Contractor to notify the Owner so that an appropriate substitution can be made in a timely manner so as not to delay the project.
- B. The Contractor shall provide the Owner a certificate that warrants that no materials, products, items or equipment contains any asbestos upon completion of the work of this Contract. If asbestos is found to exist in any of the materials, products, items or equipment provided as part of this Contract, the Contractor shall be financially responsible for all costs resulting from removal in

accordance with an Owner approved method and replacement of an asbestos free condition to finished drawings and specifications. The financial responsibility of the Contractor shall not terminate with the end of the surety maintenance bond period, but shall continue through the life of the facility.

33. IOWA HAZARDOUS CHEMICAL RISKS RIGHT-TO-KNOW LAW

A. Owner's responsibility:

1. Owner shall provide to the Contractor a list of known hazardous chemicals within the project site to which their employees may be exposed and suggestions for appropriate protective measures.

B. Contractor's responsibility:

1. Contractor shall inform his/her employees of the Iowa Hazardous Chemical Risks Right-to-Know Law.
2. Contractor shall provide to the Owner a list of known hazardous chemicals that they anticipate will be used on site as well as all pertinent information relating to employee protection. Contractor's Material Safety Data Sheets (MSDS) shall be available to Owner upon request.

SPECIAL CONDITIONS

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1. INTENT

- A. To supplement the provisions of the GENERAL CONDITIONS by outlining special conditions applicable to project.

2. LOCATION

- A. Work is located on
- B. Transportation facilities:
1. Interstate 80.
 2. County Highways X30 and F44.

3. RIGHT-OF-WAY

- A. Owner will provide easements for construction on private lands.
- B. Contractor will be provided list of construction easement widths.
- C. Confine movements of equipment and personnel, storage of materials, excavation, spoil banks, and all other construction operations within right-of-way and easements provided.
- D. Contractor will be held liable by City and adjacent property owners for damages outside right-of-way and easements; failure of Engineer to warn Contractor about incidence of trespassing does not relieve liability.

4. INTERRUPTIONS TO SERVICE

- A. Existing utilities shall remain in substantially continuous operation during construction.
- B. Do work which will interrupt utility service only at times approved by Engineer; hold interruptions of service to a minimum.

5. SERVICE FACILITIES

- A. Water, electricity, compressed air, and other services shall be furnished by Contractor to meet his own requirements.

6. STORAGE OF MATERIALS AND EQUIPMENT

- A. Limited storage space for materials and equipment will be available at project sites and along easements.
- B. Storage areas shall be subject to approval of Owner and Engineer.
- C. Store materials and equipment in manner which will preserve their quality and fitness.

7. CONSTRUCTION FACILITIES BY CONTRACTOR

- A. Provide telephone at which Contractor can be reached by Owner or Engineer at all times during the working day; provide liaison between telephone and construction personnel for expeditious handling of messages.
- B. Provide suitable storage buildings necessary for proper storage of materials and equipment.
- C. Location of all construction facilities, including project construction plant and yard, subject to approval by Engineer; remove all construction facilities upon completion of work.
- D. Provide and maintain suitable sanitary facilities for construction personnel for duration of work; remove upon completion of work.
- E. Provide fence, barricades, and/or watchmen to prevent access of unauthorized persons to site where work is in progress.

- F. Provide telephone number(s) at which responsible representative of Contractor can be contacted evenings, weekends and holidays in event of emergency.

8. INSURANCE BY CONTRACTOR

- A. Provide and maintain insurance throughout construction period in the following minimum amounts:
1. Workmen's compensation and occupational disease insurance in accordance with laws of the State of Iowa covering all employees who perform any obligations assumed under the contract.
 2. Public liability and property damage liability insurance covering all operations under the contract; limits of bodily injury or death not less than \$500,000 for one person and \$1,000,000 for each accident; for property damage, not less than \$250,000 for each accident and \$500,000 aggregate for accidents during the policy period.
 3. Automobile liability insurance on all self-propelled vehicles used in connection with the contract, whether owned, non-owned, or hired; public liability limits of not less than \$500,000 for one person and \$1,000,000 for each accident; property damage limit of \$500,000 for each accident.
- B. Provide addendum language attached to the Certificate of Insurance which preserves the Owner's immunities. The addendum language is as follows:

"The Companies affording coverage and the Additional Insured, City of West Branch, Cedar County, Iowa expressly agree and state that the purchase of this policy of insurance by the insured and the listing of the City of West Branch as an Additional Insured hereunder to not waive any of the defenses of governmental immunity available to the Additional Insured under Iowa Code Section 670.4 as it now exists and as it may be amended from time to time.

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

The Additional Insured 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 Companies.

The Companies shall not deny coverage under this policy and the Companies shall not deny any of the rights and benefits accruing to the Insured or the Additional Insured under this policy for reasons of governmental immunity

Special Conditions

unless and until a court of competent jurisdiction has ruled in favor of the defense(s) of governmental immunity asserted by the Additional Insured.”.

- C. Owner shall have right at any time to require public liability insurance and property damage liability insurance greater than required in above paragraphs. Additional premiums payable solely as result of such additional insurance shall be added to bid price.
- D. Furnish certificates of insurance to Engineer made in favor of Owner showing compliance with foregoing requirements.
- E. Owner shall be listed as an additional insured by endorsement.
- F. Notification in event of liability damage: upon occurrence of any event, the liability of which is herein assumed, Contractor agrees to forthwith notify Owner, in writing, such happenings, which notice shall forthwith give details as to the happening, cause as far as can be ascertained, estimate of loss or damage done, names of witnesses, if any, and stating amount of any claim.

9. EMPLOYMENT PRACTICES

- A. Contractor, or his subcontractors, shall not employ any person whose physical or mental condition is such that his employment will endanger the health and safety of himself or others employed on the project.

10. INSPECTION BY STATE AND FEDERAL PERSONNEL

- A. Provide full access and cooperation for inspection of work by representatives of participating State and Federal agencies.

11. HISTORICAL/ARCHAEOLOGICAL FINDS

- A. If, during course of construction, evidence of deposits of historical or archaeological interest is found, cease operations affecting find and notify Owner who shall notify Iowa Department of Natural Resources and Director and Historic Preservation Officer, State Historical Department, East 12th and Grand, Des Moines, Iowa 50319. No further disturbance of deposits shall ensue until notification by Owner that work may proceed. Owner will issue notice to proceed only after state official has surveyed find and made determination to Department of Natural Resources and Owner. Compensation to Contractor, if any, for lost time or changes in construction to avoid find, determined in accordance with changed conditions or change order provisions of specifications.

12. LINE AND GRADE

- A. Construct to line and grades shown on plans or as specified hereinafter.
- B. Engineer to establish required bench marks and control points as shown on plans.
- C. Contractor will perform detailed survey and staking for location, elevation and grade of construction.
- D. These conditions supersede conflicting provisions of GENERAL CONDITIONS.
- E. Check all detailed surveys and stakeouts; assume full responsibility for accuracy and correctness thereof.
- F. Contract shall provide, without extra compensation, all men and necessary tools to make all test holes and exploration, at any time, for purpose of determining location of existing structures beneath ground surface which might conflict with work of Contractor.
- G. Contractor shall preserve all monuments, reference points, stakes and bench marks set by Engineer. In case of destruction by Contractor's negligence or carelessness, he will be charged with resulting expense of replacement, and responsibility for any mistakes or loss of time caused thereby.

13. ORDER OF CONSTRUCTION

- A. Provide Engineer with proposed schedule of construction showing dates of starting and completing various portions of work.
- B. Contractor shall establish schedule of working hours for construction, subject to approval of Engineer.
- C. Schedule construction to minimize use of street barricades and detours; clean up each portion of work as it is completed.
- D. Adequate protection shall be provided for pedestrians. If a section of sidewalk is closed, appropriate signing and barricading shall be utilized; signing and barricading shall remain in place until sidewalk is reopened for pedestrian use.
- E. Notify City a minimum of 48 hours prior to closing street.

PLANS LIST

MAIN STREET SIDEWALK – PHASE 2 WEST BRANCH, IOWA

1. PLANS

- A. The work shall conform with the following drawings (bound separately) and Standard Drawings which constitute the "plans" and are an integral part of the Contract Documents.

<u>Title</u>	<u>Drawing Number</u>
Index and Title Sheet	A.01
Quantities & References	C.01
Demolition Plan	D.01
Plan	D.02
Plan – Notes	D.03
Control	G.01
Sidewalk Tabulations	S.01

Iowa Department of Transportation Standard Drawings

Detectable Warnings and Pedestrian Ramp	MI-220
Joints	PV-101
PCC Curb Details	PV-102
Manhole Boxouts in PCC Pavement	PV-103
Support Structures – Steel Breakaway Posts	
Rectangular Tube	SI-114

SUDAS Standard Specifications

Safety Rail	9080.103
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DETAILED SPECIFICATIONS

MAIN STREET SIDEWALK – PHASE 2 WEST BRANCH, IOWA

PART 1 – GENERAL REQUIREMENTS

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| 6. INFORMATION FOR ENGINEER | 13. BARRICADES AND LIGHTS |
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1. FORM

- A. Detailed specifications are in outline form and include incomplete sentences. Omission of words or phrases is intentional. Supply omitted words or phrases by inference.

2. INTENT

- A. To set forth requirements of performance, type of equipment or structure desired, and standards of materials and construction.
- B. To describe work set out in Contract Documents, unless otherwise specifically indicated.
- C. To require performance of complete work in spite of omission of specific reference to any minor component parts.
- D. To provide for new materials and equipment, unless otherwise indicated.

3. INTERPRETATION

- A. Report errors or ambiguities in specifications to Engineer as soon as detected; Engineer will answer questions regarding and interpret intended meaning of specifications; Engineer's interpretation shall be accepted as final.

4. WORK INCLUDED

- A. Furnish all materials, labor and equipment to construct Main Street Sidewalk – Phase 2 as set out in Notice of Hearing and Letting.

5. STARTING AND COMPLETION TIME

- A. Start work within 10 calendar days after date set forth in written Notice to Proceed. It is anticipated that Notice to Proceed will be issued within 30 calendar days after date of receiving bids. Complete work within the times set out in Notice of Hearing and Letting.

6. INFORMATION FOR ENGINEER

- A. After award of contract submit following information for Engineer's review. Total number of review copies required for distribution: 4 plus copies required by Contractor.
 - 1. Purchase orders and subcontracts without prices.
 - 2. Shipping papers for all materials.
 - 3. All materials test reports.
 - 4. Portland cement concrete mix design; submit 8 days before proposed mix is to be used.
 - a. Include certified gradation of aggregates to be used.
 - 5. Details of proposed method of sheeting, shoring and bracing.
 - 6. Manufacturer's specifications and catalog data for manholes, intakes, pipe, castings and other special items.
 - 7. Such other information as Engineer may request.
- B. Within 15 days after award of contract, provide construction schedule showing dates of starting and completing various portions of work.

7. SHOP DRAWINGS

- A. Intent of Engineer's review: to assist Contractor in interpreting plans and specifications.
- B. Contractor's responsibility: to check drawings prior to submission of coordination and conformance with contract; do not submit without checking.
- C. Engineer's review is only for general conformance with design concept of project and general compliance with information given in contract documents; any action shown is subject to requirements of plans and specifications; Contractor responsible for dimensions which must be confirmed and correlated at job site;

General Requirements

fabrication processes and techniques of construction; coordination of work with that of all other trades and satisfactory performance of work.

- D. Prior to submission of shop drawings and catalog data to Engineer: affix Contractor's stamp with signature of responsible person to show material submitted has been checked and approved by Contractor; shop drawings submitted without appropriate stamp and signature will be returned without Engineer's review.

8. PLANS AND SPECIFICATIONS

- A. Engineer will furnish up to 5 sets of plans and specifications after award of contract. Contractor shall compensate Engineer for printing costs for additional copies required.
- B. Subcontractors will be furnished copies only at request of Contractor. Engineer will be compensated for printing costs.
- C. Provide one set of plans and specifications for each foreman or superintendent in charge of each crew on job.

9. STANDARDS AND CODES

- A. Do work in accordance with best present-day installation and construction practices.
- B. Conform to and test materials in accordance with applicable sections of latest revisions or tentative revisions of following codes and standards unless specifically noted to contrary.
 - 1. American Association of State Highway and Transportation Officials (AASHTO).
 - 2. American Concrete Institute (ACI).
 - 3. American Institute of Steel Construction (AISC).
 - 4. American National Standards Institute (ANSI).
 - 5. American Society for Testing and Materials (ASTM).
 - 6. American Standards Association (ASA).
 - 7. American Water Works Association (AWWA).
 - 8. American Welding Society (AWS).
 - 9. Current Iowa Manual on Uniform Traffic Control Devices (MUTCD).
 - 10. Federal Specifications (FS).
 - 11. Iowa Department of Transportation (IDOT); latest edition of standard specifications and addenda.

General Requirements

12. Iowa Occupational Safety and Health Act of 1972 (Chapter 88, Code of Iowa 2015) (IOSHA).
13. Manual of Accident Prevention in Construction by Associated General Contractors of America, Inc. (AGC).
14. National Institute for Occupational Safety and Health (NIOSH).
15. National Safety Council (NSC).
16. Occupational Safety and Health Act of 1970 (Public Law 91-596) (OSHA).
17. Standards and codes of the State of Iowa, Cedar County and applicable local standards and codes of the City of West Branch.
18. Other standards and codes which may be applicable to acceptable standards of the industry for equipment, materials and installation under the contract.

10. TESTS

- A. Includes all material tests or tests specified hereinafter.
- B. Owner shall employ and pay for approved testing laboratory for tests required to show compliance with specifications.
- C. Provide samples of materials required for laboratory tests.
- D. Incorporate no materials in work until laboratory tests have been furnished which show compliance of materials with the specifications.
- E. All materials subject to sampling, testing, inspection and rejection at site by Engineer.
- F. Laboratory tests include the following:
 1. Ductile iron pipe: certify that pipe conforms to ANSI A21.51.
 2. Closed profile wall pipe: certify that pipe conforms to ASTM D1784.
 3. Cement: bin sample for entire requirement, ASTM C150.
 4. Concrete aggregates: one (1) sample of each, ASTM C33.
 5. Reinforced concrete pipe: test one (1) piece of each diameter of each class furnished; check reinforcing size and placement; ASTM C76.
 6. Other pipe: certify that pipe conforms to applicable specifications.
- G. Provide samples of excavated materials to determine moisture-density relations of soils and perform moisture and density tests during construction as specified in EARTHWORK AND INCIDENTALS FOR PAVEMENT; Contractor is to hire independent testing company to perform tests.
- H. Compaction tests on trench backfill: ASTM D1557; three (3) tests per 200 LF of embankment where compacted or ordinary backfill is specified; at each location

General Requirements

two (2) tests at intermediate depths as directed by Engineer and one (1) test at surface; cooperate with Engineer and provide necessary excavations to allow compaction tests to be taken; Contractor is to hire independent testing company to perform tests.

11. RESPONSIBILITY OF CONTRACTOR

- A. Protection of his work.
- B. Protection of all property from injury or loss resulting from his operations.
- C. Replace or repair objects sustaining any such damage, injury or loss to satisfaction of Owner and Engineer.
- D. Cooperation with Owner, Engineer and representatives of utilities in locating underground utility lines and structures. Incorrect, inaccurate or inadequate information concerning location of utilities or structures shall not relieve Contractor of responsibility for damage thereto caused by his operation.
- E. Keep cleanup current with construction operations.
- F. Maintain set of record drawings of any changes made as work progresses which may vary from contract drawings.
- G. Comply with all Federal, State of Iowa, Cedar County and City of West Branch, Iowa laws and ordinances.

12. TEMPORARY WORK

- A. Make all temporary connections necessary for maintaining utility service during course of work.
- B. Construct temporary drains or bulkheads to keep work in the dry.

13. BARRICADES AND LIGHTS

- A. Erect and maintain barricades and lights in conformance with current Manual of Uniform Traffic Control Devices (MUTCD) for protection and warning of pedestrians and vehicles. All barricades, lights and/or watchmen at expense of Contractor.
- B. Engineer will not allow work to proceed until all signs, barricades and lights are in place; requirements for type of signs and number of signs will be strictly enforced;

General Requirements

improper signing during construction will constitute "improper work" and Engineer will cause Contractor to suspend work.

- C. All signs, barricades, and other traffic control devices used on the project shall be furnished, installed and maintained by Contractor; all traffic control devices shall be maintained in a state of good repair and shall be cleaned and washed periodically as needed.
- D. Certain sections of public streets, sidewalks and trails can be closed with the following restrictions:
 - 1. Adequate protection shall be provided for pedestrians; if a section of sidewalk or trail is closed, appropriate signing and barricading shall be utilized; signing and barricading shall remain in place until sidewalk or trail is opened for pedestrian use.
 - 2. Notify City 48 hrs. prior to street, trail, or parking area closing.
- E. At the end of each working day place barricades and lights as required; maintain barricades and lights at all times including non-working hours; maintain lights in operable condition at all times.

14. FINAL REVIEW AND ACCEPTANCE

- A. Notify Engineer when installation is considered complete and ready for final review.
- B. Owner will accept work and make final payment to Contractor:
 - 1. When Engineer has certified that he has reviewed the work of the Contractor and stated that the work is complete and in conformance with the plans and specifications.
 - 2. When Contractor has filed with Owner or Engineer documents called for in specifications.
 - 3. When all government agencies involved have indicated, in writing, work is complete and acceptable.

PART 2 – SPECIAL CONSTRUCTION

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| 3. SURVEY MARKERS | 8. PAYMENT |
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1. GENERAL

- A. Procedures outlined below are not intended to fully cover all special procedures or emergencies which may arise during construction but are offered as an aid to Contractor in planning work; Contractor will cooperate with Owner and Engineer to minimize inconvenience and construction delays.
- B. Determine location of underground utilities and piping before starting work; locations of underground appurtenances are approximate and not guaranteed by Owner or Engineer.
- C. Remove and replace all signs, mail boxes, fences and other appurtenances which interfere with construction operations; replace damaged items at no cost to Owner.
 - 1. Maintain mail service to residents and businesses at all times.
- D. Remove and replace culverts as required for construction; if damaged, replace in kind with new culvert at no cost to Owner.
- E. Limit construction operations to property, right-of-way and easements provided by Owner; provide barricades, lights, signs and detours as necessary to reroute traffic around construction areas.
- F. Arrange with operating utilities for relocation or temporary removal of utilities in conflict with construction and for services needed during construction.
- G. Dispose of materials removed during construction at locations approved by Owner or Engineer.
 - 1. Dispose of waste products containing putrescible materials at approved landfill.
 - 2. Dispose of surfacing, broken concrete or rubble, brush, trees, excess excavated materials or spoil not suitable for backfill at site obtained by Contractor.

Special Construction

- H. Notify residents or businesses 2 days in advance when construction will disrupt or block access to property. Provide door hangers with notification.
- I. Remove, stockpile and replace fencing where required for construction as shown on plans; replace fences as work progresses.
- J. Provide snowfence along boundaries of construction area as specified hereinafter and as directed by Engineer.
 - 1. Install snowfence when area is prepared for excavation; install on steel posts with maximum spacing of 8'; maintain until work is completed.
 - 2. Provide snowfence around all open trenches or open structures when left unattended.
 - 3. Provide snowfence along boundaries of construction area in developed areas to prevent access of unauthorized persons to construction area.
- K. Clean up and provide surface restoration as construction progresses.
- L. Submit complete detailed construction procedure schedule after award of contract for planning, scheduling and controlling construction of project.
- M. Contractor will be expected to provide adequate personnel and equipment to perform work within specified time of construction.
- N. If delays in delivery of materials become apparent, notify Owner and Engineer promptly; take action to accomplish one of the following:
 - 1. Substitute alternate materials with approval of Owner and Engineer.
 - 2. Expedite delivery of materials.
- O. Extensions of contract period will be given consideration upon written request of Contractor; request must include valid supporting data and bona fide reasons for requesting extension; Owner expects work to be complete and ready for final acceptance within completion time specified.
- P. Maintain reasonable access to private properties along route of sidewalk unless property owners agree to other arrangements and Owner approves; provide temporary granular surfacing for access to private properties; cost of maintaining access is incidental to construction.

2. COOPERATION WITH OTHERS

- A. Advise all utilities prior to excavating in area where construction might affect gas, electrical, telephone or water service.

Special Construction

1. Advise telephone company of proposed construction schedule as it relates to telephone service.
 2. Advise power company of proposed construction schedule as it relates to electrical power.
 3. Advise gas company of proposed construction schedule as it relates to gas service.
 4. Advise Owner of proposed construction schedule as it relates to water and sewer mains including services.
 5. Advise cable television of proposed construction schedule as it relates to cable television service.
- B. Cooperate with State and Federal regulatory agencies in matters under their jurisdiction over construction operations.
- C. Cooperate with local governmental agencies; secure necessary building permits and arrange for inspections at proper time.

3. SURVEY MARKERS

- A. Contractor responsible for hiring registered land surveyor to inventory existing pipe, pins and registered survey lot corners disturbed by construction; land surveyor responsible for setting reference markers required to re-establish location of existing pipe, pins and registered survey lot corners. Replace in Accordance with Chapter 355 of the Iowa Code. Work is incidental to construction.

4. CONTAMINATED SOIL FINDS

- A. If during course of construction evidence of deposits of contaminated soils are found, cease operations affecting find and notify Owner who will notify Iowa Department of Natural Resources; no further disturbance of deposits will ensue until notification by Owner that work may proceed; Owner will issue notice to proceed only after contaminated soils have been identified and procedures for remediating contaminated soils have been identified and procedures for remedial action have been determined and approved by Iowa Department of Natural Resources and Owner; compensation to Contractor, if any, for lost time or changes in construction due to changed conditions will be in accordance with change order provisions of specifications.

5. WEATHER LIMITATIONS

- A. Owner will not pay extra for surfacing replaced prior to winter shutdown and removed at beginning of next construction season to expose temporary end of construction.
- B. Owner expects paving of improvements during suitable weather within contract time period; contract time period includes calendar days for inclement weather; contract time period will not be extended for claims of wet weather or freezing weather; Owner will consider suspension of contract time period for winter months only after completion of cleanup.

6. CONSTRUCTION STAKING

- A. Contractor responsible for providing all necessary construction staking to allow for project construction.
- B. Contractor responsible for accuracy and completeness of all construction staking.
- C. Owner or Engineer may review accuracy of construction staking at its own discretion at any time.

7. TRAFFIC CONTROL

- A. Provide barricades, signs and lights to protect vehicular and pedestrian traffic during construction; comply with GENERAL REQUIREMENTS; see plans for details.
- B. Conform to requirements of MUTCD and Iowa DOT.

8. PAYMENT

- A. No separate payment will be made for work covered under this part of the specifications except as set forth below. Include all costs in appropriate unit prices.
- B. Construction Staking, LS: Lump sum price includes all costs for labor, equipment and material to provide all construction staking and re-staking necessary for the complete construction of the project.
- C. Traffic Control, LS: Lump sum price includes furnishing signs, flagmen, barricades, flashers, channelizing devices, detour markers, and other

Special Construction

miscellaneous traffic control items specified or required by City of West Branch during construction; includes set up, removal and miscellaneous associated work.

- D. Mobilization, LS: Lump sum price includes all costs for transporting all necessary equipment and tools to and from site and cleanup of equipment and tools from site upon completion of work.

PART 3 – EARTHWORK AND INCIDENTALS FOR PAVEMENT

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| 4. SUBGRADE PREPARATION | 9. PAYMENT |
| 5. SUBGRADE TREATMENTS | |

1. GENERAL

- A. This part of the specifications includes earthwork and incidentals to complete grading for placement of pavement.
- B. Reference to percent maximum density shall mean a soil density not less than the stated percent of maximum density of optimum moisture content for soils as determined by ASTM D698 Moisture-Density Relations of Soils using 5.5-lb. Rammer and 12-in. Drop. (Standard Proctor Method).
- C. Do work in accordance with best present-day installation and construction practices.

2. SURFACE REMOVAL

- A. Remove existing surfacing to limits shown on plans.
 - 1. Cut vertically and horizontally on straight lines; saw cut full depth of surfacing.
 - 2. Portland cement concrete pavement: remove to nearest joint or as directed by Engineer and as shown on plans; cut steel as necessary.
 - 3. Sidewalk, and curb and gutter: remove existing concrete to nearest joint or as directed by Engineer and as shown on Standard Drawings or plan; use saw or other devices to cut smooth, even lines perpendicular to existing pavement surface.
 - 4. Asphalt pavement: cut to a neat line. Mill or grind asphalt paving to break up surface into particles that can be blended with granular subbase. Asphalt shall be processed such that 100% of the material is a nominal 2" maximum size. Material shall be of sufficiently stable quality to resist distortion during pavement construction.
 - 5. Milling of existing surfacing can include 2" asphalt surfacing and any depth of granular base material beneath paving that is required to facilitate milling operation. Milled pavement is to be blended evenly with existing granular base material and stockpiled for reuse beneath new paving.

6. If remaining surfacing along saw cut line becomes cracked or broken during construction, provide additional saw cuts, surface removal and surface replacement as directed by Engineer at no cost to Owner.
 - B. Dispose of waste and excess material not suitable for reuse at acceptable disposal area.
3. EXCAVATION
- A. Excavate all materials encountered to depth indicated or specified; comply with safety rules of state and federal governments. Excavate to subgrade required for pavement construction.
 - B. Schedule work to keep streets, roads and utilities in usable condition; avoid inconvenience to property owners insofar as practicable during construction.
 - C. Remove, replace and repair items such as fences, culverts, signs, hanging wires, shrubbery, flowers, trees and other obstructions to accommodate construction equipment or to facilitate excavation.
 - D. Remove trees, plantings and shrubbery where shown on plans; remove other plantings only with written authorization of Engineer; any plantings removed or damaged for convenience of Contractor: replace with equal plantings at no cost to Owner.
 - E. Dispose surplus excavated material as directed.
 - F. Provide temporary drainage facilities to prevent damage to public or private interests when necessary to interrupt natural drainage or flow of artificial drains.
 - G. Restore original drains as soon as work will permit.
 - H. Contractor liable for damage resulting from neglect to provide for interrupted natural or artificial drainage.
 - I. Do not damage pavement or disturb subgrade beneath existing pavement which will not be removed.
 - J. Grade and shape earth surfaces within grading limits to specified cross section; finish earth surfaces as specified hereinafter.

K. Install signing and barricades for traffic control in accordance with Manual on Uniform Traffic Control Devices; include cost in appropriate unit or lump sum Price.

L. Include all earthwork cost in unit price for Modified Subbase.

4. SUBGRADE PREPARATION

A. Provide uniform composition at least 6" below pavement subbase for full width of pavement plus 2' beyond edge of pavement; roll and scarify materials, mix and re-compact, or otherwise treat to produce a uniform condition.

B. Remove and dispose of stones over 4" in size from loosened portion of subgrade.

C. Construct subgrade with uniform density for a width of proposed pavement plus 2' beyond edge of pavement; density: not less than 95% maximum density.

D. In areas where roller cannot compact; provide approved selected material; 12" minimum thickness; compact to 95% maximum density with vibrator tamper.

E. Construct subgrade such that after rolling, surface will be at required grade and cross section.

F. Fill depressions that develop during rolling with suitable material; continue rolling until subgrade is uniformly firm, properly shaped and true to grade and cross section.

1. Maintain until pavement is placed.

2. Remove materials which will not compact readily under roller; replace with materials which will compact readily; again roll that portion of subgrade.

G. If ruts or other objectionable irregularities form in subgrade during construction, reshape and re-roll subgrade before placing pavement; fill ruts or other depressions with material similar to other subgrade material.

5. SUBGRADE TREATMENTS

A. Use only to correct subgrade condition where specified density cannot be obtained by other methods prior to placement of pavement.

B. Granular subbase for pavement: use uniform mixture of granular material, uniformly moistened, placed on prepared subgrade; Contractor may use as

suitable material to fill depressions in subgrade, such use considered incidental to construction at Contractor's expense.

1. Use crusher run limestone, crusher run sandstone, limestone screenings, soil aggregate, pit run gravel or a mixture of sand or pit run gravel with crushed limestone or limestone screenings.
2. Use mixture uniform in composition, with no visible segregation of constituent materials.
3. If constituent materials are proportioned, blend to homogeneous mixture before placing on subgrade.
4. Not more than 5% of finished mixture shall be retained on sieve having square openings equal to one-third nominal thickness of subbase and not more than 25% shall pass No. 200 sieve.

C. Lime subgrade treatment for concrete pavement:

1. Provide lime, 20 lbs. per square yard, in top 6" of subgrade.
2. Mix until uniform consistency is obtained; add water as required for optimum moisture content and compact to specified density.
3. Lime: use hydrated lime: ASTM C207, Type N.

6. MODIFIED SUBBASE

- A. Construct 6" thick modified subbase for full width of pavement plus 3' beyond edge of pavement.
- B. Comply with IDOT Section 2115, except 2115.05 and 2115.06.
- C. Includes 6" thickness for areas under PCC drive and sidewalks.

7. ABUTTING PAVEMENTS

- A. Drill into existing portland cement concrete slabs abutting new portland cement concrete construction and install dowels as detailed in IDOT Standard Road joint detail PV-101; dowels 18" long at 12" centers; ¾" dowels for 7" thick pavement; cost is incidental to pavement construction.

8. EXISTING UTILITIES

- A. Locations of utility lines, mains, cables and appurtenances are in accordance with information provided by utility companies and from records of Owner; confirm locations of underground utilities by excavating ahead of work; Contractor fully responsible for damage to utilities during construction.

Earthwork and Incidentals for Pavement

- B. Conflicting utilities not shown on plans, except services: notify Engineer immediately.
- C. Utility services are not generally shown on plans; protect services during construction.
- D. Water main and sanitary sewer conflicts: notify Owner and Engineer immediately; provide all necessary shut-down, repair and relocation where conflicts occur; furnish labor, equipment, pipe and fittings; when broken due to carelessness, repair is incidental to construction.
- E. Utility lines, poles and appurtenances, except water mains and sewer lines, in direct conflict with line and grade of work will be relocated by utility company before or during construction at no expense to Contractor unless plans direct Contractor to perform work; Owner will advise utility companies of lines, poles and appurtenances to be moved after award of contract; cooperate with utility companies in relocation of lines, poles and appurtenances.
- F. Support and protect, by timbers or other means, all utility pipes, conduits, poles, wires or other apparatus not to be moved; protective measures subject to approval of Engineer.
- G. No utility or utility service will be moved to accommodate equipment, method of operation or for convenience of Contractor when utility or utility services does not conflict directly with line and grade of work; arrange with utility company for relocation with approval of new location by Owner and Engineer; relocation is incidental to construction.

9. PAYMENT

- A. No separate payment will be made for work covered in this part of the specifications. Include all costs in appropriate unit price.
- B. Pavement Removal, SY or LF: Unit price includes full depth sawing, removal, trucking, salvage or disposal and miscellaneous associated work. Includes removal of HMA pavement, PCC pavement, curb and gutter, and sidewalk.
- C. Modified Subbase, CY: Unit price includes all labor, materials, and equipment necessary to excavate, furnish, place, compact and construct to finished subgrade at locations shown on plans, 6" in depth.

PART 4 – PORTLAND CEMENT CONCRETE PAVEMENT

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1. GENERAL

- A. This part of the specifications includes construction of portland cement concrete pavement, curb and gutter, and sidewalks, using preset forms on prepared subgrade or subbase.
 - 1. Prepare subgrade or subbase as specified in EARTHWORK AND INCIDENTALS FOR PAVEMENT.
 - 2. Construct curb and gutter as specified hereinafter.
- B. Non-reinforced portland cement concrete pavement includes deformed tie bars and joints as shown on plans.

2. MATERIALS

- A. Portland cement: ASTM C150, Type I.
- B. Admixtures:
 - 1. Air entraining: ASTM C260; no admixtures containing chlorides will be permitted.
 - 2. Retarding: a suitable retarding admixture may be used during hot weather, with approval of Engineer.
 - 3. Calcium chloride not permitted.
- C. Fine aggregate:
 - 1. Clean, hard, durable particles of natural sand, free from injurious amounts of silt, shale, coal, organic matter or other deleterious substances.
 - 2. Deleterious substances: not more than 2.0% shale and coal by weight retained on No. 16 sieve.
 - 3. Organic matter: other than coal, not more than standard reference color; ASTM C40.

4. Conform to following sieve analysis:

<u>Sieve Size</u>	<u>% Passing</u>
3/8"	100
No. 4	90-100
No. 8	70-100
No. 200	0-1.5

5. Percent passing one sieve and retained on next higher number sieve not more than 40% when sieved through 4 and 8 numbered sieves.
6. Mortar strength at 7 days not less than 1.5 times standard sand strength when tested in accordance with IDOT Laboratory Test Method 212.

D. Coarse aggregate:

1. Clean, hard, durable particles of crushed limestone free from injurious amounts of objectionable materials.
2. Objectionable materials not more than:

	<u>Percent</u>
Clay lumps	0.5
Coal and carbonaceous shale	0.5
Sticks (wet weight)	0.1
Total of all shale and coal combined	1.0
Organic material other than coal and sticks	0.0
Unsound chert particles retained on 3/8" sieve	3.0

- a. Chert particles breaking into three or more pieces in freezing and thawing test, IDOT Laboratory Test Method 211, Method A, are considered unsound.
3. Conform to following sieve analysis:

<u>Sieve Size</u>	<u>% Passing</u>
1-1/2"	100
1"	50-90
3/4"	30-80
1/2"	20-75
3/8"	5-55
No. 4	0-10
No. 8	0-5
No. 200	0-1.5

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4. Percent of wear, AASHTO T96, Grading A or B, not to exceed 35 for gravel, 50 for crushed stone which contains 90% or more calcium carbonate or 45 for all other crushed stone.
 5. Particle durability: IDOT Section 4115.04, Class 2 or Class 3.
- E. Water: clean and clear, free from salt, oil, acid, strong alkalis, vegetable matter or other substances injurious to concrete.
1. Water may be heated for cold weather paving operations; anti-freezing agents not permitted.
- F. Reinforcing steel:
1. Deformed bars: billet steel; ASTM A615, Grade 40 or 60; epoxy coated.
 2. Plain and smooth dowel bars: carbon steel; ASTM A615, Grade 40 or 60; epoxy coated.
 3. Welded wire fabric: ASTM A185.
- G. Metal expansion tubes:
1. Fabricated steel tubes; conform to requirements of IDOT; provide tubes with internal diameter 1/16" larger than dowel bar; bar stop capable of withstanding 20 lb. push, minimum.
- H. Metal keyways:
1. Fabricated 24 gauge sheet steel; conform to requirements of IDOT; provide lengths in multiples of tie bar spacing; punch to receive tie bars.
- I. Supports for reinforcing steel:
1. Support tie bars as required to place and maintain correct location during construction.
 2. Welded wire fabric supports: heavy gauge wire, welded or bent to form four-legged chair.
 3. Support dowel bars at expansion and contraction joints.
- J. Joints:
1. Bituminous joint filler and sealer: hot poured joint filler: ASTM D3405; use with backer rope; comply with IDOT 2301.25.
 2. Preformed expansion joint filler: asphalt saturated fiber strips; AASHTO M213; furnish in strips of plan dimensions; use IDOT preformed joint seal.
- K. Liquid curing compound: IDOT 4105.05; do not use in areas to receive asphalt overlay; use plastic or burlap.
- L. Plastic film: opaque, white pigmented polyethylene plastic, 0.00085" minimum thickness, use only once if less than 0.0034" thick.

- M. Fly ash: permitted as substitute for portland cement when source and mix design is in conformance with Iowa DOT Standard Specifications and Supplemental Specifications.

3. STORAGE AND PROTECTION OF MATERIALS

A. Aggregates:

1. Store fine and coarse aggregate in separate stockpile; avoid contamination of aggregates; place fine aggregate with more than 5.0% moisture in separate stockpile and allow to drain.
2. Stockpile coarse aggregate and unscreened gravel in horizontal layers; maximum depth: 4'.
3. Handle aggregates to avoid frequent variations in specific gravity, sieve analysis or moisture content; prevent variations of more than 0.5% in moisture content of aggregates in successive batches.
4. Coarse aggregate having absorption greater than 0.5%: wet 1 hr. before use.
5. Place fine aggregate in proportioning bin only when uniform moisture content can be maintained in successive batches for one day's run.

B. Cement:

1. Store cement in suitable weatherproof structure; prevent loss of cement during handling.
2. Use cement containing lumps only after careful screening through 20 mesh screen; retest in accordance with ASTM C150 before use.

4. PROPORTIONS FOR MIX

A. Mix proportions for street pavement, curb and gutter, drive approaches and sidewalks adjacent to street pavement:

1. Basic absolute volumes of materials per unit volume of concrete as per IDOT Section 2301.04:

	<u>M-4</u>	<u>C-4</u>
Cement Minimum	0.156	0.118
Water	0.160	0.160
Entrained Air	0.06	0.06
Fine Aggregate	0.312	0.331
Coarse Aggregate	0.312	0.331

2. Above quantities based on specific gravity of cement: 3.14; specific gravity of aggregates: 2.65; air voids: 6.0%.

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3. Air entraining admixture: produce $6.5\% \pm 1.5\%$ air voids in fresh concrete measured by pressure method.
 4. Use C-4 mix except use M-4 mix where shown on plans.
- B. Proportion adjustments:
1. Basis: when actual quantity of concrete is more than 101% or less than 99% of calculated quantity or if combination of materials does not produce quality of concrete specified.
 - a. Fine aggregate shall not exceed 50% of total aggregate in any adjustment.
 - b. Do not exceed maximum water-cement ratio specified.
- C. Water quantity and concrete consistency:
1. Use proper amount of mixing water to produce concrete of uniform consistency; adapt to mix, characteristics of materials used, methods of consolidation, weather conditions and slope of finished surface.
 2. Modify proportion if maximum water-cement ratio does not produce workability; increase cement to aggregate proportion to produce specified degree of workability without exceeding maximum water-cement ratio.
- D. Tests on trial batches and concrete placed at project site:
1. Slump: ASTM C143; 1-1/2" to 3" for machine finished concrete; 4", maximum, for hand finished concrete.
 2. Air voids, of fresh concrete, by pressure method: ASTM C231; $6.5\% \pm 1.5\%$.
 3. Minimum compressive strength: ASTM C39; 3,100 psi when tested at 3 days and 4,000 psi when tested at 28 days.
 4. Quantity of compression cylinders as specified in GENERAL REQUIREMENTS; cast, protect and cure cylinders in accordance with ASTM C31.

5. MIXING

- A. Batch mix:
1. Handle batches and charge mixer to insure complete introduction of batches separately without loss of materials; add water with other materials.
 2. Do not allow batch volume of mixed concrete to exceed mixer size designation number.
 3. Size designations: as shown in Concrete Mixer Standards of Mixer Manufacturers Bureau of Associated General Contractors of America, Inc. in effect at time of manufacture of mixer.
 4. If uniform concrete cannot be produced with maximum batch volume; reduce batch volume and/or increase mixing time.

- B. Ready-mix:
 - 1. Applies to either central plant-mixed concrete or central plant-proportioned, truck-mixed concrete.
 - 2. Time lapse from addition of water until placing on subgrade: not to exceed 30 min. when concrete is hauled in non-agitating trucks; 1-1/2 hrs. when hauled in truck mixers or agitating trucks; provide reliable re-set revolution counter on truck mixer.
 - 3. Place concrete in plastic and workable condition; do not re-temper partially hardened concrete.

6. EQUIPMENT REQUIREMENTS FOR PAVEMENT CONSTRUCTION

- A. Batch or ready-mix plant: IDOT 2001.06, 2001.20 and 2001.21.
 - 1. Automatic cut-off gates at cement batching scale not required.
 - 2. Scales and measuring devices certified at Contractor's expense.
- B. Concrete mixing equipment: IDOT 2001.21.
- C. Forms: IDOT 2301.07 A1 and A2.
- D. Form-line excavating machine: IDOT 2301.07 A5 or B1.
- E. Steel-shod template: IDOT 2301.07 A6 or B2.
- F. Consolidating and finishing equipment: IDOT 2301.07 A7 or B3.
- G. Equipment for hand methods: IDOT 2301.07 D and E.
- H. Alternate equipment and methods for finishing and consolidating pavement may be permitted by Engineer if satisfactory operation and construction on previous projects can be demonstrated.

7. PAVEMENT CONSTRUCTION

- A. Setting and removing forms:
 - 1. Set forms accurately to required grade and alignment on properly compacted subgrade or subbase; for forms to support mechanical subgrader, mechanical spreader, mechanical finisher or other similar heavy equipment, excavate with machine designed to shape subgrade for forms.
 - 2. Set base of form at or below subgrade elevation and with top of form at pavement surface elevation at edge of slab.
 - a. Extra height forms may be used to back up integral curb; set base at or below subgrade elevation and top of form at top of curb elevation.

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- b. Comply with IDOT 2301.9A if base of form is set below subgrade elevation; additional excavation and concrete at no cost to Owner.
 3. Secure forms in place to maintain grade and alignment while concrete is placed and finished.
 - a. If voids occur under forms, remove forms and bring special backfill to proper elevation as specified in EARTHWORK AND INCIDENTALS FOR PAVEMENT.
 - b. Check form joints with 10' straight edge; adjust forms to proper grade and alignment.
 4. If supporting soil becomes softened by rain or standing water so form is inadequately supported, reset form on suitable material before placing concrete.
 5. Oil forms before concrete is placed; prevent adherence of concrete.
 6. Leave side forms in place not less than 6 hours after concrete is placed; if form removal causes damage to concrete, leave remaining forms in place longer than 6 hours, as required.
 7. Remove forms with care to prevent cracking, spalling or overstressing concrete; remove form stakes prior to raising forms.
 8. Clean forms before resetting.
 9. Forms not required where abutting existing pavement.
- B. Concrete and steel placement:
 1. Uniformly moisten subgrade or place plastic film, specified hereinbefore, on prepared subgrade or subbase; lap plastic film 12", minimum.
 2. Adjust manhole and other castings within area to be paved to conform to finished surface; clean outside of casting.
 3. Place dowel and tie bars as shown on plans or specified; secure in position by approved method.
 4. Place concrete to full depth of pavement in single operation; do not pile concrete more than 8" above design elevation of surface; allow no segregation of material when concrete is deposited on subgrade.
 5. Carefully place concrete and subgrade to require minimum re-handling; minimize disturbance of reinforcement.
 6. Vibrate and consolidate to prevent formation of voids; do not displace or distort reinforcement.
- C. Finishing:
 1. Begin finishing operations promptly after concrete has been placed and consolidated.
 2. Screed surface to grade and crown shown on plans.
 3. Finish surface with 10' long lightweight float; finish from both sides simultaneously if pavement is placed to full width of street with one pass of paving machine.

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4. Provide uniformly gritty surface with Astroturf drag; round edges of pavement to 1/8" radius.
 5. Check pavement surface with 10' long straightedge; maximum permissible deviation: 1/8"; grind high spots, over 1/8", with carborundum grinding wheel.
- D. Construct joints as shown on Standard Drawings or plans, and specified; seal as specified hereinafter.
1. Provide transverse contraction joints every 15 LF of portland cement concrete pavement.
 2. Round edges of concrete adjacent to header boards and expansion joint material to 1/8" radius.
 3. Provide supplemental vibration adjacent to header boards and expansion joint material as required.
 4. Begin saw cutting as soon as concrete can be sawed without objectionable tearing of sawed edges; complete such work within 24 hours after concrete is placed.
 5. For weather conditions, end of day's work, or when 30 min. elapse between concrete placement, install header board and 3/4" smooth dowels 1'-3" long at 1'-6" spacing through header board; grease protruding ends prior to next concrete placement.
- E. Seal all joints before pavement is opened to Contractor's forces and general traffic; seal only dry and clean joint surfaces; slightly under-fill joints, keep sealer off of adjacent pavement.
1. Heat joint sealer to required temperature in thermostatically controlled heating kettle approved by Engineer; do not overheat.

8. CURING AND PROTECTION

- A. Apply liquid curing compound in fine spray to form continuous, uniform film on surface and vertical edges of pavement and curbs.
1. Apply compound with power sprayer, operating at 40 psi or less; rate of application: 0.03 gal. per square yard (1 gal. per 300 SF); do not dilute compound.
 2. Apply to pavement surface after finishing and after surface moisture has disappeared; apply to pavement edges within 30 min. after forms are removed.
- B. Apply plastic or burlap cover where liquid curing compound not permitted; keep continuously damp for 48 hours after placement of concrete.

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- C. Concrete pavement in place for less than 36 hours shall be protected during cold weather as follows:

<u>Forecast or Actual Temperature</u>	<u>Protection</u>
35° to 32°F.	One layer of burlap for concrete placed after October 1.
31° to 25°F.	Two layers burlap or one layer plastic film on one layer burlap.
Below 25°F.	One layer burlap or plastic film and 6" layer of straw or hay.

1. Burlap: AASHTO M182, Class 3.
2. Commercial insulation may be substituted for straw or hay, when approved by Engineer.
3. Protect straw, hay or insulation from disturbance by wind; leave in place for 5 days, minimum, or until pavement is opened to traffic.
4. Lap plastic film 18" at junctions.

- D. Concrete damaged by rain or freezing shall be removed and replaced at Contractor's expense.

9. RESTRICTIONS

A. Weather:

1. Place no concrete when stormy or inclement weather prevents good workmanship, when subgrade is frozen or if air temperature is 38°F. or below; use no aggregates containing frozen lumps.
2. With favorable weather conditions, start paving operations when temperature of concrete delivered to subgrade is 40°F. or higher.
3. Continue paving operations as long as concrete temperature requirement is met and air temperature remains above 38°F.

B. Night operation:

1. Place no concrete when darkness prevents good workmanship in placing and finishing.
2. Do not place or finish concrete under artificial light.

C. Use of pavement:

1. Time for opening pavement for use will be determined by results of tests on cylinders taken during concrete placement.

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2. Pavement may be opened to Contractor's forces after 2 days for purpose of removing coverings if tests of cylinders from section show compressive strength of 2,750 psi or higher.
3. Open pavement to general traffic when authorized by Engineer.
4. Concrete placed in cold weather may require additional curing time, as directed by Engineer; keep all vehicles off pavement until such curing time has been completed.

10. DEFECTS

- A. Pavement containing fractures, spalls, more than one random crack per panel or other defects: remove and replace at no cost to Owner; rout and seal random cracks including placement of saw cut and epoxy cemented tie bars at 30" centers transverse to crack where crack is 1/8" or wider.
- B. Water ponding deeper than 1/4" in gutter: remove and replace panel, or grind gutter in adjacent panels to drain; Owner reserves the right to select method of correcting defects at no cost to Owner.
- C. Remove and replace pavement more than 0.50" deficient in thickness.

11. SIDEWALK CONSTRUCTION AND DRIVEWAY APPROACH

- A. Conform to details shown on Standard Drawing and plans for driveway approaches and sidewalks; prepare subgrade as specified under EARTHWORK AND INCIDENTALS FOR PAVEMENT.
- B. Concrete materials:
 1. Portland cement, admixtures, fine aggregate and water; as specified for pavement.
 2. Coarse aggregate: as specified for pavement, except conform to following sieve analysis:

<u>Sieve Size</u>	<u>% Passing</u>
1-1/2"	100
1"	95-100
1/2"	25-60
No. 4	0-10
No. 8	0-5
No. 200	0-1.5

- C. Concrete mix: use IDOT Section 2301.04 C-4 mix as specified for street pavement. Use M-4 mix on driveways and on sidewalks in driveway areas as indicated on plans.

D. Concrete quality:

1. Minimum compressive strength: psi at 28 days: 4,000.
2. Water-cement ratio: gallons per sack, maximum, including water in aggregates: 6-1/2.
3. Cement contents: sacks per cubic yard, minimum: 6.
4. Admixtures: per manufacturer's recommendations.
5. Concrete mix: meet approval of Engineer.
6. Slump: 2" to 4"; measure according to ASTM C143.
7. Air entrainment: use for all concrete: 5% to 7%, measure in accordance with ASTM C231; number of tests as required by Engineer.
8. Concrete compression cylinders: two cylinders for each day's pour, or as directed by Engineer.

E. Curb ramps

1. Pedestrian curb ramps scheduled for installation or replacement shall comply with the requirements of the Americans with Disabilities Act.
 - a. Ramps shall contain a strip of detectable warnings measuring 2' in the direction of pedestrian travel and extend the full width of curb ramp.
 - b. Detectable warning strip shall be located adjacent to the curb and shall be constructed of contrasting color and texture; color to be selected by Owner.
 - c. Detectable Warnings shall be fiberglass panels as manufactured by Armor-Tile or equal.
 - d. See plans for details and location of pedestrian curb ramps.

F. Form setting and placing concrete:

1. Use wood or steel forms along edge of sidewalk; set true to line and grade and hold rigidly in place by stakes placed outside forms and flush with or below top edge of forms; form height equal to full specified depth of sidewalk; wood form minimum nominal thickness: 2".
2. Cross section: conform to type shown on plans.
3. Spreading: deposit concrete on subgrade in manner requiring as little rehandling as possible; prevent segregation of concrete when discharged; spread with shovels; do not walk on freshly mixed concrete with boots or shoes coated with earth or other foreign substances.
4. Construction joints: place at end of each day's work or any other time when process of depositing concrete is stopped for more than 30 min.; sections less than one division into which walk is being divided not permitted; construct construction joint using header board made from clean lumber having minimum 2" nominal thickness; set header board accurately and hold perpendicular to surface.

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5. Expansion joints: install transverse or longitudinal expansion joints whenever sidewalk or driveway concrete is placed against curb, driveway or pavement slab, existing sidewalk or structure; install expansion joint at property side of crosswalks in intersections and at intervals not greater than 100'; construct expansion joints by installing 1/2" thick strip of approved non-extruded, premolded joint material full depth of concrete; carefully trim any expansion joint material protruding above finished work to level or abutting concrete.

G. Concrete finishing

1. Place concrete to slightly overfill space between forms; spread immediately and consolidate with vibrator; smooth with straight edge; float with wooden float to depress large aggregate and create dense surface; after floating, allow to set until shine has disappeared from surface.
2. Use steel trowel or magnesium float to smooth concrete surface free from defects and blemishes.
3. Finish concrete edges with edging tool having radius of approximately 1/2".
4. Provide soft broom finish; broom at right angles to surfacing.

H. Cure and protect sidewalks and driveway approaches as specified for pavement.

I. Form removal

1. Timing: remove forms after initial set has taken place but not less than 6 hours after concrete has been placed; Engineer may vary minimum time according to weather and temperature conditions.
2. Concrete protection: backfill areas adjacent to concrete immediately after forms are removed or construct check dams or other protection to prevent saturation or erosion of subgrade under or near concrete.

J. Cleaning sidewalks and driveway crossings

1. Clean sidewalk or driveway immediately after end of curing period of all liter, construction materials and tools; remove excess dirt from site and broom sidewalk or driveway clean.

K. Restrictions on construction and use of pavement apply to sidewalks and driveway approaches.

12. PEDESTRIAN HANDRAIL

A. Furnish and install pedestrian handrail to lines and grades shown on the plans and as specified herein.

B. Materials:

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1. Handrails shall be 1 1/2 inch black pipe with welded connections ground smooth.
2. Handrail shall be fabricated after the ramp and landing pad are cast and shall have one shop coat and two field coats of aluminum paint.
3. Maximum post spacing shall be 5 feet.
4. Handrail shall be securely fastened to the landing pad, weld post to a 1/4 inch by 5 inch by 8 inch anchor plate and securely fasten to the landing pad with 2 3/8 inch diameter approved galvanized anchor bolts with 3 inch minimum length.
5. Field paint pipe handrail with 2 shop coats of satin black non-rust inhibiting enamel paint.

C. Installation:

1. If posts are to be set in concrete, they shall be set in a 1 1/2 inch diameter hole (2 1/2 inch for pipe rail), a minimum 6 inch depth, and the void filled with a commercial non-shrinking grout. An optional method of setting posts is to bolt posts to the tread with anchor bolts as specified herein and on the Standard Detail Plates.

13. PAYMENT

- A. No separate payment will be made for work covered under this part of the specifications except as set forth below. All other items are incidental to construction. Surfacing damaged by Contractor beyond removal limits replaced by Contractor at no cost to Owner.
- B. Concrete Curb and Gutter, LF: Unit price includes cost of equipment, labor, materials and incidentals necessary to complete work required for construction of new portland cement concrete curb and gutter as specified. Gutter thickness 6". Measurement based on length along back of curb.
- C. Sidewalk, SY: Unit price includes furnishing all labor, equipment and materials necessary to complete work required for removal of existing walks, construction of new portland cement concrete sidewalks including subgrade preparation, forming, reinforcing steel, placing, consolidating, testing, finishing, jointing, curing, and miscellaneous associated work including cleanup.
 1. 6" thick sidewalk sections through driveways will be paid for as 6" thick sidewalk; all other sidewalk including pedestrian curb ramps and thickened edges will be paid for as 6" thick sidewalk.
 2. Welded wire fabric not required for sidewalks.
 3. Detectable Warnings will be paid separately from the underlying sidewalk.

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- D. Portland Cement Concrete Pavement, SY: Unit price includes cost of equipment, labor and materials and incidentals necessary to complete work required for construction of new portland cement concrete pavement and driveways as specified and shown on plans.
- E. Detectable Warnings, SF: Unit price includes cost of equipment, labor and materials and incidentals necessary to complete work required for construction of detectable warnings in curb ramps as specified and shown on plans.
- F. Pedestrian Handrail, LF: Unit price includes cost of equipment, labor and incidentals necessary for the installation of railing.
 - 1. Measured along the centerline of the top rail from the outside edge of end post to outside edge of end post.
- G. Removal & Reinstall Signs, Ea.: Unit price includes cost of equipment, labor and materials and incidentals necessary to remove, store, and reinstall signs as specified on plans.
- H. Signs & Installation, Ea.: Unit price includes cost of equipment, labor and materials and incidentals necessary to furnish and install new signs as specified on plans.

PART 5 – HOT MIX ASPHALT PAVEMENT

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1. WORK INCLUDED

- A. Hot asphalt mix base, intermediate and surface mixtures of aggregate, mineral filler and asphalt binder; heated, mixed, spread and compacted to dimensions shown on plans.
- B. Construction of hot mix asphalt pavement on prepared subgrade or subbase.
- C. Preparation of subgrade; as specified in EARTHWORK AND INCIDENTALS FOR PAVEMENT.
- D. Meet requirements of IDOT Section 2303, except asphalt binder and samples will not be measured and paid for separately. Include in cost for hot mix asphalt pavement.
- E. Certified plant inspection not required
- F. Includes minor full depth HMA fillets at abutments to existing pavements.
- G. Includes roto milling existing pavement where shown on plans.

2. MATERIALS

- A. Asphalt binder:
 - 1. Petroleum asphalt binder, IDOT 4137.
 - 2. Performance grade asphalt PG 58-28.
- B. Other materials: meet requirements of IDOT Section 2303.02.

3. PAVING PLANT AND EQUIPMENT

- A. Meet requirements of IDOT Section 2303.02.F.

4. JOB MIXING FORMULA

- A. Certify that sources of aggregates and binder are IDOT approved. Provide analyses of samples of materials to be used.
- B. Base course: Type A 1/2" mixture size, 3M ESAL, min. 60% crushed particles.
- C. Surface course: Type A 1/2" mixture size, 3M ESAL, min. 60% crushed particles.

5. SURFACE PREPARATION

- A. Remove all loose and foreign material from pavement surface; provide clean surface for placement of asphaltic concrete paving mixture.
- B. Surface must be dry prior to application of tack coat and asphaltic concrete paving mixtures.
- C. Set grade of fixtures to finished pavement grade or side slope grade.

6. BASE AND SURFACE COURSES

- A. Spread with finishing machine in areas of uniform width.
- B. Adjust forward speed of finishing machine as necessary to provide least amount of stopping.
- C. Place in thicknesses as shown on plans.
- D. Use string line to maintain edge alignment.
- E. At exposed edges, slope base and surface courses at 45° from vertical; smooth and compress with finishing machine.
- F. Make provisions for clean, sharp edges by sawing or other means.
- G. Do not rake or disturb layer spread by machine; do all hand raking in area before placement with finishing machine.

- H. Allow all courses to cool to air temperature before placing additional course.
- I. Surfaces requiring three or more adjacent passes of finishing machine:
 - 1. Outer lanes laid first.
 - 2. Closure of surface made by interior lanes near centerline.
- J. Surfaces requiring two adjacent passes of finishing machine; complete to full width within 24 hours.
- K. Spread no more hot mix asphalt than can be finished in daylight hours.
- L. If surface of layer becomes dirty, clean and reapply tack coat, at no expense to Owner.
- M. Provide approved weight tickets for hot mix asphalt incorporated into pavement.

7. HANDLING AND DELIVERY

- A. Control handling and manipulation of hot mix asphalt paving mixture from mixer to final spread to maintain uniform composition; prevent segregation of course particles.
- B. Maintain continuous and uniform delivery rate to provide least amount of stopping of spreading unit.
- C. Keep all trucks covered when delivering asphalt mixture to job site.
- D. Do not use cleaning solutions such as kerosene, distillate or petroleum fractions over pavement surfaces.
 - 1. Do not carry such cleaning solutions on spreading unit.
 - 2. Wait 5 hours before using spreader unit after cleaning with above materials.
- E. Keep hand tools clean by heating and scraping.

8. HAND SPREADING

- A. Use hand method of spreading only in areas not accessible to finishing machine.
- B. Do not dump truckloads of hot mix asphalt paving mixture on area to be hand spread.
- C. Spread uniformly with hot rakes and shovels; smooth with lute.

- D. Use hand rakes designated for use with asphalt mixtures.
- E. Do not stand on loose mixture while raking.

9. ROLLING

- A. Roll each layer to proper density.
- B. Use power or driving roll for initial contact.
- C. Begin at edge and work toward centerline; reverse trip lapping 2/3 to 3/4 of previous track.
- D. Stagger ends of roller tracks not less than 3' in a manner that tracks will not hold water on surface.
- E. Do not pass roller over end of course unless laying has been discontinued.
- F. Following initial rolling, start intermediate rolling to close surface tears and voids.
 - 1. Roll entire area not less than four times.
 - 2. Roll until pavement has a density not less than 94% of density obtained in laboratory on mixture.
 - 3. Meet requirements of Class IC Compaction, IDOT Section 2303.03.D.

10. JOINTS

- A. Separate longitudinal construction joints between courses at least 3".
- B. Separate transverse construction joints at least 6'.
- C. Pave along longitudinal joints to secure closure of joint and full compression of mixture with smooth surface after compaction.
- D. Saw transverse joints at right angles to centerline of pavement.
- E. Provide paper or burlap under ramp at end of day's run.

11. SMOOTHNESS

- A. After second rolling, check base course and surface course with 10' straight edge in direction of rolling.

- B. For variations greater than 1/4" in base and binder courses and 1/8" in surface course: heat bumps to soften mixture; smooth with rakes; roll to obtain proper density.
- C. For depressions 1/2" and smaller: heat and loosen surface; add mixture free of coarse particles; lute to proper elevation and roll to obtain proper density.
- D. For depressions greater than 1/2": remove asphaltic concrete paving mixture; replace with fresh mixture; compact and roll to proper density.
- E. Pavement smoothness testing in accordance with IDOT Section 2316 is not required.

12. LIMITATIONS ON OPERATIONS

- A. Do not apply asphaltic concrete paving mixtures at pavement temperatures of less than 40°F.; do not apply to wet or damp surface.
- B. Place no asphaltic concrete paving mixtures between November 15 and April 15 of following year without written approval of Owner and Engineer.

13. SAMPLES

- A. Provide and test uncompacted samples of each mixture at location designated by Engineer in accordance with IDOT Section 2303.04.D.; split sample with Owner not required.
- B. Cut samples and test from any course or from finished pavement in accordance with IDOT Section 2303.04; cut additional samples as directed by Engineer if deficiencies occur in pavement thickness, density or stability.
 - 1. If cores taken are less than the specified thickness or density, adjustments in payment will be made in accordance with IDOT section 2303.06.
- C. Engineer will require changes in mix design, or placement and compaction procedures if asphalt mixture or pavement density fail to meet requirements specified.

14. PAYMENT

- A. No separate payment will be made for work covered under this part of the specifications, except as set forth below.

Hot Mix Asphalt Pavement

- B. Hot Mix Asphalt, Tons: Unit price includes furnishing labor, materials, equipment, sampling and testing, and incidentals for constructing paving as shown on plans; measurement based on delivery tickets at job site, subject to adjustment based on core samples.

PART 6 – STRUCTURES

INDEX

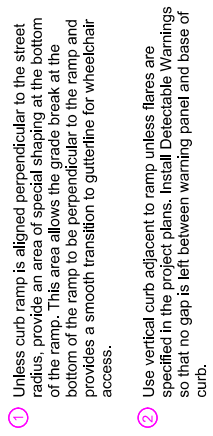
- 1. FIXTURE ADJUSTMENT
- 2. PAYMENT

1. FIXTURE ADJUSTMENT

- A. Set grade of manhole tops and valves to finished pavement grade or side slope grade.
- B. Salvage and reuse existing fixture castings.
- C. Use or remove manhole adjusting rings to bring casting to required elevation; maximum: 12"; make joints with bituminous jointing material to prevent entry of water.
- D. Reconstruct manholes when removal of all adjusting rings will not result in casting being low enough to meet required elevation of proposed pavement.
 - 1. Precast concrete manholes: remove manhole top cone section; replace top cone section with 1.0' or 3.0' cone section; provide barrel sections as necessary to adjust to finish grade; reinstall existing casting; reuse or provide adjusting rings as necessary; provide two adjusting rings minimum; maximum height of adjusting rings: 12"; make joints with bituminous jointing material to prevent entry of water.

2. PAYMENT

- A. No separate payment will be made for work covered in this part of the specifications except as set forth below. Contract unit prices include all costs for each item of work.
- B. Fixture Adjustment, Ea.: Unit price includes furnishing all labor, materials, and equipment for adjusting fixtures to finished pavement grade or side slope including removal and replacement of top cone section as necessary, adding or removing adjusting rings, waterproofing joints and reinstalling new casting.







SECTION B-B



TYPICAL INSTALLATION DETECTABLE WARNING
WITH CURBED ROADWAY

	Iowa Department of Transportation		REVISION
			5 10-16-12
<h1>STANDARD ROAD PLAN</h1>		<h1>MI-220</h1>	
		SHEET 2 of 3	
REVISIONS: Revised DETAIL B on page 2 and placed similar detail on PV-102. Modified DETAIL A on page 1.			
		APPROVED BY DESIGN METHODS ENGINEER	
		<h2>DETECTABLE WARNINGS</h2> <h2>AND PEDESTRIAN RAMP</h2>	

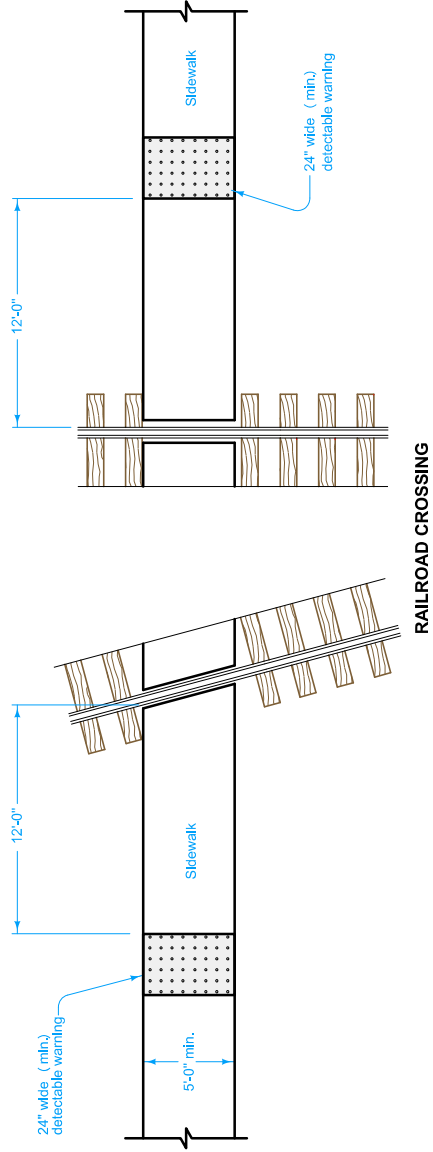
LEGEND


Ramp

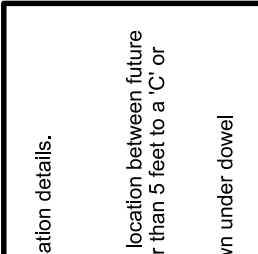
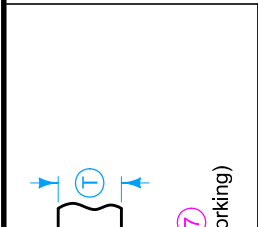
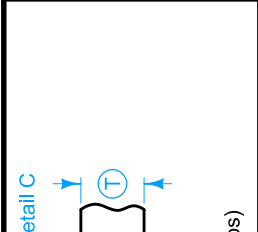

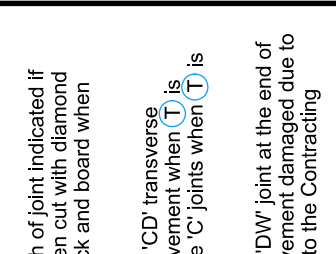
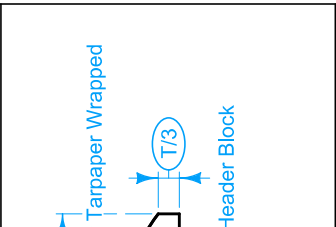
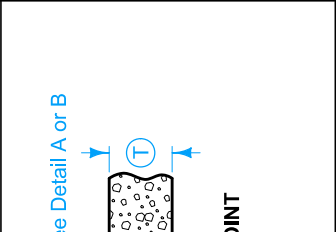

Landing

Detachable Warnings

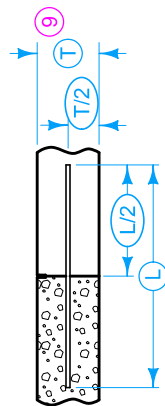
Vegetation



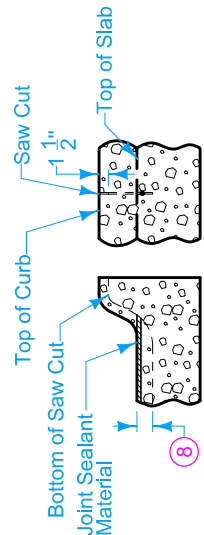
	Iowa Department of Transportation		REVISION	5	10-16-12
	MI-220				
	SHEET 3 of 3				
STANDARD ROAD PLAN					
REVISIONS: Removed DETAIL B on page 2 and placed similar detail on PW-102. Modified DETAIL A on page 1.					
APPROVED BY DESIGN METHOD ENGINEER <i>Diana M. M. M.</i>					
DETECTABLE WARNINGS AND PEDESTRIAN RAMP					

 <p>'B' (5) PLAIN JOINT (Abutting Pavement Slabs)</p>	 <p>'C' (6) CONTRACTION JOINT</p>	 <p>'CD' (1)(4)(6) DOWELED CONTRACTION JOINT</p>	 <p>'CT' (4) TIED CONTRACTION JOINT</p>	 <p>'DW' (3)(4)(7) DAY'S WORK JOINT (Non-working)</p>	 <p>'HT' (4)(5) HEADER JOINT (End Rigid Pavement)</p>	 <p>'RD' (4)(5) ABUTTING PAVEMENT JOINT</p>	 <p>'RT' (4) ABUTTING PAVEMENT JOINT RIGID TIE</p>	<p>1 See dowel assemblies for fabrication details.</p> <p>2 See Bar Size Table.</p> <p>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.</p> <p>4 Place bars within the limits shown under dowel assemblies.</p> <p>5 Edge with 1/4 inch tool for length of joint indicated if formed; edging not required when cut with diamond blade saw. Remove header block and board when second slab is placed.</p> <p>6 Unless otherwise specified, 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.</p> <p>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.</p>	<p>1 See Detail C</p> <p>2 30" Long Tie Bar at 12" Centers</p> <p>3 30" Long Tie Bar at 12" Centers</p> <p>4 18" Long Dowel at 12" Centers</p> <p>5 24" Long Tie Bar at 12" Centers</p>	<p>1 See Detail A or B</p> <p>2 18" Long Dowel at 12" Centers</p> <p>3 30" Long Tie Bar at 12" Centers</p> <p>4 24" Long Tie Bar at 12" Centers</p>	<p>1 See Detail A or B</p> <p>2 30" Long Tie Bar at 12" Centers</p>	<p>1 See dowel assemblies for fabrication details.</p> <p>2 See Bar Size Table.</p> <p>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.</p> <p>4 Place bars within the limits shown under dowel assemblies.</p> <p>5 Edge with 1/4 inch tool for length of joint indicated if formed; edging not required when cut with diamond blade saw. Remove header block and board when second slab is placed.</p> <p>6 Unless otherwise specified, 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.</p> <p>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.</p>	<p>1 See Detail C</p> <p>2 30" Long Tie Bar at 12" Centers</p> <p>3 30" Long Tie Bar at 12" Centers</p> <p>4 18" Long Dowel at 12" Centers</p> <p>5 24" Long Tie Bar at 12" Centers</p>	<p>1 See Detail A or B</p> <p>2 18" Long Dowel at 12" Centers</p> <p>3 30" Long Tie Bar at 12" Centers</p> <p>4 24" Long Tie Bar at 12" Centers</p>	<p>1 See Detail A or B</p> <p>2 30" Long Tie Bar at 12" Centers</p>	<p>TRANSVERSE CONTRACTION</p>
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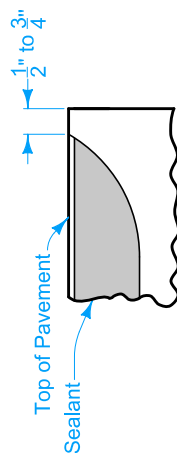
		REVISION 1 04-17-12
	STANDARD ROAD PLAN	PV-101 SHEET 1 of 8
REVISIONS: Added new note 2b. Added placement limits drawings on sheet 8.		
SUDAS DIRECTOR <i>Deanna McFadden</i>		
JOINTS		



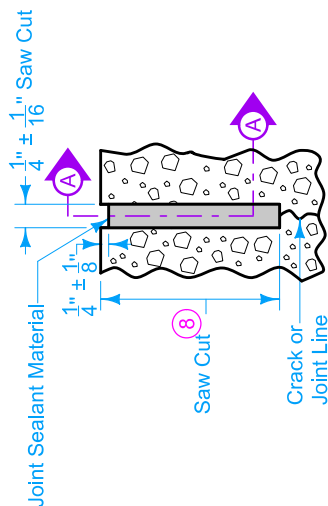
BAR PLACEMENT
(Applies to all joints unless otherwise detailed.)



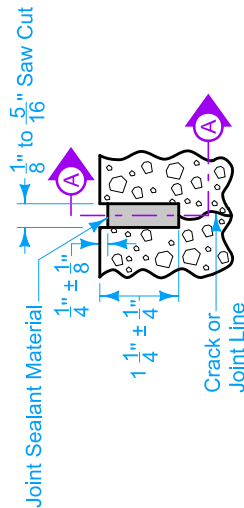
'C' JOINT IN CURB
(Match 'CT', 'CD', or 'C' joint in pavement.)



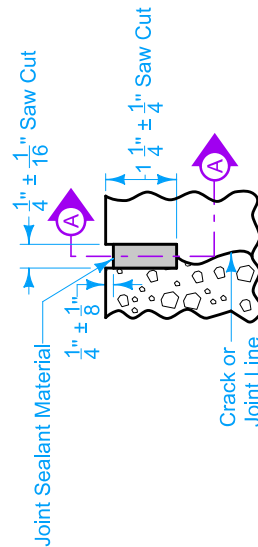
SECTION A-A
(Detail at Edge of Pavement)



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



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

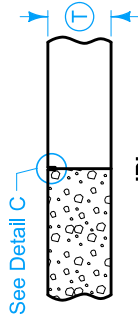


DETAIL C

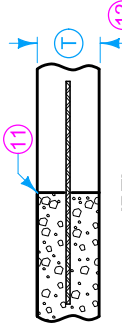
BAR SIZE TABLE		
T	Dowel Diameter	Tie Bar Size
< 8"	$\frac{3}{4}$ "	#6
≥ 8" but < 10"	$1\frac{1}{4}$ "	#10
≥ 10"	$1\frac{1}{2}$ "	#11

- 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, T represents the depth of sound PCC.

SUDAS	Iowa Department of Transportation	REVISION 1 04-17-12
	FIGURE 7010.101	PV-101 SHEET 2 of 8
REVISIONS: Added new note 28. Added placement limits drawings on sheet 8.		
<i>Paul D. Wiegand</i> SUDAS DIRECTOR <i>Deanna M. McNeil</i> DESIGN METHOD ENGINEER		
JOINTS		

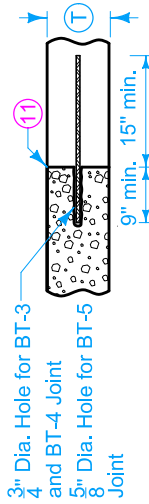


'B'
PLAIN JOINT
(Abutting Pavement Slabs)



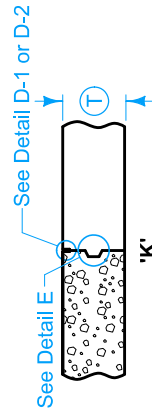
'BT'
ABUTTING PAVEMENT JOINT - RIGID TIE

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

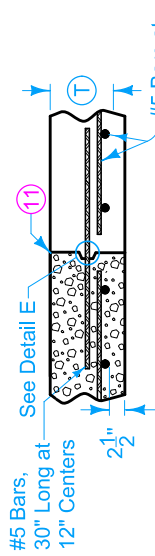


'BT'
ABUTTING PAVEMENT JOINT - RIGID TIE (Drilled)

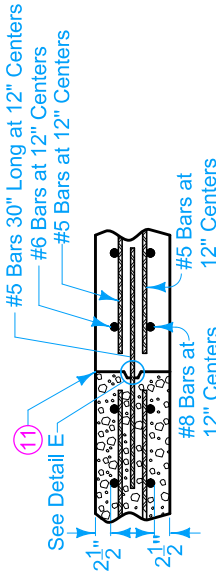
(T)	Joint	Bars	Bar Length and Spacing
< 8"	'BT-5'	#4	24" Long at 30" Centers
≥ 8"	'BT-3'	#5	24" Long at 30" Centers
	'BT-4'		24" Long at 15" Centers



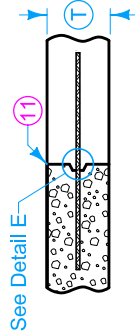
'K'
KEYED JOINT FOR ADJACENT SLABS
(Where T is 8" or more)



'KS-1'
[Single Reinforced Pavement (Bridge Approach)]



'KS-2'
[Double Reinforced Pavement (Bridge Approach)]



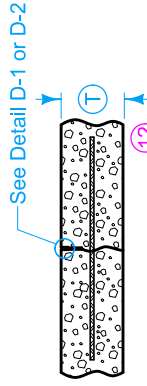
'KT'
ABUTTING PAVEMENT JOINT - KEYWAY TIE

(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

10 Bar supports may be necessary for fixed form paving to ensure the bar remains in a horizontal position in the plastic concrete.

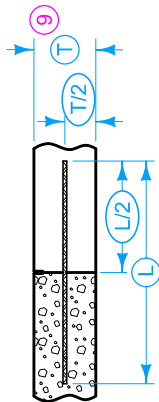
11 Sawing or sealing of joint not required.

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'

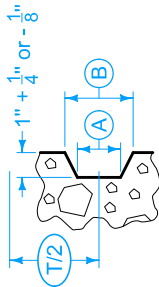


'L'
CONTRACTION JOINT

(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

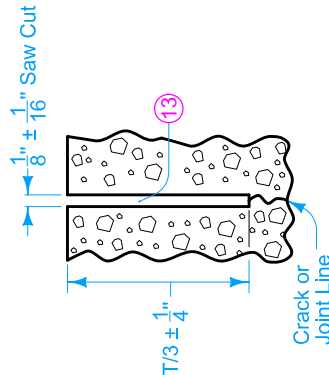


TIE BAR PLACEMENT
(Applies to all joints unless otherwise detailed.)

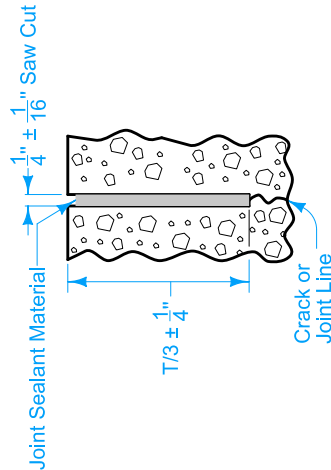


DETAIL E

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"



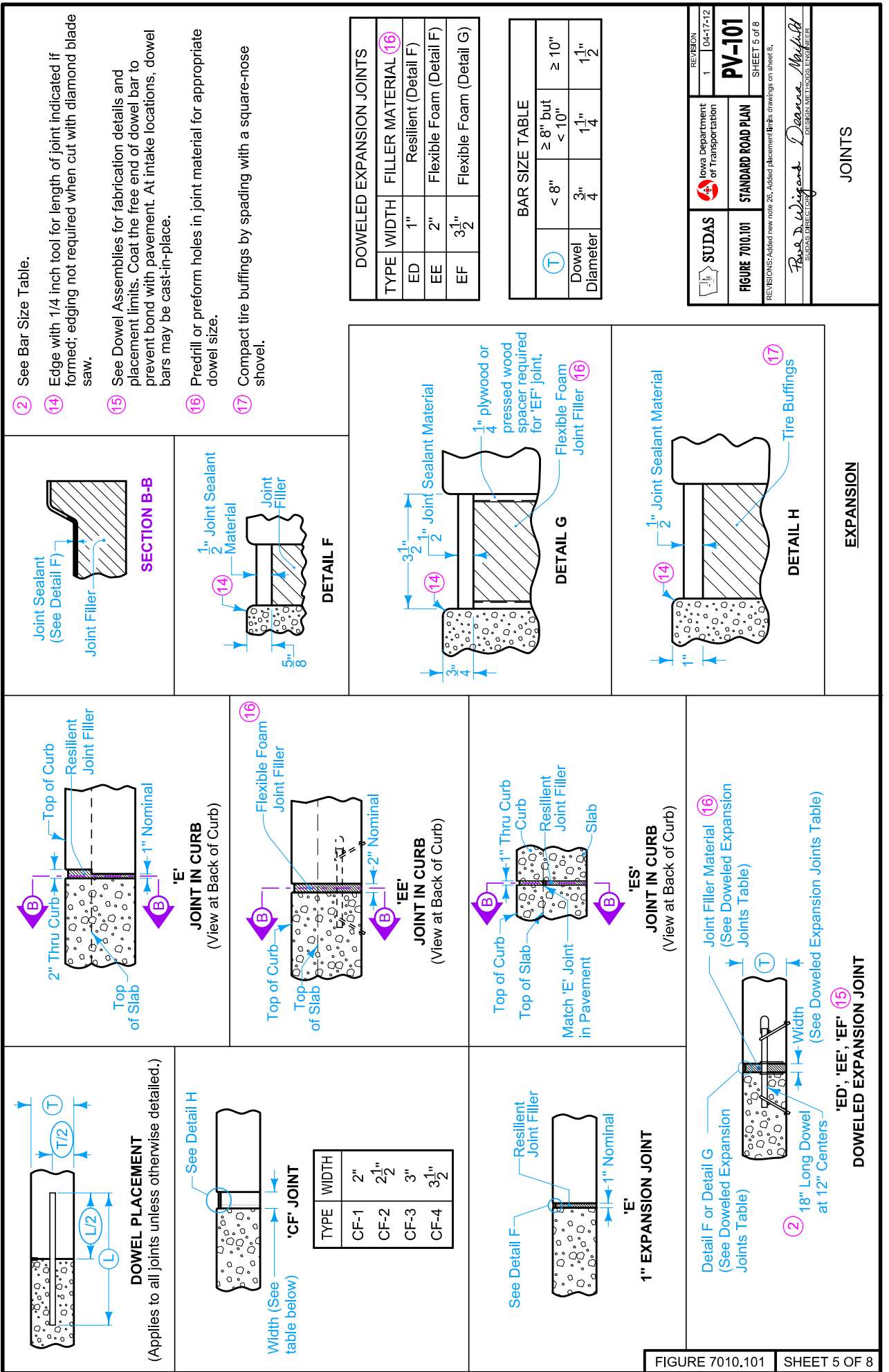
DETAIL D-1
(Required when the Department of Transportation is the Contracting Authority, or when specified in the contract documents.)



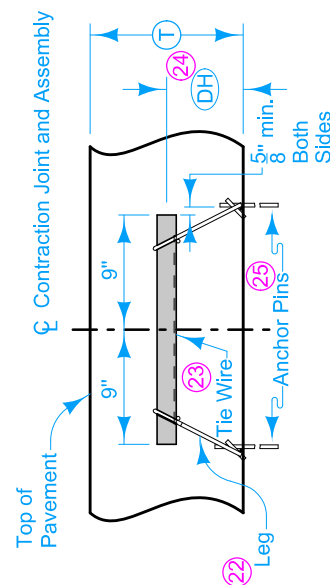
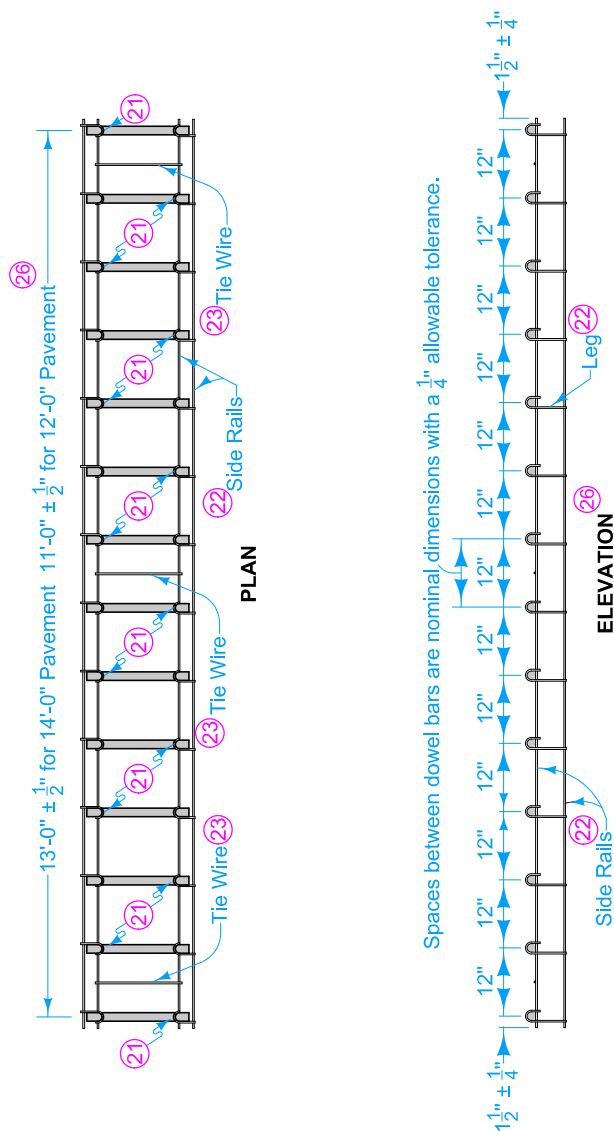
DETAIL D-2
(Required when the Department of Transportation is not the Contracting Authority, or when specified in the contract documents)

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

SUDAS	Iowa Department of Transportation	REVISION
		1 04-17-12
FIGURE 7010.101	STANDARD ROAD PLAN	PV-101
REVISIONS: Added new note 26. Added placement limits drawings on sheet 6.		SHEET 4 of 8
Dave D. Wiegand SUDAS DIRECTOR		Deanna M. M. M. DESIGN METHOD ENGINEER
		JOINTS





CONTRACTION JOINTS



LONGITUDINAL SECTION

DOWEL ASSEMBLIES

DOWEL HEIGHT AND DIAMETER	
(T)	DH (24) Diameter
7" to 7 $\frac{1}{2}$ "	3 $\frac{1}{2}$ " $\frac{3}{4}$ "
8" to 9 $\frac{1}{2}$ "	4 $\frac{1}{4}$ " $\frac{1}{4}$ "
10" to 11 $\frac{1}{2}$ "	5 $\frac{1}{4}$ " $\frac{1}{2}$ "
12" to 13"	6 $\frac{1}{4}$ " $\frac{1}{2}$ "

 SUDAS	 Iowa Department of Transportation	REVISION 1 04-17-12
		PV-101
FIGURE 7010.101	STANDARD ROAD PLAN	SHEET 6 of 8

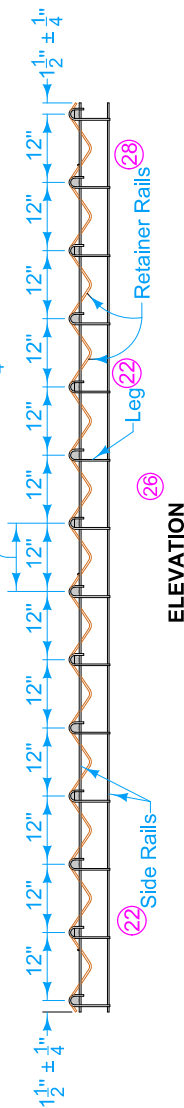
REVISIONS: Added new note 26, Added Placement limits drawings on sheet 6.

Rose D. Wigington *Deanne Maffitt*
 SUDAS DESIGN CORP. DESIGN PARTNERS ENGINEERING

JOINTS

Figure 10 is a plan view diagram of a 12'0" wide pavement section. The diagram shows a grid of horizontal and vertical lines representing the pavement structure. Labels include "Tie Wire" (23), "Side Rails" (22), "Retainer Rails" (28), and "Tie Wire" (27). Dimensions are given as 13'-0" \pm 1/2" for the side rails and 11'-0" \pm 1/2" for the tie wires. The word "PLAN" is written vertically on the right side.

Spaces between dowel bars are nominal dimensions with a $\frac{1}{4}$ " allowable tolerance.



SECTION THRU EXPANSION JOINT

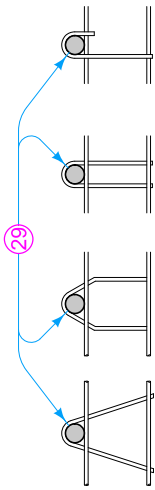
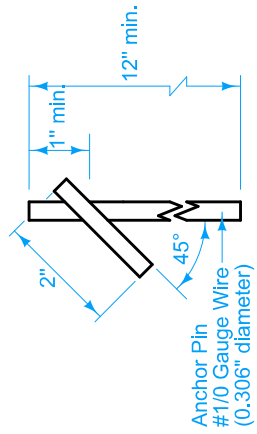
JOINT OPENING AND EXPANSION TUBE EXTENSION		
Joint Type	⊗	Minimum Tube Length
"ED"	1"	6"
"EE"	2"	7"
"EF"	3 $\frac{1}{2}$ "	9"

DOWEL HEIGHT AND DIAMETER		
(T)	DH (24)	Diameter
7" to $7\frac{1}{2}$ "	$3\frac{1}{2}$ "	$3\frac{3}{4}$ "
8" to $9\frac{1}{2}$ "	$4\frac{1}{4}$ "	$1\frac{1}{4}$ "
10" to $11\frac{1}{2}$ "	$5\frac{1}{4}$ "	$1\frac{1}{2}$ "
12" to 13"	$6\frac{1}{4}$ "	$1\frac{1}{2}$ "

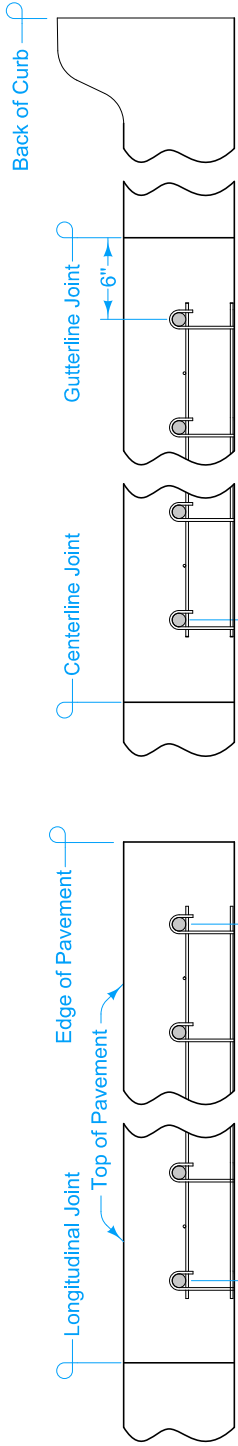
- ⑮ Use 18 inch long dowel bars with a tolerance of $\pm 1/8$ inch. Ensure the centerlines of individual dowels are parallel to the other dowels in the assembly within $\pm 1/8$ inch.
- ⑯ Wire sizes shown are the minimum required. Use wires with a minimum tensile strength of 50 ksi.
- ⑰ Details apply to both transverse contraction and expansion joints.
- ⑱ Weld alternately throughout.
- ⑲ #1/0 gauge (0.306 inch diameter) wire.
- ⑳ #10 gauge (0.135 inch diameter) wire, welded or friction fit to upper side rail, both sides.
- ㉑ Measured from the centerline of dowel bar to bottom of lower side rail + $1/4$ inch.
- ㉒ 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.
- ㉓ If dowel basket assemblies are required for curbed pavements, the assembly length is based on the jointing layout. See PV-101, sheet 8.
- ㉔ Clip and remove center portion of tie during field assembly.
- ㉕ $1/4$ inch diameter wire.

DOWEL ASSEMBLIES

- 18 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.
- 19 Wire sizes shown are the minimum required. Use wires with a minimum tensile strength of 50 ksi.
- 20 Details apply to both transverse contraction and expansion joints.
- 29 Diameter of bend around dowel is dowel diameter + $1/8$ to $3/16$ inches.

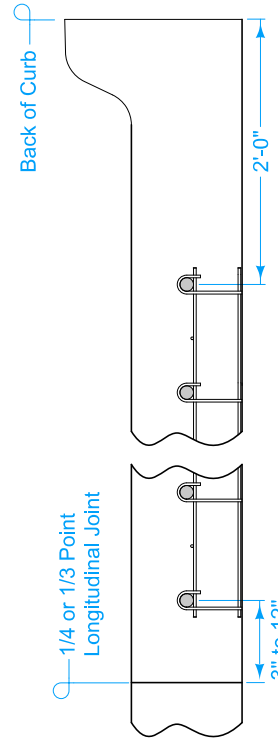


OPTIONAL LEG SHAPES



PLACEMENT LIMITS
(Rural Section)

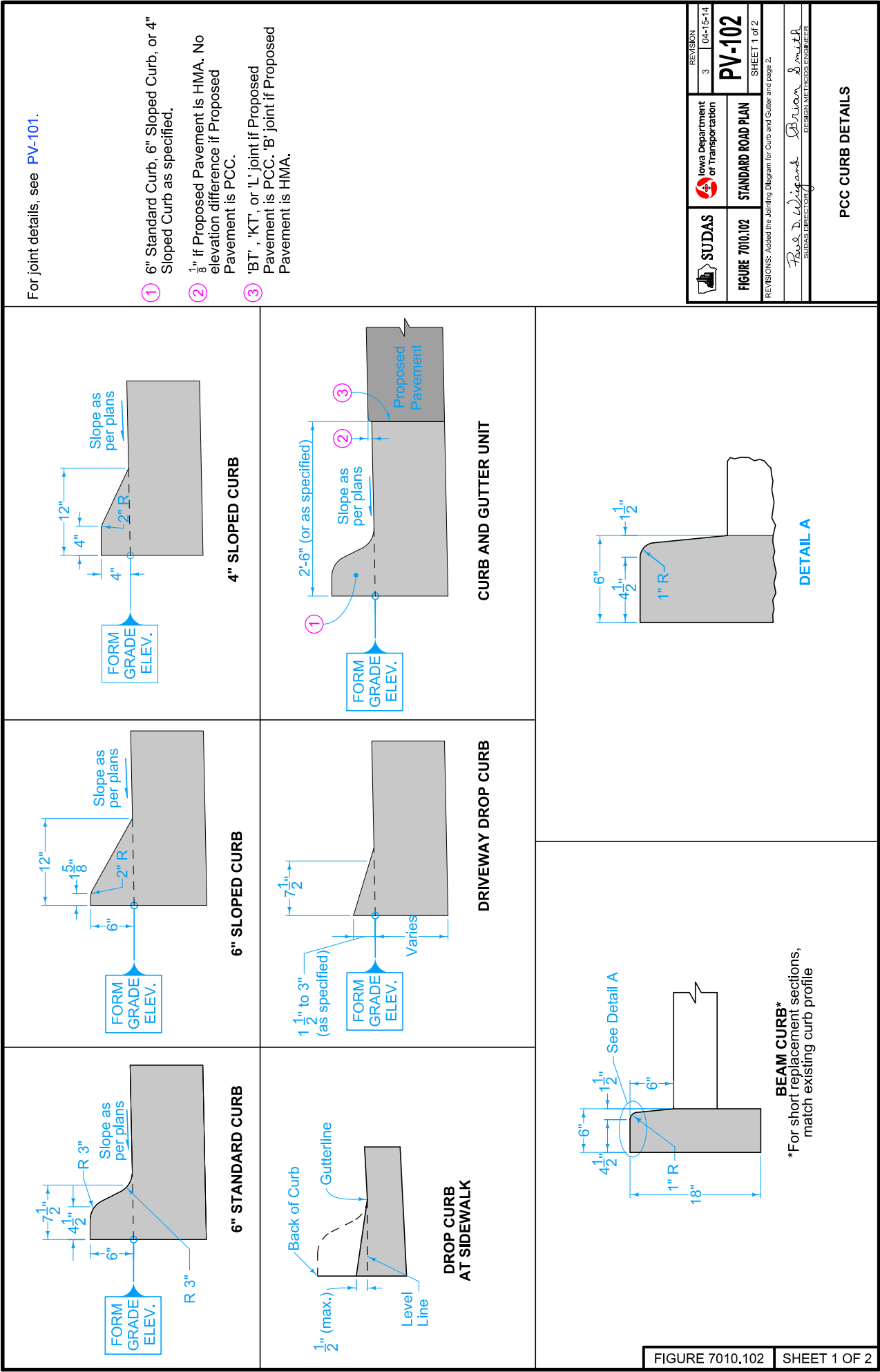
PLACEMENT LIMITS
(Curb and Gutter - Gutterline Jointing)

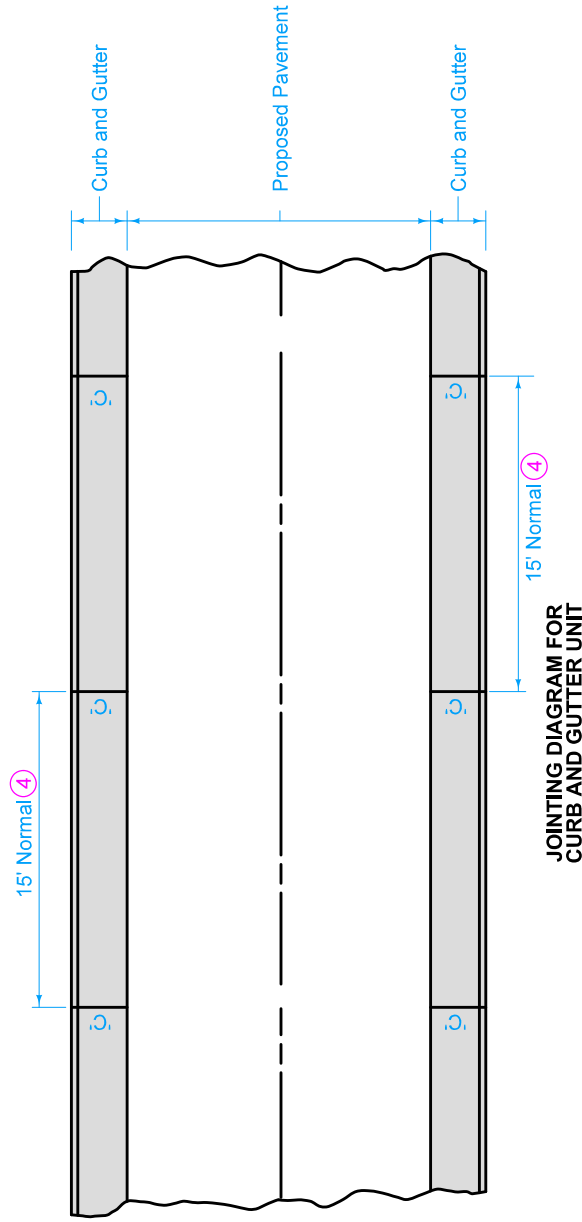


PLACEMENT LIMITS
(Curb and Gutter - 1/4 or 1/3 Point Jointing)

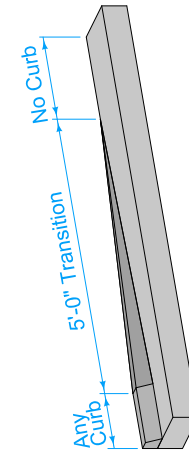
DOWEL ASSEMBLIES
18 19 20

SUDAS	Iowa Department of Transportation	REVISION 1 04-17-12
FIGURE 7010.101	STANDARD ROAD PLAN	PV-101
REVISIONS: Added new note 28. Added placement limits drawings on sheet 8.		
SUDAS DIRECTOR Deanna McFadden DESIGN METHOD ENGINEER		
JOINTS		

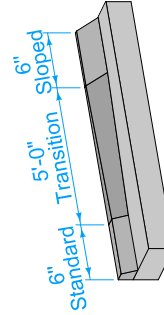




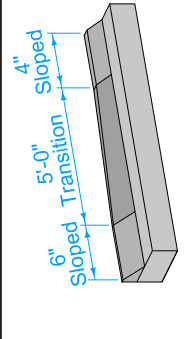
④ If proposed pavement is PCC, match joint spacing for proposed pavement. Place 'E' joints in curb and gutter section where expansion joints are to be placed in proposed pavement.



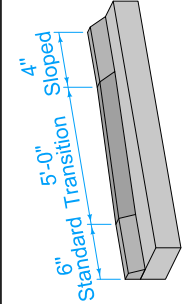
CURB RUNOUT
FOR ALL CURBS



CURB TRANSITION
FROM 6" STANDARD TO 6" SLOPED



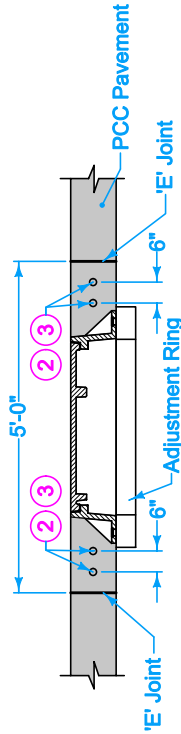
CURB TRANSITION
FROM 6" SLOPED TO 4" SLOPED



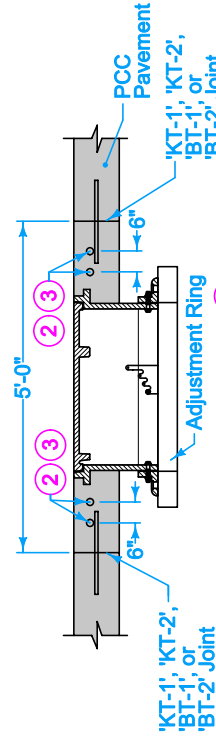
CURB TRANSITION
FROM 6" STANDARD TO 4" SLOPED

	Iowa Department of Transportation	REVISION 3 04-15-14	PV-102
FIGURE 7010.102	STANDARD ROAD PLAN	SHEET 2 of 2	REVISIONS: Added the Jointing Diagram for Curb and Gutter and page 2.
Paul D. Wiegand SUDAS DIRECTOR	Brian Smith DESIGN METHOD ENGINEER	PCC CURB DETAILS	

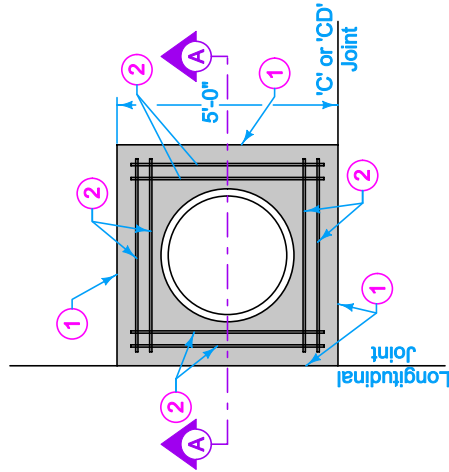
- Construct boxout with Class C concrete or match pavement class. Minimum 2 inches clear on reinforcement. Center casting within boxout area.
- 'KT-1', 'KT-2', 'BT-1', or 'BT-2' joint if three-piece floating casting (SW 601 Type B and D or SW-602 Type F) is used. 'E' joint if two-piece fixed casting (SW 601 Type A and C or SW-602 Type E) is used.
 - 4 foot 8 inch (typ.) #4 bar. Place at mid-slab.
 - #4 hoops (variable length). Place at mid-slab.
 - No boxout is required for three-piece floating castings (SW 601 Type B and D or SW-602 Type F). If a boxout is used with a three-piece casting, construct as detailed in Section A-A for three-piece floating casting.



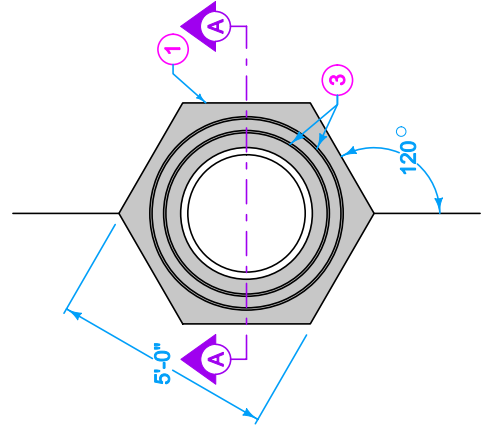
SECTION A-A
(For two-piece fixed casting)



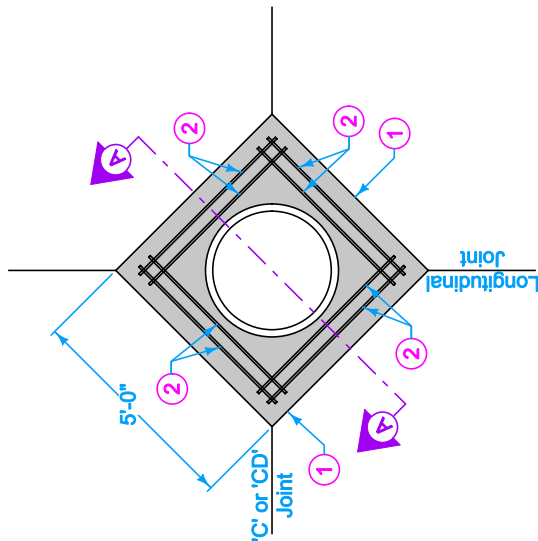
SECTION A-A
(For three-piece floating casting)



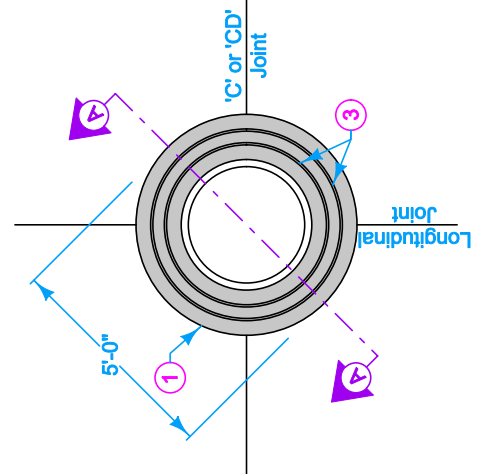
OFFSET AT JOINT INTERSECTION






AT A SINGLE JOINT



AT JOINT INTERSECTION



CIRCULAR

	SUDAS	Iowa Department of Transportation		REVISION
				New 04-19-11
	FIGURE 7010.103	STANDARD ROAD PLAN	DESIGN METHOD ENGINEER	PV-103
				SHEET 1 of 1
REVISIONS: New Joint Standard with SUDAS.				
<i>Paul D. Wiegand</i> SUDAS DIRECTOR				
MANHOLE BOXOUTS IN PCC PAVEMENT				

Plumb signpost by installing brass stock or strip shims complying with ASTM B 36. Furnish two shims each of 0.012" and 0.032" thickness (total of 4 per post).

Construct the footing as shown for normal footing in earth. Where solid rock is encountered, the alternate design for footing in solid rock may be used with the approval of the Engineer.

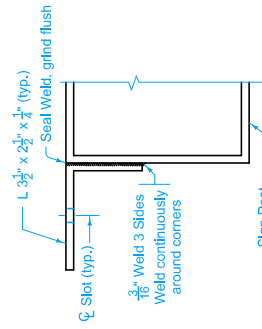
Dispose of all excavation for the footing in the area adjacent to the footing and shape to normal ground contour, unless directed otherwise by the Engineer.

Hold the stub post in proper position by an approved device to ensure that it remains in proper position upon completion of concrete placement.

The contract price for size of footing required is full compensation of footing as detailed hereon, including all necessary excavation regardless of character.

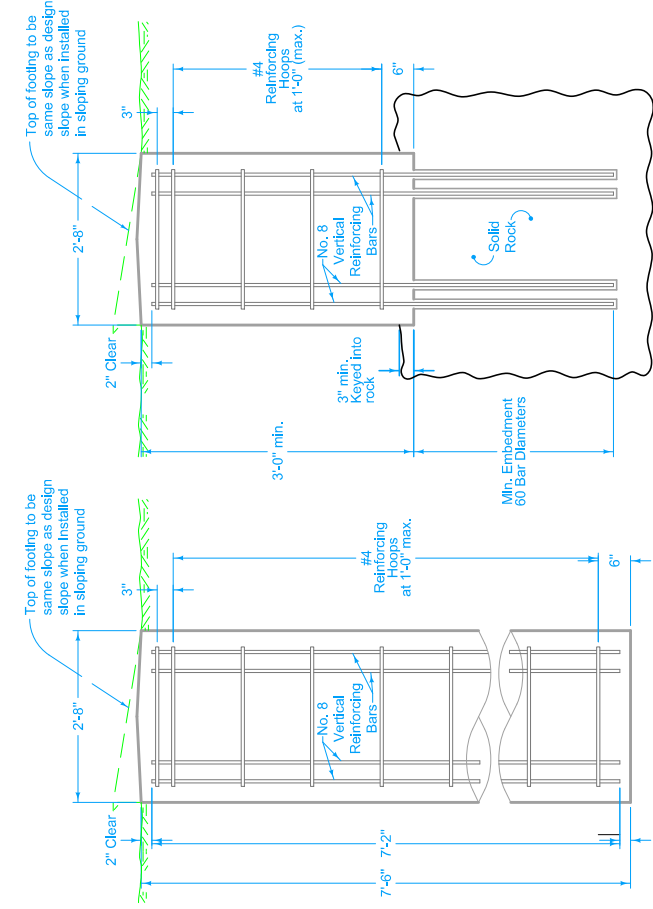
- ① Set vertical bars in solid rock as follows:
1. Drill holes twice bar diameter and fill with water.
 2. When hole is fully saturated, blow water out and fill two-thirds depth with sand cement mortar.
 3. Insert bar and consolidate mortar.
 4. Fill hole to top with mortar.

Possible Contract Items:
Concrete Footing for Breakaway Sign Post
Steel Breakaway Sign Post, Rectangular Tube



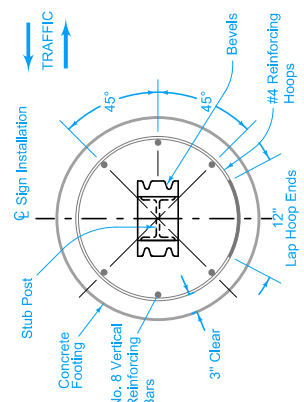
SECTION A-A

	REVISION	2	10-18-12
	SI-114 SHEET 1 of 2		
STANDARD ROAD PLAN			
REVISIONS: Updated details. Modified notes. Rearranged drawings.			
APPROVED BY DESIGN METHOD ENGINEER <i>Danica Mayfield</i>			
SUPPORT STRUCTURES - STEEL BREAKAWAY POSTS RECTANGULAR TUBE			

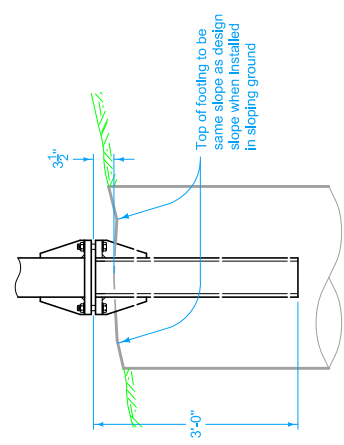


INSTALLATION
NORMAL FOOTING IN EARTH

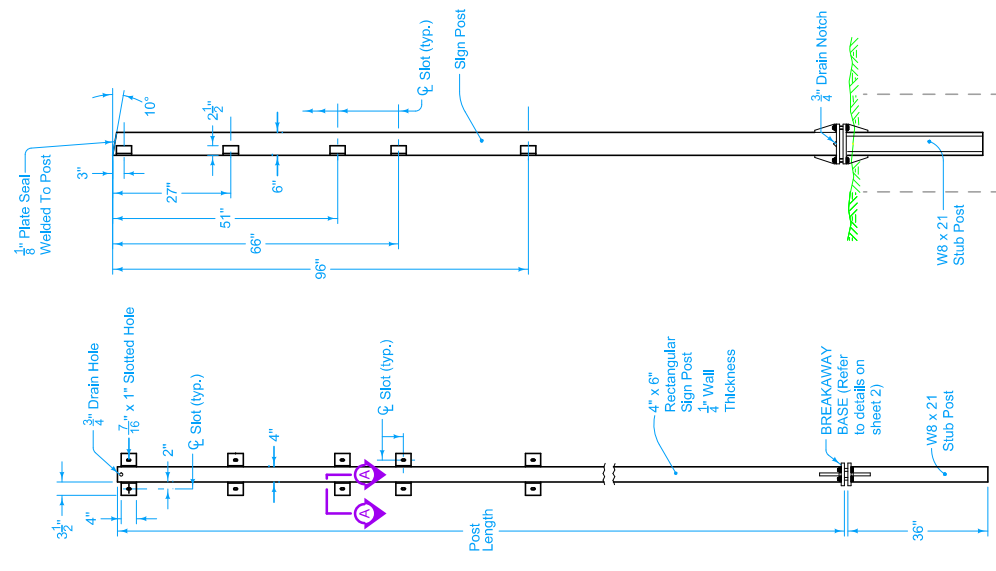
ALTERNATE DESIGN ①
FOOTING IN SOLID ROCK



PLAN
(Reinforcing Placement and Sign Orientation)



BREAKAWAY POST INSTALLATION



FRONT ELEVATION

SIDE ELEVATION

4" x 6" RECTANGULAR TUBE POST
FOR INTERSTATE SPEED SIGNS

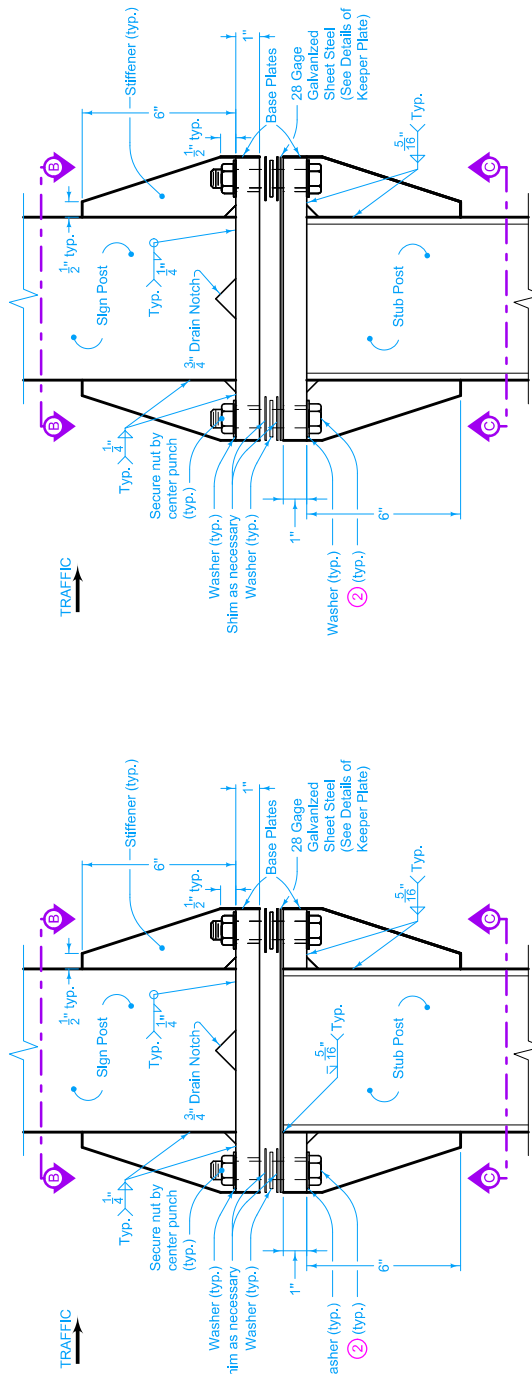
The following Base Plate alternates are considered equivalent:

ALTERNATE 1 - Weld base plates (2 each) to sides of stub post flanges.

ALTERNATE 2 - Weld base plate (1 each) to end of stub post. During assembly, properly match and align the bolt holes and notches in the stub post plate and the sign post plate as indicated hereon.

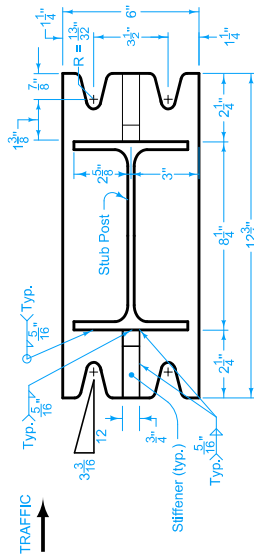
Grind smooth all welds and galvanizing between Base Plates.

② $\frac{3}{4}$ " dia. x $3\frac{1}{2}$ "
Torque = 62.50 ft. lbs.

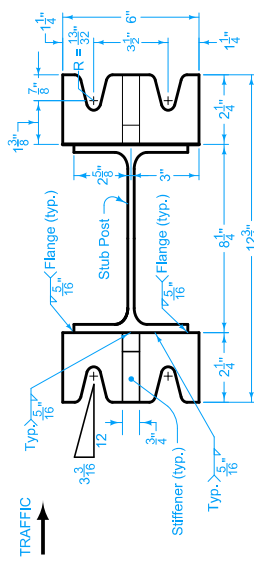


BREAKAWAY BASE
Side View
(Alternate 2)

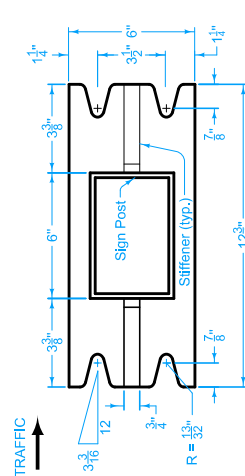
BREAKAWAY BASE
Side View
(Alternate 1)



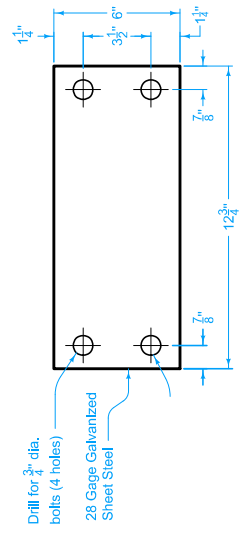
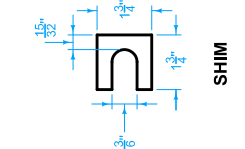
SECTION C-C
PLAN - BASE
(ALTERNATE 2)



SECTION C-C
PLAN - BASE
(ALTERNATE 1)



SECTION B-B
PLAN - BASE



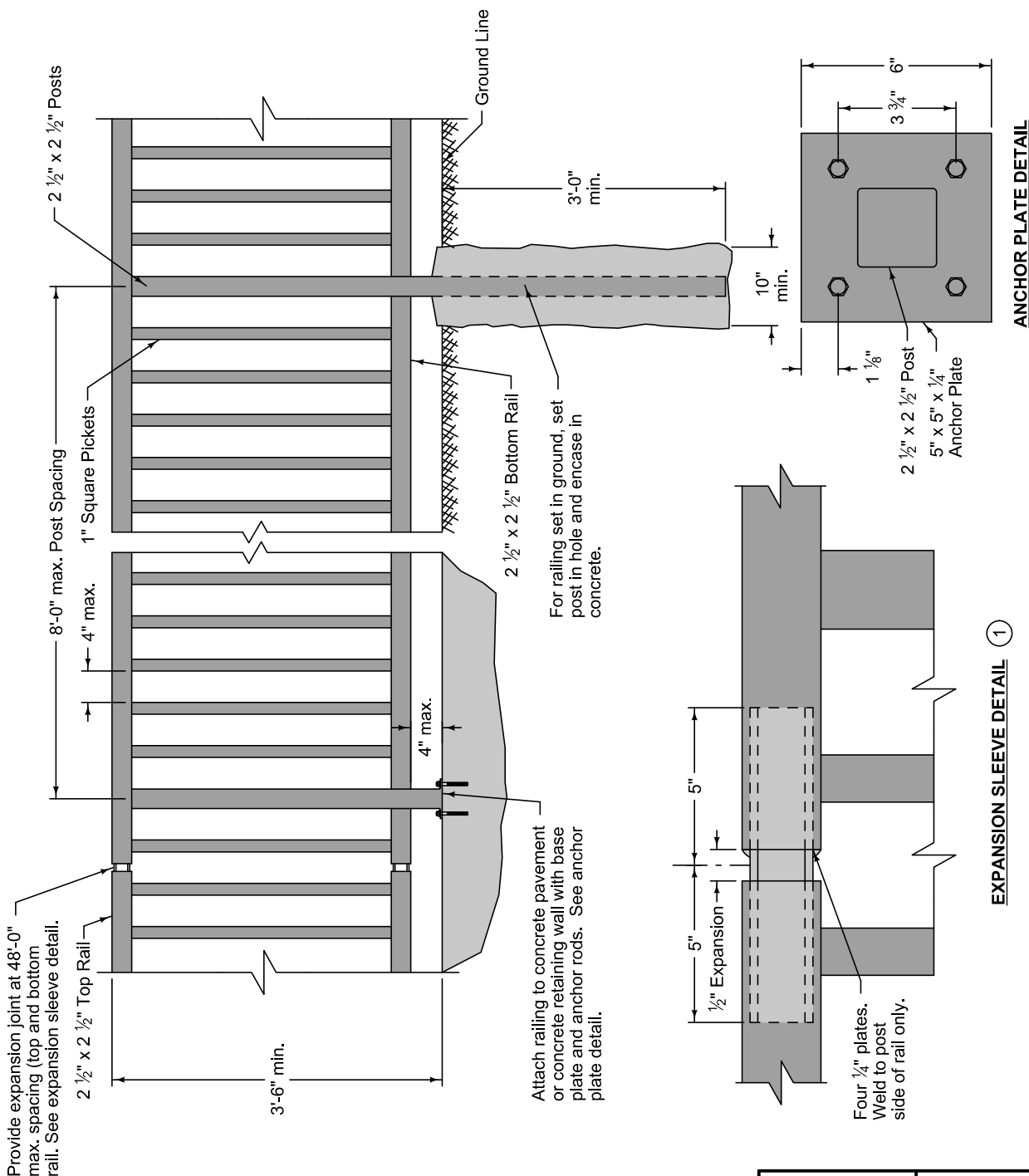
KEEPER PLATE

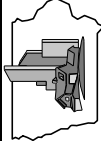
	REVISION	2	10-16-12
	SI-114		
	STANDARD ROAD PLAN SHEET 2 of 2		
REVISIONS: Updated welds. Modified notes. Rearranged drawings.			
APPROVED BY DESIGN METHOD ENGINEER <i>Danica M. Maffei</i>			
SUPPORT STRUCTURES - STEEL BREAKAWAY POSTS RECTANGULAR TUBE			

Weld all components with 1/4 inch fillet welds. Grind welds and connections as required to provide a smooth surface, free of burrs.

Field paint safety rail after installation as specified in the contract documents.

① Detail shown is for top rail. Expansion joint for bottom rail is similar.



	REVISION	10-18-11
	New	
	9080.103	
SHEET 1 of 1		
SUDAS Standard Specifications		
SAFETY RAIL		

