

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

**ELKHART COUNTY HIGHWAY DEPARTMENT**  
**ENGINEERING SECTION**  
**610 STEURY AVENUE**  
**GOSHEN, IN 46528**

**SPECIFICATIONS AND CONTRACT DOCUMENTS**

**FOR**

**COUNTY ROAD 4 IMPROVEMENTS PROJECT**



I hereby certify that these plans and specifications were prepared by me, or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Indiana.

Date 03/25/21

A handwritten signature in black ink, appearing to read "B. Konarski", written over a horizontal line.

Brian B. Konarski, P.E.  
Registered Professional Engineer  
State of Indiana No. 11011333  
Jones Petrie Rafinski  
325 S Lafayette Blvd  
South Bend, IN 46601

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

**TABLE OF CONTENTS**

NOTICE TO BIDDERS .....	NB-1
BID FORMS .....	B-1
CONTRACT .....	C-1
GENERAL CONDITIONS .....	GC-1
SUPPLEMENTAL SPECIFICATIONS.....	SS-1
SPECIAL NOTES & REQUIREMENTS.....	SP-1
TECHNICAL SPECIFICATIONS.....	TS-1
ITEM 1 – CLEARING RIGHT OF WAY.....	TS-1
ITEM 2 – CONSTRUCTION STAKING.....	TS-2
ITEM 3 – SITE GRADING.....	TS-3
ITEM 4 – MAINTENANCE OF TRAFFIC.....	TS-4
ITEM 5 – EROSION CONTROL.....	TS-5
ITEM 6 – PAVEMENT REMOVAL.....	TS-8
ITEM 7 – COMPACTED AGGREGATE NO. 53.....	TS-9
ITEM 8 – HOT MIXED ASPHALT (HMA) PAVEMENT.....	TS-10
ITEM 9 – CONCRETE DRIVE RESTORATION .....	TS-11
ITEM 10 – CONCRETE CURBING.....	TS-13
ITEM 11 – STORM SEWER STRUCTURES.....	TS-14
ITEM 12 – STORM SEWER PIPE .....	TS-16
ITEM 13 – WATER MAIN (INCLUDES BORE & JACK) .....	TS-19
ITEM 14 – WATER MAIN FITTINGS.....	TS-28
ITEM 15 – GATE VALVE AND BOX .....	TS-29
ITEM 16 – FIRE HYDRANT ASSEMBLY .....	TS-31
ITEM 17 – PAVEMENT MARKING .....	TS-32
ITEM 18 – TRAFFIC SIGNAL IMPROVEMENTS.....	TS-33
ITEM 19 – COMMUNICATIONS CONDUIT .....	TS-34
ITEM 20 – ATMS VAULTS AND HANDHOLES .....	TS-36
ITEM 21 – SITE LANDSCAPE IMPROVEMENTS .....	TS-37
ITEM 22 - SIGNAGE.....	TS-38
ITEM 23 – LANDSCAPE RESTORATION.....	TS-39
ITEM 24 – MOBILIZATION & DEMOBILIZATION .....	TS-40
ITEM 25 – RESET SECTION MONUMENT .....	TS-40
APPENDIX A SOIL BORINGS .....	A-1

## NOTICE TO BIDDERS

Notice is hereby given that the Board of County Commissioners of Elkhart County, Indiana, will receive bids up to **9:00 AM on May 3, 2021** for the **County Road 4 Improvements Project**. It is the responsibility of the bidder to ensure that its bid is delivered on time to the Office of the Elkhart County Commissioners, County Administration Building, 117 N. Second Street, Goshen, IN 46526.

Plans, Specifications and bidding documents may be obtained from the **Elkhart County Highway Department, website** at [www.elkcohw.org](http://www.elkcohw.org) starting at **9:00 AM on March 26, 2021**. Plans, Specifications and Bidding Documents may not be obtained prior to this date.

Plans, Specifications and Bidding Documents will be available for inspection at the Elkhart County Highway Department Office, 610 Steury Ave, Goshen, Indiana starting on **March 26, 2021**. A pre-bid meeting will be held at the Elkhart County Highway Department Office, 610 Steury Ave, Goshen, Indiana at **10:00 AM on Tuesday, April 13, 2021**.

Proposals shall be properly and completely executed on proposal forms furnished by the County in accordance with Revised Indiana Form 96 and shall be accompanied by the Contractor's Financial Statement form taken from Form 96 for any proposal of \$5,000 or more.

The Contractor shall submit an itemized proposal of the approximate quantities and components of labor and materials to complete the contract. Said proposal shall be upon the standard bid sheets used by Elkhart County, and said sheet must contain an authorized signature of the Contractor, or the bid of the Contractor may, at the discretion of Elkhart County, be rejected and declared invalid. Each proposal shall be accompanied by a non-collusion affidavit as required by the Statutes of Indiana. Bids shall be enclosed in a sealed envelope, bearing the title of the project and name and address of bidder.

Bids will be accepted only from bidders who are sufficiently and currently pre-qualified by the Indiana Department of Transportation. Proof of pre-qualifications must be submitted with the bid.

A current Contractor's Financial Statement taken from Form 96 and the Indiana Department of Transportation pre-qualification certificate may be placed on file with the Board of County Commissioners of Elkhart County at the Highway Division annually in lieu of executing these documents for each project.

All work may begin on **June 4, 2021** and shall be completed by **September 22, 2021**. Delays in completion beyond that date shall result in liquidated damages levied against the Contractor by Elkhart County. The damage charges shall be \$500 per day per item beyond the above stated date and any intermediate completion dates noted in the specifications.

A satisfactory bid bond (10% of bid), payable to the Board of County Commissioners of Elkhart County, Indiana executed by the bidder shall be submitted with each bid.

No bids shall be withdrawn after the opening of the bids without the consent of the Board of Commissioners of Elkhart County for a period of thirty (30) days after the scheduled time of closing.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

Said work shall be subject to all the provisions of the plans and specifications therefore herein above referred to including the completion date thereof and penalty clause as therein set forth.

The Board of County Commissioners reserves the right to reject any and all Bids or to waive any informalities in the bidding.

Dated this 24th day of March, 2021

Board of County Commissioners of Elkhart County

By Patricia A. Pickens, Auditor

Advertise: Wednesday, March 24, 2021 and March 31, 2021 - Elkhart Truth and Goshen News

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

**CERTIFIED BID SUMMARY FORM**

**County Road 4 Improvements**

This form is to be placed on the first page of the bid packet.

This Certified Bid Summary Form is to ensure that all required components of the bid have been included. Please initial each appropriate line, fill in the bid and alternate amounts, and place this sheet as the first page of your submittal. **The completed form must be submitted with your bid packet.**

- \_\_\_\_\_ I have included the **Bid Form 96.**
- \_\_\_\_\_ I have included the **Bid Bond.**
- \_\_\_\_\_ I have included the **Financial Statement.**
- \_\_\_\_\_ I have included the **Schedule.**
- \_\_\_\_\_ I have included the **Base Bid.**
- \_\_\_\_\_ I have included the **Addendum No.** \_\_\_\_\_

I hereby certify the following: 1) that all of the required documentation is contained within the following bid packet; 2) that the information provided in this proposal is accurate and complete; 3) that I have read and understand the instructions, terms, conditions and specifications of this solicitation; 4) that I agree to fulfill the requirements of any awarded contract at the prices proposed; and 5) that this proposal includes all costs necessary to provide all supervision, labor, services, materials, tools, equipment, supplies, insurance, permits, bonds, and other incidental items, whether or not specifically called for in the specifications and contract documents, to perform and complete in a workmanlike manner all work as specifically described under each item in the specifications and contract documents, and other work necessary to complete the project in accordance with the obvious or expressed intent of the specifications of the contract documents. Failure to accurately complete this form may be interpreted as a nonresponsive bid.

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

Name: \_\_\_\_\_ Title: \_\_\_\_\_

Contractor's Name and Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

**BID FORM**

1. Name of Bidder \_\_\_\_\_
2. Business Address \_\_\_\_\_
3. Number of years engaged in contracting business under present firm's name: \_\_\_ years.
4. \*Experience in the contracting work generally similar to this project, including list of complexes, locations and approximate contract cost thereof.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

5. Have you ever defaulted on a contract? \_\_\_\_\_ Yes \_\_\_\_\_ No

If Yes, when, with whom and why? \_\_\_\_\_

\_\_\_\_\_

6. \*It is a necessary requirement of this Specification that each Contractor show evidence for five (5) jobs guaranteed for one (1) year on workmanship, unconditionally, and where Contractor has agreed to return and repair this work at no expense to the Owner.

_____	_____
_____	_____
_____	_____

7. \*Have you ever filed bankruptcy or been adjudged bankruptcy?

\_\_\_\_\_ Yes \_\_\_\_\_ No

8. Do you employ any black, Hispanic, female or oriental minority persons? If yes, please state the number of each of such minority persons you presently employ. \_\_\_\_\_ Yes \_\_\_\_\_ No

If no, please state reasons.

\_\_\_\_\_

\_\_\_\_\_

- 9.

\_\_\_\_\_

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

Have you encouraged minority building subcontractors to submit proposals in connection with your bid? \_\_\_\_ Yes \_\_\_\_ No. If yes, state the name(s) of the minority subcontractors who have been contacted by you for the purpose of submitting a bid/proposal. If no, please state reasons.

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10. Do you intend to use any minority subcontractors in performing the work or providing the materials contained within your bid? \_\_\_\_ Yes \_\_\_\_ No. If yes, please state the name of the subcontractor. If no, please state reasons.

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11 Have you been involved in any complaints or litigation relative to the use of minority subcontractors? \_\_\_\_ Yes \_\_\_\_ No. If yes, what is the status of the complaints of the litigation?

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12 Additional pertinent comments:

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BY: \_\_\_\_\_  
\_\_\_\_\_

(Signature of official completing this form)

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

**BID BOND**

KNOW ALL MEN BY THESE PRESENTS, that we the undersigned \_\_\_\_\_

\_\_\_\_\_

as PRINCIPAL, and \_\_\_\_\_

\_\_\_\_\_ as SURETY, are held and firmly bound unto the Elkhart County Board of County Commissioners, hereinafter called the "Owner", in the penal sum of

\_\_\_\_\_ Dollars (\$\_\_\_\_\_) lawful money of

the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents:

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal has

submitted the accompanying Bid, dated \_\_\_\_\_

for: \_\_\_\_\_

NOW, THEREFORE, if the Principal shall not withdraw said bid within the period specified herein after the opening of the same, or if no period be specified within or sixty (60) days after the said opening, and shall within the period specified therefore, or, if no period be specified within ten (10) days after the prescribed forms are presented to him for signature, enter into a written contract with the Owner in accordance with the bid as accepted, and give Bond for faithful performance and proper fulfillment of such Contract; or in the event of the withdrawal of said bid within the period specified, or the failure to enter into such Contract and give such Bond within



**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

the time specified if the Principal shall pay the Owner the difference between the amount specified in said Bid and the amount for which the Owner may procure the required work or suppliers or both, if the latter amount be in excess of the former, then the above obligation shall be void and of no effect, otherwise to remain in full force and virtue.

IN WITNESS WHEREOF, the above bounden parties have executed this instrument under their several seals this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_ the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

IN PRESENCES OF:

INDIVIDUAL PRINCIPALS:

_____	_____ (SEAL)
_____	_____ (SEAL)
_____	_____ (SEAL)
_____	_____ (SEAL)

ATTEST:

CORPORATE PRINCIPAL:

_____	_____ (SEAL)
_____	_____ (SEAL)

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

By: \_\_\_\_\_

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

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

ATTEST:

CORPORATE SURETY:

\_\_\_\_\_

\_\_\_\_\_ (SEAL)

\_\_\_\_\_

\_\_\_\_\_ (SEAL)

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

By: \_\_\_\_\_

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

Power-of-Attorney for person signing for Surety Company must be attached to Bond.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

**CERTIFICATE AS TO CORPORATE PRINCIPAL**

I, \_\_\_\_\_

certify that I am the \_\_\_\_\_

Secretary of the Corporation named as Principal in the within Bond; that \_\_\_\_\_

\_\_\_\_\_ who signed the said Bond on behalf of the Principal was

then \_\_\_\_\_ of the corporation, that I know his signature,

and his signature thereto is genuine; and that said Bond was duly signed, sealed, and attested

to, for and in behalf of said corporation by authority of its governing body.

\_\_\_\_\_ (SEAL)

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

**ITEMIZED PROPOSAL**

<b>Item No.</b>	<b>Quantity</b>	<b>Unit</b>	<b>Description</b>	<b>Unit Price</b>	<b>Total Price</b>
1.1	1	LSUM	Clearing Right of Way		
2.1	1	LSUM	Construction Staking		
3.1	1	LSUM	Site Grading		
4.1	1	LSUM	Maintenance of Traffic		
5.1	1	LSUM	Erosion Control		
6.1	250	SYD	Pavement Removal, Mainline, Full Depth		
6.2	700	SYD	Pavement Removal, Approach, Full Depth		
6.3	445	SYD	HMA Surface Milling		
7.1	4,530	TON	Dense Graded Subbase, 6 in, Compacted Aggregate, INDOT NO 53, Over Compacted Subgrade		
8.1	2,030	TON	HMA Base, Type B, 330#/SYD, Mainline Pavement		
8.2	2,030	TON	HMA Intermediate, Type C, 330#/SYD, Mainline		
8.3	36	TON	HMA Intermediate, Type B, 330#/SYD, Shoulder		
8.4	1,015	TON	HMA Surface, Type C, 165#/SYD, Mainline Pavement		
8.5	18	TON	HMA Surface, Type B, 165#/SYD, Shoulder Pavement		
8.6	12,260	SYD	Asphalt for Tack Coat		
9.1	1,115	SYD	PCCP for Approaches, 6 in		
10.1	4,450	LFT	Concrete Curb and Gutter		
10.2	1,152	LFT	Concrete Curb		
11.1	12	EA	Storm Inlet, 30" Diam		
11.2	6	EA	Catch Basin, 4' Diam		
11.3	5	EA	Storm Manhole, 4' Diam		
12.1	138	LFT	12" PVC Storm Sewer		
12.2	240	LFT	12" RCP Storm Sewer		
12.3	361	LFT	15" PVC Storm Sewer		
12.4	675	LFT	15" RCP Storm Sewer		
13.1	1,054	LFT	12" Ductile Iron Water Main		
13.2	195	LFT	12" Ductile Iron Water Main by Bore and Jack		
14.1	1	EA	12" Tapping Valve & Sleeve		
15.1	2	EA	12" Gate Valve & Box		
16.1	3	EA	Fire Hydrant Assembly		
17.1	500	LFT	Line, Paint, Solid, White 4"		
17.2	1,110	LFT	Line, Thermoplastic, Solid, White, 4"		
17.3	150	LFT	Line, Thermoplastic, Solid, White 24" Stop Bar		
17.4	3,950	LFT	Line, Thermoplastic, Solid, Yellow, 4"		
17.5	1,125	LFT	Line, Thermoplastic, Solid, Yellow, 8"		
17.6	450	LFT	Line, Thermoplastic, Solid, Yellow, 12"		
17.7	10	EA	Pavement Message Marking, Thermoplastic, Turn Arrowhead		

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

<b>ITEM NO</b>	<b>Quantity</b>	<b>Unit</b>	<b>Description</b>	<b>Unit Price</b>	<b>Total Price</b>
17.8	6	EA	Pavement Message Marking, Thermoplastic, Straight & Turn Arrowheads		
18.1	1	LSUM	Traffic Signal Improvements		
19.1	2,630	LFT	Communication Conduit, 2-inch		
20.1	2	EA	ATMS Handhole		
20.2	2	EA	ATMS Vault		
21.1	1	LSUM	CR 17 Landscape Improvements		
22.1	10	EA	Sign, Sheet, Relocate		
23.1	1	LSUM	Landscape Restoration		
24.1	1	LSUM	Mobilization & Demobilization (5% Max)		
25.1	1	LSUM	Reset Section Corner Monument		
				<b>Total</b>	

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

**AGREEMENT**

THIS AGREEMENT, made and entered into this \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, by and between \_\_\_\_\_ (a corporation organized and existing under the laws of the State of Indiana), hereinafter referred to as the "CONTRACTOR," and "ELKHART COUNTY, INDIANA," acting through the Board of Commissioners, hereinafter referred to as the "OWNER."

WITNESSETH, that the Contractor and the Owner, for the considerations stated herein, mutually agree as follows:

**ARTICLE 1 -- STATEMENT OF WORK**

The Contractor shall furnish all supervision, technical personnel, labor, materials, machinery, tools, equipment and services, including utility and transportation services, and traffic control, and perform and complete all work required for County Road 4 Improvements Project, in Elkhart County, Indiana, as more particularly described in the Specifications, Special Provisions, General Requirements, Supplementary Conditions, Terms for Bidding, plans and drawings, and other items contained therein prepared by Elkhart County ("ENGINEER") and referred to herein as the "Construction Documents." All such Construction Documents have been reviewed and approved by the parties hereto and all are incorporated herein by reference as a part of this Agreement consistent with Article 4 below. All undertakings, duties, obligations, and performance required of Contractor by the Construction Documents and this Agreement are hereinafter referred to as the "Work."

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

**ARTICLE 2 -- CONTRACTOR REPRESENTATIONS**

The Contractor represents to Owner that it is fully experienced and properly qualified as an expert to render the performance required for the Work, and that it is properly equipped, organized and financed for performance of this Agreement. Contractor further represents and acknowledges that it is an independent contractor, and that Contractor IS NOT, in any manner or form, an agent, employee, or representative of Owner.

**CONTRACTOR INDEMNIFICATION**

The Contractor agrees to indemnify and save harmless the Owner and Engineer, their agents and employees, from and against all loss or expense (including court costs and attorneys' fees of defense or enforcement) by reason of liability imposed by law or otherwise upon the Owner or Engineer, for (1) damages because of bodily injury, including death at any time resulting therefrom, sustained by any person or persons, or (2) on account of damage to property or property rights or interests, including loss of use thereof, arising out of or in consequence of the performance of the Work, provided such injury to persons or damage to property is due or claimed to be due to negligence of the Contractor, its subcontractors, employees or agents, or in violation of this Agreement.

**REQUIREMENTS FOR CONTRACTORS ON PUBLIC WORKS PROJECTS**

- 1) The provisions of Indiana Code Section 5-16-13 are hereby incorporated by reference including, but not limited to, the following specific provisions:
  - a) Contractor must contribute in work performed by its employees, materials supplied directly by Contractor, and services supplied directly by its employees of at least fifteen percent (15%) of the total contract price.
  - b) Contractor must maintain general liability insurance in the amounts provided in the



**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

Construction Documents but in no event less than One Million Dollars (\$1,000,000.00) for each occurrence limit and Two Million Dollars (\$2,000,000.00) for the general aggregate limit.

- c) Contractor must implement and comply with the requirements of Indiana Code Section 22-5-1.7 concerning the E-Verify system with respect to its employee hiring. Contractor must submit, before work begins on the Agreement, the E-Verify case verification number for each individual who is required to be verified under Indiana Code Section 22-5-1.7. An individual who is required to be verified under Indiana Code Section 22-5-1.7 whose final case result is final non-confirmation may not be employed on this Work.
  - d) Contractor may not pay cash to any individual employed by the Contractor for work done by the individual on this Work.
  - e) Contractor must be in compliance with the Federal Fair Labor Standards Act of 1938, as amended (29 USC 201-209) and Indiana Code Section 22-2-2-1 through Indiana Code Section 22-2-2-8.
  - f) Contractor must be in compliance with Indiana Code Section 22-3-5-1 and Indiana Code Section 22-3-7-34.
  - g) Contractor must be in compliance with Indiana Code Section 22-4-1 through Indiana Code Section 22-4-39.5.
  - h) Contractor must be in compliance with Indiana Code Section 4-13-18-1 through Indiana Code Section 4-13-18-7.
- 2) Drug Testing of Employees. Indiana Code Section 4-13-18 regarding the drug testing of employees of public works contractors applies to the Agreement as the estimated cost hereof is at least One Hundred Fifty Thousand Dollars (\$150,000.00) and has been awarded after June 30, 2015.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

- 3) Nondiscrimination. Pursuant to Indiana Code Section 22-9-1-10, Contractor and its subcontractors, if any, shall not discriminate against any employee or applicant for employment to be employed in the performance of the Agreement with respect to hire, tenure, terms, conditions or privileges of employment or any matter directly or indirectly related to employment, because of race, religion, color, sex, disability, national origin, ancestry, or veteran status. Breach of this covenant may be regarded as a material breach of the Agreement.
- 4) Anti-nepotism. Contractor is aware of the provisions of Indiana Code Section 36-1-21 et seq. with respect to anti-nepotism in contractual relationships with governmental entities. Contractor certifies that none of the owners of Contractor is a relative of any elected Council Member or Commissioner of the County of Elkhart, Indiana.
- 5) Investment Activity. Pursuant to Indiana Code Section 5-22-16.5-13, Contractor certifies that Contractor is not engaged in investment activities in Iran.

**ARTICLE 3 -- THE CONTRACT PRICE**

The Owner will pay the Contractor for the performance of the Work subject to additions and deductions provided herein, in current funds, and per applicable Indiana law and the required procedures for payments by Owner, the sum of \$\_\_\_\_\_. The Contractor shall start the Work on or after **June 4, 2021** and work shall be complete by **September 22, 2021**. Any Work remaining to be completed after **September 22, 2021** shall be subject to the following damages:

For each and every day Work contemplated in this Agreement fails to achieve the completion date herein established (September 22, 2021), Contractor shall owe and pay to Owner the sum of \$500 per day, as liquidated damages and not as penalty. In establishing said \$500 sum per day as and for liquidated damages owed by the Contractor to Owner, the parties hereto stipulate

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

and agree that the actual damages that would be suffered by Owner because of the failure of Contractor to timely complete the Work contemplated are indefinite and uncertain; however, the parties hereto stipulate that the sum herein established is a reasonable estimate by the parties of the probable damages to be suffered by the Owner upon the failure of the Contractor to timely complete the Work contemplated. The liquidated damages herein established shall be deducted daily from the Contract Price herein established, thereby reducing the same for the total amount of liquidated damages as herein stipulated, and hence reducing payments of the Contract Price Owner would otherwise make. If an intermediate date is specified for one or more of the items or phases of the contract, liquidated damages will apply for that particular item or phase as if the intermediate date specified for said item or phase is conclusion of said portion of project or contract.

**ARTICLE 4 -- CONTRACT DOCUMENTS**

The Contract Documents forming a part of this Agreement by reference shall consist of the following:

- a. This Agreement.
- b. Memos
- c. Invitation for Bids.
- d. Notice to Bidders.
- e. Signed copy of Bid and Itemized Bid Form.
- f. General Conditions and Supplementary Conditions.
- g. Construction Specifications and Related Documents.
- h. Plans.
- i. Addendums

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

**ARTICLE 5 -- PROJECT CONTROL**

The Contractor will carry out this project and complete the Work under the direction of the Owner and the Owner's agents, the Engineer, or other consultant designated by the Owner. The Owner's designated representative during the construction period will make visits to the site at intervals appropriate to the various states of construction to observe the progress and quality of the executed Work and to determine, in general, if the Work is proceeding in accordance with the Contract Documents.

This Agreement, to include the Contract Documents enumerated in Article 4 above, constitutes the full agreement and understanding of the parties hereto, and save for change orders and procedures therefore set forth within the Contract Documents, shall not be amended by the parties, other than by instrument executed by each party hereto.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed in various counterparts effective as of the date and year first above written.

CONTRACTOR:

By \_\_\_\_\_ Signature  
\_\_\_\_\_ Printed Name  
\_\_\_\_\_ Title

OWNER: **ELKHART COUNTY, INDIANA**, by and through its Board of County Commissioners

\_\_\_\_\_  
Suzanne Weirick

\_\_\_\_\_  
Frank Lucchese

\_\_\_\_\_  
Brad Rogers

ATTEST: \_\_\_\_\_  
Patricia A. Pickens, Auditor

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

**PERFORMANCE BOND**

KNOW ALL MEN BY THESE PRESENTS, That \_\_\_\_\_  
\_\_\_\_\_ as principal and \_\_\_\_\_ as surety,  
are firmly bound unto Elkhart County, Indiana, acting through its Board of County Commissioners (OWNER) in the penal sum of an amount equal to one hundred percent (100%) the amount of his bid or the contract price, if the proposal is accepted, for the payment of which, well and truly to be made, we bind ourselves, jointly and severally, and our joint and several heirs, executors, administrators, and assigns, firmly by these presents, this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

THE CONDITIONS OF THE ABOVE OBLIGATION ARE SUCH That, Whereas, the principal is herewith submitting a bid and proposal for the erection, construction and completion of County Road Improvements Project in accordance with the plans and specifications approved and adopted by said OWNER, which are made a part of this bond.

NOW, THEREFORE, if the said OWNER shall award said principal the contract for work and said principal shall promptly enter into a contract with said OWNER for the said work and shall well and faithfully do and perform the same in all respects according to the plans and specifications provided by the said OWNER, and according to the time, terms, and conditions specified in said contract to be entered into, and in accordance with all requirements of law, and shall promptly pay all debts incurred by him or any subcontractor in the construction of said work, including labor, service, and materials furnished, then this obligation shall be void; otherwise to remain in full force, virtue and effect.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

IT IS AGREED that no modifications, omissions, or additions in or to the terms of such contract or in or to the plans or specifications therefore shall in any wise affect the obligation of such sureties on its bond.

IN WITNESS WHEREOF, we hereunto set our hands and seal this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

NAME \_\_\_\_\_ NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_ ADDRESS \_\_\_\_\_

BY \_\_\_\_\_ BY \_\_\_\_\_

Signature Title

Signature Title

\_\_\_\_\_  
(Printed or Typed)

\_\_\_\_\_  
(Printed or Typed)

Surety

Principal

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

State of Indiana, County of \_\_\_\_\_ ss:

Personally appeared before me, \_\_\_\_\_

as principal and \_\_\_\_\_

as surety and each acknowledged the execution of the above bond this \_\_\_\_\_ day

of \_\_\_\_\_, \_\_\_\_\_.

BY \_\_\_\_\_

Signature

Notary Public

\_\_\_\_\_  
(Printed or Typed)

Witness my hand and notarial seal the said last named date.

My Commission Expires \_\_\_\_\_, \_\_\_\_\_.

\_\_\_\_\_  
(County of Residence)

Accepted and approved this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

\_\_\_\_\_  
Suzanne Weirick

\_\_\_\_\_  
Frank Lucchese

\_\_\_\_\_  
Brad Rogers

ATTEST: \_\_\_\_\_

Patricia A. Pickens, Auditor



**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

**MAINTENANCE BOND**

KNOW ALL MEN BY THESE PRESENT: That we, \_\_\_\_\_  
\_\_\_\_\_, as  
Principal, \_\_\_\_\_ and  
\_\_\_\_\_ as Surety, are held and firmly bound to the \_\_\_\_\_  
\_\_\_\_\_ in  
the sum of \_\_\_\_\_  
\_\_\_\_\_ Dollars (\$ \_\_\_\_\_)

for the payment of which sum well and truly to be made, we jointly and severally bind ourselves, our heirs, executors, administrators, and successors, firmly by these present.

THE CONDITIONS OF THE ABOVE OBLIGATION are that, whereas the Principal, entered into a contract with the Owner on the \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, to construct \_\_\_\_\_ according to the Plans and Specifications, and also warranting the work and materials as provided in the aforesaid Contract and Specifications, for a period of three (3) years from the date of final acceptance of work by the Owner.

Now, if the said Principal shall faithfully perform and fulfill all the requirements of said Warranty and Guaranty, and make all repairs required under said Guaranty and, in the manner provided for, then this Bond to be null and void, otherwise to be in full force and effect.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

IN WITNESS WHEREOF, this statement is executed in two (2) counterparts, each one of which shall be deemed an original, this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

\_\_\_\_\_  
(SEAL) Principal

ATTEST:

\_\_\_\_\_ BY: \_\_\_\_\_

\_\_\_\_\_  
Title Title

(SEAL)

ATTEST:

\_\_\_\_\_ BY: \_\_\_\_\_

\_\_\_\_\_  
Title Title

APPROVED this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

ELKHART COUNTY, INDIANA

By and Through Its

BOARD OF COUNTY COMMISSIONERS

\_\_\_\_\_  
Suzanne Weirick

\_\_\_\_\_  
Frank Lucchese

\_\_\_\_\_  
Brad Rogers

ATTEST: \_\_\_\_\_

Patricia A. Pickens, Auditor

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

**EMPLOYMENT VERIFICATION AFFIDAVIT**

I, \_\_\_\_\_, being first duly sworn, deposes and says that I am familiar with and have personal knowledge of the facts herein and, if called as a witness in this matter, could testify as follows:

1. I am over eighteen (18) years of age and am competent to testify to the facts contained herein.
2. I am now and at all times relevant herein have been employed by \_\_\_\_\_ (the "Employer") in the position of \_\_\_\_\_.
3. I am familiar with the employment policies, practices, and procedures of the Employer and have the authority to act on behalf of the Employer.
4. The Employer is enrolled and participates in the federal E-Verify program. Documentation of this enrollment and participation is attached as Exhibit "A" and incorporated herein.
5. The Employer does not knowingly employ any unauthorized aliens.
6. To the best of my information and belief, the Employer does not currently employ any unauthorized aliens.
7. FURTHER AFFIANT SAYETH NOT.

EXECUTED on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

\_\_\_\_\_  
Printed: \_\_\_\_\_

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

**GENERAL CONDITIONS**

ARTICLE 1 - PRELIMINARY MATTERS

1.1 Delivery of Bonds

When CONTRACTOR delivers the executed Agreements to OWNER, CONTRACTOR shall also deliver to OWNER such Bonds as called for in the Contract Documents.

1.2 Copies of Documents

OWNER shall furnish to CONTRACTOR up to three (3) copies (unless otherwise specified in the Supplementary Conditions) of the Contract Documents as are reasonably necessary for the execution of the Work. Additional copies will be furnished, upon request, at the cost of reproduction.

1.3 Contract Documents

These Contract Documents are complementary and what is called for in one shall be as binding as if called for in all. The intention of these Contract Documents is to include in the Contract Price the costs of all labor and materials, water, fuel, tools, plant, equipment, light, transportation, taxes, bonds, and all other expense and profit as may be necessary for the proper and complete execution of the work.

1.4 Commencement of Contract Time; Notice to Proceed

The Contract Time will commence when the Contractor receives the Notice to Proceed from the Engineer. CONTRACTOR shall not be paid for any work performed prior to receiving the Notice to Proceed from the Engineer.

1.5 Starting the Project

CONTRACTOR shall start to perform the Work on the date when the Contract Time commences to run, but no Work shall be done at the site prior to the date on which the Contract Time commences to run unless such work is specifically approved by the owner/engineer. Construction shall commence after the Elkhart County CCMG project is completed on County Road 4.

1.6 Before Starting Construction

Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures shown thereon and all applicable field measurements. CONTRACTOR shall promptly report in writing to ENGINEER any conflict, error or discrepancy which CONTRACTOR may discover and shall obtain a written interpretation or clarification from ENGINEER before proceeding with any Work affected thereby; however, CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any conflict, error or discrepancy in the Contract Documents, unless CONTRACTOR had actual knowledge thereof or should reasonably have known thereof.

1.7 Submission for Review

Within ten (10) days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), CONTRACTOR shall submit to ENGINEER for review:

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

- 1.7.1 An estimated progress schedule indicating the starting and completion dates of the various stages of the Work; and
- 1.7.2 A preliminary schedule of Shop Drawings and/or sample submissions.
- 1.7.3 CONTRACTOR shall provide an updated progress schedule at all scheduled progress meetings.

1.8 Delivery of Certificates

Before any Work at the site is started, CONTRACTOR shall deliver to OWNER, with a copy to ENGINEER, certificates (and other evidence of insurance requested by OWNER) which CONTRACTOR is required to purchase and maintain.

1.9 Subcontracts

The Contractor shall not execute an Agreement with any Subcontractor or permit any Subcontractor to perform any work in this Contract until he has received written approval of such Subcontractor from the Owner or Owner's appointed designee.

1.10 Preconstruction Conference

Following the Effective Date of the Agreement, but before CONTRACTOR starts the Work at the site, a conference attended by CONTRACTOR, ENGINEER, City of Elkhart and others, as appropriate, will be held to discuss the schedules referred to in paragraph 1.7, as well as the Subcontractors proposed by Contractor for certain portions of the work, to discuss procedures for handling Shop Drawings and other submittals and for processing Applications for Payment, and to establish a working understanding among the parties as to the Work.

1.11 Non-Discrimination

In compliance with the Acts of Indiana General Assembly, 1933, Chapter 270, the Contractor hereby agrees:

- 1.11.1 That in the hiring of employees for the performance of work under this Contract or any Subcontract hereunder, no Contractor, Subcontractor, nor any person acting on behalf of such Contractor or Subcontractor shall, by reason of race or color, discriminate against any citizen qualified to do work to which the employment relates;
- 1.11.2 That no Contractor, Subcontractor, nor any person on his behalf shall, in any manner, discriminate against or intimidate any employee hired for the performance of work under this Contract on account of race or color;
- 1.11.3 That there may be deducted from the amount payable to the Contractor by the Owner under this contract, a penalty of Five Dollars (\$5.00) for each person for each calendar day during which such person was discriminated against or intimidated in violation of the provisions of this Contract; and
- 1.11.4 That this Contract may be canceled or terminated by the Owner, and all money due or to become due hereunder may be forfeited for a second or any subsequent violation of the terms or conditions of this section of the Contract.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

1.12 Insurance

1.12.1 Contractor's Liability Insurance:

a) The Contractor shall maintain such insurance as well as protect himself from claims under Workmen's Compensation Acts and other employee benefit acts; from claims for damages because of bodily injury, including death, to his employees and all others; and from claims for damages to property, any or all of which may arise out of or result from the Contractor's operation under the Contract, whether such operations be by himself or by any subcontractor, or anyone directly or indirectly employed by either of them. This insurance shall be written for not less than any limits of liability specified herein and shall name Elkhart County as an additional insured.

1.12.2 Contractor's Insurance:

The types and minimum amount of insurance to be provided for by the Contractor shall be as follows:

a) Workmen's Compensation and Occupational Disease Insurance

The Contractor shall provide Workmen's Compensation and Occupational Disease Insurance as required by law. Such policy shall specifically include coverage for the State of Indiana, and such adjoining states as required by the Contractor's operations.

b) Employer's Liability Insurance

The Contractor shall provide Employer's Liability with a minimum coverage of \$1,000,000.

c) Comprehensive General Liability Insurance

The Contractor shall maintain a Comprehensive General Liability form of Insurance with bodily injury of not less than \$1,000,000 for any one (1) occurrence, and \$2,000,000 aggregate. The insurance policy shall include the following:

1. Premises Operations: The policy shall include coverage for the following special hazards when applicable to the project:

- i) Property damage arising out of blasting or explosion.
- ii) Property damage arising out of collapse of or structural injury to any building or structure due to grading of land, excavation, borrowing, filling, backfilling, tunneling, pile driving, cofferdam work or caisson work or to moving, shoring, underpinning, raising, or demolition of any building or structure or rebuilding of any structural support thereof.
- iii) Injury to or destruction of wires, conduits, pipes, mains, sewers, and other similar property of any apparatus in connection therewith below the surface of ground, if caused by use of mechanical equipment.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

2. Contractual (Broad Form Indemnification): The Contractor agrees to indemnify and save harmless the Owner and the Engineer, their agents and employees, from and against all loss or expense (including costs and attorneys' fees) by reason of liability imposed by law upon the Owner or the Engineer for damages because of bodily injury, including death, at any time resulting therefrom, sustained by any person or persons or an account of damage to property is due or claimed to be due to negligence of the Contractor, his Subcontractors, employees or agents.

3. Contractor's Protective: The Contractor shall maintain this type of coverage on a "Blanket" basis to cover the operations of any subcontractors.

d) Automobile Liability Insurance

The Contractor shall maintain Comprehensive Automobile Liability Insurance with bodily injury liability limits of not less than \$1,000,000 for one (1) occurrence and \$2,000,000 aggregate. This coverage may be provided either as a separate policy or as part of the Comprehensive General Liability Policy described previously. The automobile insurance must include coverage for all owned, non-owned and hired vehicles.

e) Furnish Indiana State Forms No. 19 (Workmen's Compensation) and No.105 (Occupational Disease Act).

f) Umbrella Policy Insurance

The Contractor shall maintain a minimum \$3,000,000 Umbrella Policy in addition to their primary insurance.

1.13 Proof of Carriage Insurance

1.13.1 Contractor shall not commence work until he has obtained all insurance specified herein, has filed with the Owner one (1) copy of Certificate of Insurance, and such insurance has been approved by the Owner.

1.13.2 Should any Coverage approach expiration during the Contract period, it shall be renewed prior to its expiration, and certificate again filed with the Owner.

1.13.3 If any of such policies are canceled or are changed so as to reduce the coverage evidenced by the Certificate, at least ten (10) days prior written notice by registered mail of such cancellation or change shall be sent to the Owner.

1.13.4 All insurance provided for under this Section shall be written by Insurance Companies licensed to do business in Indiana and Countersigned by resident Indiana agent. The insurance company shall file with the Owner, one (1) copy of Affirmation of Authority, on the form furnished by the Engineer, as verification of the resident agent.

1.13.5 All insurance shall be maintained in full force and effect until the Contract has been fully and completely performed.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

ARTICLE 2 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

2.1 Intent

The Contract Documents comprise the entire agreement between OWNER and CONTRACTOR concerning the Work. The Contract Documents are complimentary; what is called for by one is as binding as if called for by all. The Contract Documents will be construed in accordance with the law of the place of the Project.

- 2.1.1 It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any Work, materials or equipment that may reasonably be inferred from the Contract Documents as being required to produce the intended result will be supplied whether or not specifically called for.
- 2.1.2 If during the performance of the Work, CONTRACTOR finds a conflict, error or discrepancy in the Contract Documents, CONTRACTOR shall so report to ENGINEER in writing at once and before proceeding with the Work affected thereby shall obtain a written interpretation or clarification from ENGINEER; however, CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any conflict, error or discrepancy in the Contract Documents unless CONTRACTOR had actual knowledge thereof or should reasonably have known thereof.

2.2 Amending and Supplementing Contract Documents:

The Contract Documents may be amended to provide for additions, deletions and revisions in the Work or to modify the terms and conditions thereof in one or more of the following ways:

- 2.2.1 A formal Written Amendment,
- 2.2.2 A Change Order, or
- 2.2.3 A Work Directive Change (pursuant to paragraph 8.1).

In addition, the requirements of the Contract Documents may be supplemented and minor variations and deviations in the Work may be authorized, in one or more of the following ways:

- 2.2.4 A Field Order,
- 2.2.5 ENGINEER's approval of a Shop Drawing or sample, or
- 2.2.6 ENGINEER's written interpretation or clarification.

ARTICLE 3 - AVAILABILITY OF LANDS; PHYSICAL CONDITIONS; REFERENCE POINTS3.1  
Availability of Lands

OWNER shall indicate, as shown in the Contract Documents, the lands upon which the Work is to be performed, rights-of-way and easements for access thereto, and such other lands which are designated for the use of CONTRACTOR. Easements for permanent structures or permanent changes in existing facilities will be obtained and paid for by OWNER, unless otherwise provided in the Contract Documents. If CONTRACTOR believes that any delay in OWNER's furnishing



**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

these lands, rights-of-way or easements entitles CONTRACTOR to an extension of the Contract Time, CONTRACTOR may make a claim for an extension of Contract Time.

3.2 Physical Conditions - Underground Facilities

The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the site is based on information and data furnished to OWNER or ENGINEER by the owners of such Underground Facilities or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

- 3.2.1 OWNER and ENGINEER shall not be responsible for the accuracy or completeness of any such information or data; and,
- 3.2.2 CONTRACTOR shall have full responsibility for reviewing and checking all such information and data, for locating all Underground Facilities shown or indicated in the Contract Documents, for coordination of the Work with the owners of such Underground Facilities during construction, for the safety and protection thereof, and repairing any damage thereto resulting from the Work, the cost of all of which will be considered as having been included in the Contract Price.
- 3.2.3 ENGINEER has coordinated utility relocation with I&M, NIPSCO and Frontier. CONTRACTOR shall coordinate with utility relocation efforts.

3.3 Not Shown or Indicated

If an Underground Facility is uncovered or revealed at or contiguous to the site which was not shown or indicated in the Contract Documents and which CONTRACTOR could not reasonably have been expected to be aware of, CONTRACTOR shall, promptly after becoming aware thereof and before performing any Work affected thereby (except in an emergency) as permitted by paragraph 4.2.1, identify the owner of such Underground Facility and give written notice thereof to that owner and to OWNER and ENGINEER. ENGINEER will promptly review the Underground Facility to determine the extent to which the Contract Documents should be modified to reflect and document the consequences of the existence of the Underground Facility, and the Contract Documents will be amended or supplemented to the extent necessary. During such time, CONTRACTOR shall be responsible for the safety and protection of such Underground Facility. CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, to the extent that they are attributable to the existence of any Underground Facility.

3.4 Assignment of Contract

The Contractor shall not assign this Contract or any part hereof without prior consent of the Owner.

ARTICLE 4 - CONTRACTOR'S RESPONSIBILITIES

4.1 Supervision and Superintendence

- 4.1.1 CONTRACTOR shall supervise and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences and procedures of construction, but CONTRACTOR shall not be responsible for the negligence of others in the design or selection of a specific

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

means, method, technique, sequence or procedure of construction which is indicated in and required by the Contract Documents. CONTRACTOR shall be responsible to see that the finished Work complies accurately with the Contract Documents.

- 4.1.2 CONTRACTOR shall keep on the Work at all times during its progress a competent resident superintendent, who shall not be replaced without written notice to OWNER and ENGINEER except under extraordinary circumstances. The superintendent will be CONTRACTOR's representative at the site and shall have authority to act on behalf of CONTRACTOR. All communications given to the superintendent shall be as binding as if given to CONTRACTOR.

4.2 Labor, Materials and Equipment

- 4.2.1 CONTRACTOR shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. CONTRACTOR shall at all times maintain good discipline and order at the site, particularly in connection with the safety or protection of persons or the Work or property at the site or adjacent thereto, and except as otherwise indicated in the Contract Documents.

- 4.2.2 Unless otherwise specified in the General Conditions, CONTRACTOR shall furnish and assume full responsibility for all materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities and all other facilities and incidentals necessary for the furnishing, performance, testing, start-up and completion of the Work.

- 4.2.3 All materials and equipment shall be of good quality and new, except as otherwise provided in the Contract Documents. If required by ENGINEER, CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment. All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable Supplier except as otherwise provided in the Contract Documents.

4.3 Substitutes or "Or-Equal" Items

- 4.3.1 Whenever materials or equipment are specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier the naming of the item is intended to establish the type, function and quality required. Unless the name is followed by words indicating that no substitution is permitted, materials or equipment of other Suppliers may be accepted by ENGINEER if sufficient information is submitted by CONTRACTOR to allow ENGINEER to determine that the material or equipment proposed is equivalent or equal to that named. The procedure for review by ENGINEER will include the following as supplemented in the General Conditions. Requests for review of substitute items of material and equipment will not be accepted by ENGINEER from anyone other than CONTRACTOR. If CONTRACTOR wishes to furnish or use a substitute item of material or equipment, CONTRACTOR shall make written application to ENGINEER for acceptance thereof, certifying that the proposed substitute will perform adequately the functions and achieve the results

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

called for by the general design, be similar and of equal substance to that specified and be suited to the same use as that specified. The application will state that the evaluation and acceptance of the proposed substitute will not prejudice CONTRACTOR's achievement of Substantial Completion on time, whether or not acceptance of the substitute for use in the Work will require a change in any of the Contract Documents. All variations of the proposed substitute from that specified will be identified in the application and available maintenance, repair and replacement service will be indicated. The application will also contain an itemized estimate of all costs that will result directly or indirectly from acceptance of such substitute, including costs of redesign and claims of other contractors affected by the resulting change, all of which shall be considered by ENGINEER in evaluating the proposed substitute. ENGINEER may require CONTRACTOR to furnish at CONTRACTOR's expense additional data about the proposed substitute.

- 4.3.2 If a specific means, method, technique, sequence or procedure of construction is indicated in or required by the Contract Documents, CONTRACTOR may furnish or utilize a substitute means, method, sequence, technique or procedure of construction acceptable to ENGINEER, if CONTRACTOR submits sufficient information to allow ENGINEER to determine that the substitute proposed is equivalent to that indicated or required by the Contract Documents.
- 4.3.3 ENGINEER will be allowed a reasonable time within which to evaluate each proposed substitute. ENGINEER will be the sole judge of acceptability, and no substitute will be ordered, installed or utilized without ENGINEER's prior written acceptance which will be evidenced by either a Change Order or an approved Shop Drawing. OWNER may require CONTRACTOR to furnish at CONTRACTOR's expense a special performance guarantee or other surety with respect to any substitute. ENGINEER will record time required by ENGINEER and ENGINEER's consultants in evaluating substitutions proposed by CONTRACTOR and in making changes in the Contract Documents occasioned thereby. Whether or not ENGINEER accepts a proposed substitute, CONTRACTOR shall reimburse OWNER for the charges of ENGINEER and ENGINEER's consultants for evaluating each proposed substitute.

#### 4.4 Contractor Responsibility

CONTRACTOR shall be fully responsible to OWNER and ENGINEER for all acts and omissions of the Subcontractor, Suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR just as CONTRACTOR is responsible for CONTRACTOR's own acts and omissions. Nothing in the Contract Documents shall create any contractual relationship between OWNER or ENGINEER and any such Subcontractor, Supplier or other person or organization, nor shall it create any obligation on the part of OWNER or ENGINEER to pay or to see to the payment of any monies due any such Subcontractor, Supplier or other person or organization except as may otherwise be required by Laws and Regulations.

#### 4.5 Subcontractor Responsibility

All Work performed for CONTRACTOR by a Subcontractor will be pursuant to an appropriate agreement between CONTRACTOR and the Subcontractor which specifically binds the Subcontractor to the applicable terms and conditions of the Contract Documents for the benefit of OWNER and ENGINEER.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

4.6 Permits

Unless otherwise provided in the General Conditions, CONTRACTOR shall obtain and pay for all construction permits and licenses.

4.7 Laws and Regulations

4.7.1 CONTRACTOR shall give all notices and comply with all Laws and Regulations applicable to furnishing and performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither OWNER nor ENGINEER shall be responsible for monitoring CONTRACTOR's compliance with any Laws or Regulations.

4.7.2 If CONTRACTOR observes that the Specifications or Drawings are at variance with any Laws or Regulations, CONTRACTOR shall give ENGINEER prompt written notice thereof, and any necessary changes will be authorized by one of the methods indicated in paragraph 2.2. If CONTRACTOR performs any Work knowing or having reason to know that it is contrary to such Laws or Regulations, and without such notice to ENGINEER, CONTRACTOR shall bear all costs arising therefrom; however, it shall not be CONTRACTOR's primary responsibility to make certain that the Specifications and Drawings are in accordance with such Laws and Regulations.

4.8 Taxes

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

4.9 Use of Premises

4.9.1 CONTRACTOR shall confine construction equipment, the storage of materials and equipment and the operations of workers to the Project site and land and areas identified in and permitted by the Contract Documents and other land and areas permitted by Laws and Regulations, rights-of-way, permits and easements, and shall not unreasonably encumber the premises with construction equipment or other materials or equipment. CONTRACTOR shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof or of any land or areas contiguous thereto, resulting from the performance of the Work. Should any claim be made against OWNER or ENGINEER by any such owner or occupant because of the performance of the Work, CONTRACTOR shall promptly attempt to settle with such other party by agreement or otherwise resolve the claim by arbitration or at law. CONTRACTOR shall, to the fullest extent permitted by Laws and Regulations, indemnify and hold OWNER and ENGINEER harmless from and against all claims, damages, losses and expenses (including, but not limited to, fees of engineers, architects, attorneys and other professionals and court and arbitration costs) arising directly, indirectly or consequentially out of any action, legal or equitable, brought by any such other party against OWNER or ENGINEER to the extent based on a claim arising out of CONTRACTOR's performance of the Work.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

4.9.2 During the progress of the Work, CONTRACTOR shall keep the premises free from accumulations of waste materials, rubbish and other debris resulting from the Work. At the completion of the Work CONTRACTOR shall remove all waste materials, rubbish and debris from and about the premises as well as all tools, appliances, construction equipment and machinery, and surplus materials, and shall leave the site clean and ready for occupancy by OWNER. CONTRACTOR shall restore to original condition all property not designated for alteration by the Contract Documents.

4.9.3 CONTRACTOR shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall CONTRACTOR subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

4.10 Record Documents

CONTRACTOR shall maintain in a safe place at the site one (1) record copy of all Drawings, Specifications, Addenda, Written Amendments, Change Orders, Work Directive Changes, Field Orders and written interpretations and clarifications issued in good order and annotated to show all changes made during construction. These record documents together with all approved samples and a counterpart of all approved Shop Drawings will be available to ENGINEER for reference. Upon completion of the Work, these record documents, samples and Shop Drawings will be delivered to ENGINEER for OWNER.

4.11 Safety and Protection

4.11.1 CONTRACTOR shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

- a) All employees on the Work and other persons and organizations who may be affected thereby;
- b) All the Work and materials and equipment to be incorporated therein, whether in storage on or off the site; and
- c) Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities and Underground Facilities not designated for removal, relocation or replacement in the course of construction.

4.11.2 CONTRACTOR shall comply with all applicable Laws and Regulations of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR shall notify owners of adjacent property and of Underground Facilities and utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation and replacement of their property. All damage, injury or loss to any property referred to in paragraph 4.11.1(b) or 4.11.1(c) caused, directly or indirectly, in whole or in part, by CONTRACTOR, any Subcontractor, Supplier or any other person or organization directly or indirectly employed by any

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, shall be remedied by CONTRACTOR.

- 4.11.3 CONTRACTOR shall designate a responsible representative at the site whose duty shall be the prevention of accidents. This person shall be CONTRACTOR's superintendent unless otherwise designated in writing by CONTRACTOR to OWNER.

4.12 Emergencies

In emergencies affecting the safety or protection of persons or the Work or property at the site or adjacent thereto, CONTRACTOR, without special instruction or authorization from ENGINEER or OWNER, is obligated to act to prevent threatened damage, injury or loss. CONTRACTOR shall give ENGINEER prompt written notice if CONTRACTOR believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby. If ENGINEER determines that a change in the Contract Documents is required because of the action taken in response to an emergency, a Work Directive Change or Change Order will be issued to document the consequences of the changes or variations.

4.13 Shop Drawings and Samples

- 4.13.1 After checking and verifying all field measurements and after complying with applicable procedures specified in the General Conditions, CONTRACTOR shall submit to ENGINEER for review and approval three (3) copies of all Shop Drawings. All submissions will be identified as ENGINEER may require. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials and similar data to enable ENGINEER to review the information as required.
- 4.13.2 CONTRACTOR shall also submit to ENGINEER for review and approval with such promptness as to cause no delay in Work, all samples required by the Contract Documents.
- 4.13.3 At the time of each submission, CONTRACTOR shall give ENGINEER specific written notice of each variation that the Shop Drawings or samples may have from the requirements of the Contract Documents, and, in addition, shall cause a specific notation to be made on each Shop Drawing submitted to ENGINEER for review and approval of each such variation.
- 4.13.4 ENGINEER will review and approve with reasonable promptness Shop Drawings and samples, but ENGINEER's review and approval will be only for conformance with the design concept of the Project and for compliance with the information given in the Contract Documents and shall not extend to means, methods, techniques, sequences or procedures of construction.
- 4.13.5 ENGINEER's review and approval of Shop Drawings or samples shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract Documents unless CONTRACTOR has in writing called ENGINEER's attention to each such variation at the time of submission.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

4.13.6 Where a Shop Drawing or sample is required by the Specifications, any related Work performed prior to ENGINEER's review and approval of the pertinent submission will be the sole expense and responsibility of CONTRACTOR.

4.14 Continuing the Work

CONTRACTOR shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with OWNER. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by paragraph 13.4 or as CONTRACTOR and OWNER may otherwise agree in writing.

4.15 Indemnification:

To the fullest extent permitted by Laws and Regulations CONTRACTOR shall indemnify and hold harmless OWNER and ENGINEER and their consultants, agents and employees from and against all claims, damages, losses, and expenses, direct, indirect or consequential (including but not limited to fees and charges of engineer, architects, attorneys and other professionals and court and arbitration costs) arising out of or resulting from the performance of the Work, provided that any such claim, damage, loss or expense:

4.15.1 (a) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself) including the loss of use resulting there from and (b) is caused in whole or in part by any negligent act or omission of CONTRACTOR, any Subcontractor, any person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder or arises by or is imposed by Law and Regulations regardless of the negligence of any such party.

4.15.2 In any and all claims against OWNER or ENGINEER or any of their consultants, agents or employees by any employee of CONTRACTOR, any Subcontractor, any person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, the indemnification obligation under paragraph 1.12.2 (c)2 shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for CONTRACTOR or any such Subcontractor or other person or organization under workers' or workmen's compensation acts, disability benefit acts or other employee benefit acts.

4.16 Sanitation

4.16.1 The Contractor shall introduce and enforce among his employees, such regulations in regard to cleanliness and the disposal of garbage and wastes as shall comply with the Local ordinances. The Contractor shall take such means as the Owner may direct to effectually prevent the creation of a nuisance at the work site or any part of the property of the Owner. Under no circumstances shall the Contractor create or maintain a nuisance. The Contractor shall construct toilets and maintain them in a sanitary condition, properly secluded from public observation at such points as shall be approved.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

4.16.2 All waste, rubbish and debris – whether personal or from construction related processes – shall be removed from the job site and adjacent properties by hauling away and shall not be buried or discarded.

4.17 Road Closing Requirements

Work within the road right-of-way that necessitates a full closure of the road or any lane restrictions requires that the contractor notify **48 hours prior to the commencement of work** all that apply from the following list:

**ROAD CLOSING – NOTIFICATION NUMBERS**

Fax, call, or mail notification of road/bridge closing to the appropriate people

Please note date of successful notification

**POLICE, FIRE, EMS**

Elkhart County PSCC (911 Center) 533-4151

**SCHOOLS**

Baugo	293-8583	fax:
Concord	875-6577	fax: 875-1617
		fax: 875-8762
Elkhart	262-5695	fax: 262-5750
Fairfield	831-2188	fax:
Goshen	533-8631	fax:
Middlebury	825-9410	fax:
Northwood	.574-773-3131	fax:

**POST OFFICES**

Bristol	848-4713	fax: 533-9998
Elkhart	293-5502	fax: 293-5501
Goshen	533-3915	fax: 533-8077
Middlebury	825-2505	fax:
Wakarusa	862-2010	fax:

**NEWS MEDIA**

Elkhart Truth	294-1661	fax: 294-3895
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**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

Goshen News 533-2151 fax: 534-8830

Channel 16 574-631-1616 fax: 293-3297

fax: 631-1639

Channel 22 574-293-3148 fax: 289-0622

Channel 28 574-679-4545 fax: 522-7609

**OTHERS:**

Elkhart County Hwy..... 533-0538

Elkhart County Eng..... 534-9394

Elkhart County requires a written notification of the agencies notified, including time and date of successful notification. This notification must be given to Elkhart County Highway 24 hours prior to road closings or lane restrictions. This may be faxed to Elkhart County Highway.

The Contractor shall notify all applicable offices, agencies, media and schools, including Elkhart County Highway 24 hours prior to the removal of any lane restrictions or closures.

The Contractor shall coordinate the specific timing of the activation of any new signalization system, reopening, etc. When practical, the Contractor shall provide access through the site for emergency vehicle traffic.

**ARTICLE 5 - OTHER WORK**

**5.1 Related Work at Site**

OWNER may perform other work related to the Project at the site by OWNER's own forces, have work performed by utility owners, or let other direct contracts.

- 5.1.1 CONTRACTOR shall afford each utility owner and other contractor who is a party to such a direct contract (or OWNER, if OWNER is performing the additional work with OWNER's employees) proper and safe access to the site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such work, and shall properly connect and coordinate the Work with theirs, CONTRACTOR shall do all cutting, fitting and patching of the Work that may be required to make its several parts come together properly and integrate with such other work.

**ARTICLE 6 - OWNER'S RESPONSIBILITIES**

**6.1 Communication**

OWNER shall issue all communications to CONTRACTOR through ENGINEER.

**6.2 Appointment of Engineer**

In case of termination of the employment of ENGINEER, OWNER shall appoint an engineer whom CONTRACTOR makes no reasonable objection to, whose status under the Contract Documents

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

shall be that of the former ENGINEER. Any dispute in connection with such appointment shall be subject to arbitration.

6.3 Payment

OWNER shall furnish the data required of OWNER under the Contract Documents promptly and shall make payments to CONTRACTOR promptly after they are due.

6.4 Change Orders

OWNER is obligated to execute Change Orders as indicated in paragraph 8.4.

6.5 Inspection

OWNER shall provide full time inspection for the project. OWNER's responsibility in respect of certain inspections, tests and approvals is set forth in paragraph 11.3.

6.6 Service Termination

In connection with OWNER's right to stop Work or suspend Work, see paragraphs 11.5 and 13.1. Paragraph 13.2 deals with OWNER's right to terminate services of CONTRACTOR under certain circumstances.

ARTICLE 7 - ENGINEER'S STATUS DURING CONSTRUCTION

7.1 Owner's Representative

ENGINEER will be OWNER's representative during the construction period. The duties and responsibilities and the limitations of authority of ENGINEER as OWNER's representative during construction are set forth in the Contract Documents and shall not be extended without written consent of OWNER and ENGINEER.

7.2 Visits to Site

ENGINEER will make visits to the site at intervals appropriate to the various stages of construction to observe the progress and quality of the executed Work and to determine, in general, if the Work is proceeding in accordance with the Contract Documents. ENGINEER will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. ENGINEER's efforts will be directed toward providing for OWNER a greater degree of confidence that the completed Work will conform to the Contract Documents. On the basis of such visits and on-site observations as an experienced and qualified design professional, ENGINEER will keep OWNER informed of the progress of the Work and will endeavor to guard OWNER against defects and deficiencies in the Work.

7.3 Project Representation

If OWNER and ENGINEER agree, ENGINEER will furnish a Resident Project Representative to assist ENGINEER in observing the performance of the Work. OWNER will provide full time on-site inspection of the project.

7.4 Clarifications and Interpretations

ENGINEER will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Contract Documents (in the form of Drawings or otherwise) as ENGINEER

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract Documents.

7.5 Authorized Variations in Work

ENGINEER may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Time and are consistent with the overall intent of the Contract Documents. These may be accomplished by a Field Order and will be binding on OWNER, and also on CONTRACTOR who shall perform the Work involved promptly.

7.6 Rejecting Defective Work

ENGINEER will have authority to disapprove or reject Work which ENGINEER believes to be defective, and will also have authority to require special inspection or testing of the Work at CONTRACTOR'S expense.

7.7 Decisions on Disputes

7.7.1 ENGINEER will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. Claims, disputes and other matters relating to the acceptability of the Work or the interpretation of the requirements of the Contract Documents pertaining to the performance and furnishing of the Work and claims under Articles 9 and 10 in respect to changes in the Contract Price or Contract Time will be referred initially to ENGINEER in writing with a request for a formal decision in accordance with this paragraph, which ENGINEER will render in writing within a reasonable time. Written notice of each such claim, dispute and other matter will be delivered by the claimant to ENGINEER and the other party to the Agreement promptly (but in no event later than thirty (30) days) after the occurrence of the event giving rise thereto, and written supporting data will be submitted to ENGINEER and the other party within sixty (60) days after such occurrence unless ENGINEER allows an additional period of time to ascertain more accurate data in support of the claim.

7.7.2 When functioning as interpreter and judge under paragraphs 7.7.1 ENGINEER will not show partiality to OWNER or CONTRACTOR and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

7.8 Limitations on Engineer's Responsibilities

Neither ENGINEER's authority to act under this Article 7 or elsewhere in the Contract Documents nor any decision made by ENGINEER in good faith either to exercise or not exercise such authority shall give rise to any duty or responsibility of ENGINEER to CONTRACTOR, any Subcontractor, any Supplier, or any other person or organization performing any of the Work, or to any surety for any of them.

7.8.1 ENGINEER will not be responsible for CONTRACTOR's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, and ENGINEER will not be responsible for CONTRACTOR's failure to perform or furnish the Work in accordance with the Contract Documents.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

7.8.2 ENGINEER will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractor, any Supplier, or of any other person or organization performing or furnishing any of the Work.

ARTICLE 8 - CHANGES IN THE WORK8.1 Work Modifications

Without invalidating the Agreement and without notice to any surety, OWNER may, at any time or from time to time, order additions, deletions or revisions in the Work; these will be authorized by a Written Amendment, a Change Order, or a Work Directive Change. Upon receipt of any such document, CONTRACTOR shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

8.2 Disagreement

If OWNER and CONTRACTOR are unable to agree as to the extent, if any, of an increase or decrease in the Contract Price or an extension or shortening of the Contract Time that should be allowed as a result of a Work Directive Change, a claim may be made therefore as provided in Article 9 or Article 10.

8.3 Contract Price and Time

CONTRACTOR shall not be entitled to an increase in the Contract Price or an extension of the Contract Time with respect to any Work performed that is not required by the Contract Documents.

8.4 Change orders

OWNER and CONTRACTOR shall execute appropriate Change Orders covering:

8.4.1 Changes in the Work which is ordered by OWNER.

8.4.2 Changes in the Contract Price or Contract Time which are agreed to by the parties.

8.4.3 Changes in the Contract Price or Contract Time which embody the substance of any written decision rendered by ENGINEER.

8.5 Notification of Change

If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be CONTRACTOR's responsibility, and the amount of each applicable Bond will be adjusted accordingly.

ARTICLE 9 - CHANGE OF CONTRACT PRICE

The Contract Price constitutes the total compensation (subject to authorized adjustments) payable to CONTRACTOR for performing the Work. All duties, responsibilities and obligations assigned to or undertaken by CONTRACTOR shall be at his expense without change in the Contract Price.

9.1 Change Order

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

The Contract Price may only be changed by a Change Order or by a Written Amendment.

9.2 Determination of Contract Price

The value of any Work covered by a Change Order (extra work order) for an increase or decrease in the Contract Price shall be determined in one of the following ways:

- 9.2.1 Where the Work involved is covered by unit prices contained in the Contract Documents, by application of unit prices to the quantities of the items involved.
- 9.2.2 On the basis of the actual Cost of the Work, plus the allowable Contractor's mark-up as per INDOT Specification 109.05 added thereon for overhead and profit.

9.3 Cost of the Work

The term Cost of the Work means the sum of all costs necessarily incurred and paid by CONTRACTOR in the proper performance of the Work. The term Cost of the Work shall **not** include any of the following:

- 9.3.1 Payroll costs and other compensation of CONTRACTOR's officers, executives, principals (of partnership and sole proprietorships), general managers, attorneys, auditors, accountants, purchasing and contracting agents, CONTRACTOR whether at the site or in CONTRACTOR's principal or a branch office for general administration of the Work.
- 9.3.2 Expenses of CONTRACTOR's principal and branch offices other than CONTRACTOR's office at the site.
- 9.3.3 Any part of CONTRACTOR's capital expenses, including interest on CONTRACTOR's capital employed for the Work and charges against CONTRACTOR for delinquent payments.
- 9.3.4 Cost of premiums for all Bonds and for all insurance whether or not CONTRACTOR is required by the Contract Documents to purchase and maintain the same.
- 9.3.5 Costs due to the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied and making good any damage to property.

ARTICLE 10 - CHANGE OF CONTRACT TIME

The Contract Time may only be changed by a Change Order or a Written Amendment. Any claim for an extension or shortening of the Contract Time shall be based on written notice delivered by the party making the claim to the other party and to ENGINEER promptly (but in no event later than fifteen (15) days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the extent of the claim with supporting data shall be delivered within thirty (30) days after such occurrence (unless ENGINEER allows an additional period of time to ascertain more accurate data in support of the claim) and shall be accompanied by the claimant's written statement that the adjustment claimed is the entire adjustment to which the

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

claimant has reason to believe it is entitled as a result of the occurrence of said event. All claims for adjustment in the Contract Time shall be determined by ENGINEER.

No extension of Contract Time shall be allowed for weather, changes in quantities placed, or ENGINEER review times set forth in this contract.

**ARTICLE 11 - WARRANTY AND GUARANTEE; TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK**

**11.1 Warranty and Guarantee**

CONTRACTOR warrants and guarantees to OWNER and ENGINEER that all Work will be in accordance with the Contract Documents and will not be defective. Prompt notice of all defects shall be given to CONTRACTOR. All defective Work, whether or not in place, may be rejected, corrected or accepted as provided in this Article 11.

**11.2 Access to Work**

ENGINEER and ENGINEER's representatives, other representatives of OWNER, testing agencies and governmental agencies with jurisdictional interests will have access to the Work at reasonable times for their observation, inspecting and testing. CONTRACTOR shall provide proper and safe conditions for such access.

**11.3 Tests and Inspections**

CONTRACTOR shall give OWNER and ENGINEER timely notice of readiness of the Work for all required inspections, tests or approvals.

11.3.1 If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) to specifically be inspected, tested or approved, CONTRACTOR shall assume full responsibility therefore, pay all costs in connection therewith and furnish OWNER the required certificates of inspection, testing or approval.

11.3.2 The Contractor shall assume full responsibility for paying all costs in connection with testing or certification of materials required under INDOT Standard Specifications. In the case of failed or rejected materials or product used in construction of the project either by CONTRACTOR or SUBCONTRACTORS, independent third-party testing may be used at CONTRACTOR'S expense.

11.3.3 If any Work (including the work of others) that is to be inspected, tested or approved is covered without written concurrence of OWNER or ENGINEER, it must, if requested by OWNER, be uncovered for observation. Such uncovering shall be at CONTRACTOR's expense unless CONTRACTOR has given OWNER timely notice of CONTRACTOR's intention to cover the same and OWNER has not acted with reasonable promptness in response to such notice.

11.3.4 Neither observations by OWNER or ENGINEER nor inspections, tests or approvals by others shall relieve CONTRACTOR from CONTRACTOR's obligations to perform the Work in accordance with the Contract Documents.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

11.4 Uncovering Work

11.4.1 If any Work is covered contrary to the written request of OWNER or ENGINEER, it must, if requested by OWNER, be uncovered for ENGINEER's observation and replaced at CONTRACTOR's expense.

11.4.2 If OWNER or ENGINEER considers it necessary or advisable that covered Work be observed by ENGINEER or inspected or tested by others, CONTRACTOR, at ENGINEER's request, shall uncover, expose or otherwise make available for observation, inspection or testing as ENGINEER may require, that portion of the Work in question, furnishing all necessary labor, material and equipment.

11.5 Owner May Stop the Work

If the Work is defective, or CONTRACTOR fails to supply sufficient skilled workers or suitable materials or equipment, or fails to furnish or perform the Work in such a way that the completed Work will conform to the Contract Documents, OWNER may order CONTRACTOR to stop the Work, or any portion thereof, until the cause for such order has been eliminated.

11.6 Correction or Removal of Defective Work

If required by ENGINEER, CONTRACTOR shall promptly, as directed, either correct all defective Work, whether or not fabricated, installed or completed, or, if the Work has been rejected by ENGINEER, remove it from the site and replace it with non-defective Work. CONTRACTOR shall bear all direct, indirect and consequential costs of such correction or removal (including but not limited to fees and charges of engineers, attorneys and other professionals) made necessary thereby.

11.7 Three Years Correction Period

If, within three (3) years after the date of Final Acceptance, any Work is found to be defective, CONTRACTOR shall promptly, without cost to OWNER and in accordance with OWNER's written instructions, either correct such defective Work, or, if it has been rejected by OWNER and/or Engineer remove it from the site and replace it with non-defective work. If CONTRACTOR does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, OWNER may have the defective Work corrected or the rejected Work removed and replaced, and all direct, indirect and consequential costs of such removal and replacement (including but not limited to fees and charges of engineers, attorneys and other professionals) will be paid by CONTRACTOR.

11.8 Maintenance Bond

Each Contractor shall furnish prior to Final Acceptance a Maintenance Bond (form attached) in an amount at least equal to ten percent (10%) of the Contract Price, guaranteeing for a period of three (3) years after the date of acceptance by the Owner, that all workmanship and materials entered into the Contract are in accordance with the Plans and Specifications. Each Contractor shall remove any defects due to faulty workmanship and/or materials and shall pay for any damage to other work resulting there from which shall appear within the guarantee period. Should such quality assurance tests, as are called for in the contract Plans and Specifications (e.g., roll test, density, concrete strength, etc.), not be performed or if the work is not performed within reasonable conformity to the Plans and Specifications, the maintenance bond period may be extended to six (6) years.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

11.9 Acceptance of Defective Work:

If instead of requiring correction or removal and replacement of defective Work, OWNER prefers to accept it, OWNER may do so. CONTRACTOR shall bear all direct, indirect and consequential costs attributable to OWNER's evaluation of and determination to accept such defective Work. If any such acceptance occurs prior to ENGINEER's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and OWNER shall be entitled to an appropriate decrease in the Contract Price.

11.10 OWNER May Correct Defective Work:

If CONTRACTOR fails within a reasonable time after written notice of ENGINEER to proceed to correct and to correct defective Work or to remove and replace rejected Work as required by ENGINEER in accordance with paragraph 11.6, or if CONTRACTOR fails to perform the Work in accordance with the Contract Documents, or if CONTRACTOR fails to comply with any other provision of the Contract Documents, OWNER may, after seven (7) days' written notice to CONTRACTOR, correct and remedy any such deficiency. All direct, indirect and consequential costs of OWNER in exercising such rights and remedies will be charged against CONTRACTOR in an amount approved as to reasonableness by ENGINEER, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and OWNER shall be entitled to an appropriate decrease in the Contract Price.

ARTICLE 12 - PAYMENTS TO CONTRACTOR AND COMPLETION

12.1 Schedule of Values

The schedule of values (itemized proposal) established at contract unit prices will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to ENGINEER. Progress payments on account of Unit Price Work will be based on the number of units completed.

12.2 Application for Progress Payment

At least fifteen (15) days before each regularly scheduled County Commissioners Meeting, CONTRACTOR shall submit to ENGINEER for review an Application for Payment filled out and signed by CONTRACTOR covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents.

12.3 Contractor's Warranty of Title

CONTRACTOR warrants and guarantees that title to all Work, materials and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to OWNER no later than the time of payment free and clear of all Liens.

12.4 Review of Applications for Progress Payment

12.4.1 ENGINEER will, within ten (10) days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to OWNER, or return the Application to CONTRACTOR indicating in writing ENGINEER's reasons for refusing to recommend payment. In the latter case, CONTRACTOR may make the necessary corrections and resubmit the Application. Ten (10) days after presentation of the Application for Payment with ENGINEER's recommendation, the amount recommended will become due and



**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

when due will be paid by OWNER to CONTRACTOR. All progress payments will be subject to a ten Percent (10%) retainage that will not be released until Maintenance Bond is received.

12.4.2 ENGINEER's recommendation of any payment requested in an Application for Payment will constitute a representation by ENGINEER to OWNER, based on ENGINEER's on-site observations of the Work in progress as an experienced and qualified design professional and on ENGINEER's review of the Application for Payment and the accompanying data and schedules that the Work has progressed to the point indicated; that, to the best of ENGINEER's knowledge, information and belief, the quality of the Work is in accordance with the Contract Documents and that CONTRACTOR is entitled to payment of the amount recommended. However, by recommending any such payment ENGINEER will not thereby be deemed to have represented that exhaustive or continuous on-site inspections have been made to check the quality or the quantity of the Work beyond the responsibilities specifically assigned to ENGINEER in the Contract Documents or that there may not be other matters or issues between the parties that might entitle CONTRACTOR to be paid additionally by OWNER or OWNER to withhold payment to CONTRACTOR.

12.4.3 ENGINEER's recommendation of final payment will constitute an additional representation by ENGINEER to OWNER that the conditions precedent to CONTRACTOR's being entitled to final payment as set forth in paragraph 12.9 have been fulfilled.

12.4.4 ENGINEER may refuse to recommend the whole or any part of any payment if, in ENGINEER's opinion, it would be incorrect to make such representations to OWNER. ENGINEER may also refuse to recommend any such payment, or, because of subsequently discovered evidence or the results of subsequent inspections or tests, nullify any such payment previously recommended, to such extent as may be necessary in ENGINEER's opinion to protect OWNER from loss because:

- a) The Work is defective, or completed Work has been damaged requiring correction or replacement.
- b) The Contract Price has been reduced by Written Amendment or Change Order.
- c) OWNER has been required to correct defective Work or complete Work in accordance with paragraph 11.10, or
- d) Of ENGINEER's actual knowledge of the occurrence of any of the events enumerated in paragraphs 13.2.1 through 13.2.9 inclusive.

OWNER may refuse to make payment of the full amount recommended by ENGINEER because claims have been made against OWNER on account of CONTRACTOR's performance or furnishing of the Work or Liens have been filed in connection with the Work or there are other items entitling OWNER to a set-off against the amount recommended, but OWNER must give CONTRACTOR immediate written notice (with a copy to ENGINEER) stating the reasons for such action.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

12.5 Substantial Completion

When CONTRACTOR considers the entire Work ready for its intended use (that is, use by the public) and all work items are complete, CONTRACTOR shall notify OWNER and ENGINEER in writing that the entire Work is substantially complete and request that ENGINEER issue a certificate of Substantial Completion. Within seven (7) calendar days for a contract price under \$1,000,000.00 and fourteen (14) calendar days otherwise, OWNER, CONTRACTOR and ENGINEER shall make an inspection of the Work to determine the status of completion. If ENGINEER does not consider the Work substantially complete, ENGINEER will notify CONTRACTOR in writing giving the reasons therefore. If ENGINEER considers the Work substantially complete, ENGINEER will prepare and deliver to OWNER a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be corrected before final payment.

The ENGINEER may recommend to the OWNER that a Waiver of Time be provided to the CONTRACTOR for the seven (7) or fourteen (14) calendar days listed herein if the CONTRACTOR has demobilized from the site, and there are no remaining defective or incomplete Work items. A Waiver of Time is a document that waives the Liquidated Damages for the seven (7) or fourteen (14) day time-frame. A Waiver of Time may be given for part or the entirety of the seven (7) or fourteen (14) day period listed herein. The amount of time provided in the Waiver of Time is at the discretion of the OWNER.

12.6 Partial Utilization

Use by OWNER of any finished part of the Work, which has specifically been identified in the Contract Documents, or which OWNER, ENGINEER and CONTRACTOR agree constitutes a separately functioning and useable part of the Work that can be used by OWNER without significant interference with CONTRACTOR's performance of the remainder of the Work, may be accomplished prior to Substantial Completion of all the Work subject to the following:

12.6.1 OWNER at any time may request CONTRACTOR in writing to permit OWNER to use any such part of the Work which OWNER believes to be ready for its intended use and substantially complete. If CONTRACTOR agrees, CONTRACTOR will certify to OWNER and ENGINEER that said part of the Work is substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. CONTRACTOR at any time may notify OWNER and ENGINEER in writing that CONTRACTOR considers any such part of the Work ready for its intended use and substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. Within a reasonable time after either such request, OWNER, CONTRACTOR and ENGINEER shall make an inspection of that part of the Work to determine its status of completion. If ENGINEER does not consider that part of the Work to be substantially complete, ENGINEER will notify OWNER and CONTRACTOR in writing giving the reasons therefore. If ENGINEER considers that part of the Work to be substantially complete, the provisions of paragraph 12.5 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

12.6.2 OWNER may at any time request CONTRACTOR in writing to permit OWNER to take over operation of any such part of the Work although it is not substantially complete. A copy of such request will be sent to ENGINEER and within a reasonable time thereafter OWNER, CONTRACTOR and ENGINEER shall make

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

an inspection of that part of the Work to determine its status of completion and will prepare a list of the items remaining to be completed or corrected thereon before final payment. If CONTRACTOR does not object in writing to OWNER and ENGINEER that such part of the Work is not ready for separate operation by OWNER, ENGINEER will finalize the list of items to be completed or corrected and will deliver such list to OWNER and CONTRACTOR together with a written recommendation as to the division of responsibilities pending final payment between OWNER and CONTRACTOR with respect to security, operation, safety, maintenance, utilities, insurance, warranties and guarantees for that part of the Work which will become binding upon OWNER and CONTRACTOR at the time when OWNER takes over such operation (unless they shall have otherwise agreed in writing and so informed ENGINEER). During such operation and prior to Substantial Completion of such part of the Work, OWNER shall allow CONTRACTOR reasonable access to complete or correct items on said list and to complete other related Work.

12.7 Final Inspection

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

12.8 Final Application for Payment

After CONTRACTOR has completed all such corrections to the satisfaction of ENGINEER and delivered all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, marked-up record documents and other documents--all as required by the Contract Documents, and after ENGINEER has indicated that the Work is acceptable, CONTRACTOR may make application for final payment following the procedure for progress payments.

12.9 Final Payment and Acceptance

12.9.1 If, on the basis of ENGINEER's observation of the Work during construction and final inspection, and ENGINEER's review of the final Application for Payment and accompanying documentation--all as required by the Contract Documents, ENGINEER is satisfied that the Work has been completed and CONTRACTOR's other obligations under the Contract Documents have been fulfilled, ENGINEER will, within ten (10) days after receipt of final Application for Payment, indicate in writing ENGINEER's recommendation of payment and present the Application to OWNER for payment. Thereupon ENGINEER will give written notice to OWNER and CONTRACTOR that the Work is acceptable subject to the provisions of paragraph 12.15. Otherwise, ENGINEER will return the Application to CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case CONTRACTOR shall make the necessary corrections and resubmit the Application. Thirty (30) days after presentation to OWNER of the Application and accompanying documentation, in appropriate form and substance, and with ENGINEER's recommendation and notice of acceptability, the amount recommended by ENGINEER will become due and will be paid by OWNER to CONTRACTOR.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

12.9.2 If, through no fault of CONTRACTOR, final completion of the Work is significantly delayed and if ENGINEER so confirms, OWNER shall, upon receipt of CONTRACTOR's final Application for Payment and recommendation of ENGINEER, and without terminating the Agreement, make payment of the balance due for that portion of the Work fully completed and accepted.

12.10 Contractor's Continuing Obligation

CONTRACTOR's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. Neither recommendation of any progress or final payment by ENGINEER, nor the issuance of a certificate of Substantial Completion, nor any payment by OWNER to CONTRACTOR under the Contract Documents, nor any use or occupancy of the Work or any part thereof by OWNER, nor any act of acceptance by OWNER nor any failure to do so, nor any review and approval of a Shop Drawing or sample submission, nor the issuance of a notice of acceptability by ENGINEER, nor any correction of defective Work by OWNER will constitute an acceptance of Work not in accordance with the Contract Documents or a release of CONTRACTOR's obligation to perform the Work in accordance with the Contract Documents (except as provided in paragraph 12.11).

12.11 Waiver of Claims

The making and acceptance of final payment will constitute:

12.11.1 A waiver of all claims by OWNER against CONTRACTOR, except claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to paragraph 12.10 or from failure to comply with the Contract Documents or the terms of any special guarantees specified therein; however, it will not constitute a waiver by OWNER of any rights in respect of CONTRACTOR's continuing obligations under the Contract Documents; and

12.11.2 A waiver of all claims by CONTRACTOR against OWNER other than those previously made in writing and still unsettled.

ARTICLE 13 - SUSPENSION OF WORK AND TERMINATION

13.1 OWNER May Suspend Work

OWNER may, at any time and without cause, suspend the Work or any portion thereof for a period of not more than one hundred eighty (180) days by notice in writing to CONTRACTOR and ENGINEER which will fix the date on which Work will be resumed. CONTRACTOR shall resume the Work on the date so fixed. CONTRACTOR shall be allowed an increase in the extension of the Contract Time directly attributable to any suspension.

13.2 Conditions of Termination by Owner

Upon the occurrence of any one or more of the following events:

13.2.1 If CONTRACTOR commences a voluntary case under any chapter of the Bankruptcy Code (Title 11, United States Code), as now or hereafter in effect, or if CONTRACTOR takes any equivalent or similar action by filing a petition or

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

otherwise under any other federal or state law in effect at such time relating to the bankruptcy or insolvency;

- 13.2.2 If a petition is filed against CONTRACTOR under any chapter of the Bankruptcy Code as now or hereafter in effect at the time of filing, or if a petition is filed seeking any such equivalent or similar relief against CONTRACTOR under any other federal or state law in effect at the time relating to bankruptcy or insolvency;
  - 13.2.3 If CONTRACTOR makes a general assignment for the benefit of creditors;
  - 13.2.4 If a trustee, receiver, custodian or agent of CONTRACTOR is appointed under applicable law or under contract, whose appointment or authority to take charge of property of CONTRACTOR is for the purpose of enforcing Lien against such property or for the purpose of general administration of such property for the benefit of CONTRACTOR's creditors;
  - 13.2.5 If CONTRACTOR admits in writing an inability to pay its debts generally as they become due;
  - 13.2.6 If CONTRACTOR persistently fails to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the progress schedule established under paragraph 1.7 as revised from time to time);
  - 13.2.7 If CONTRACTOR disregards Laws or Regulations of any public body having jurisdiction;
  - 13.2.8 If CONTRACTOR disregards the authority of ENGINEER; or
  - 13.2.9 If CONTRACTOR otherwise violates in any substantial way any provisions of the Contract Documents;
- 13.3 Termination by Owner
- 13.3.1 OWNER may, after giving CONTRACTOR and the surety, if there be one, seven (7) days' written notice and to the extent permitted by Laws and Regulations, terminate the services of CONTRACTOR, exclude CONTRACTOR from the site and take possession of the Work and of all CONTRACTOR's tools, appliances, construction equipment and machinery at the site and use the same to the full extent they could be used by CONTRACTOR (without liability to CONTRACTOR for trespass or conversion), incorporate in the Work all materials and equipment stored at the site or for which OWNER has paid CONTRACTOR but which are stored elsewhere, and finish the Work as OWNER may deem expedient. In such case CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds the direct, indirect and consequential costs of completing the Work (including but not limited to fees and charges of engineers, attorneys and other professionals and court and arbitration costs) such excess will be paid to CONTRACTOR. If such costs exceed such unpaid balance, CONTRACTOR shall pay the difference to OWNER. Such costs incurred by OWNER will be approved as to reasonableness by ENGINEER and incorporated in a Change Order, but when exercising any rights or remedies

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

under this paragraph OWNER shall not be required to obtain the lowest price for the Work performed.

13.3.2 Where CONTRACTOR's services have been so terminated by OWNER, the termination will not affect any rights or remedies of OWNER against CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of monies due CONTRACTOR by OWNER will not release CONTRACTOR from liability.

13.3.3 Upon seven (7) days' written notice to CONTRACTOR and ENGINEER, OWNER may, without cause and without prejudice to any other right or remedy, elect to abandon the Work and terminate the Agreement. In such case, CONTRACTOR shall be paid for all Work executed and any expense sustained plus reasonable termination expenses, which will include, but not be limited to, direct, indirect and consequential costs (including, but not limited to, fees and charges of engineers, architects, attorneys and other professionals and court and arbitration costs).

13.4 Conditions of Termination by Contractor

13.4.1 If, through no act or fault of CONTRACTOR, the Work is suspended for a period of more than one hundred eighty (180) days by OWNER or under an order of court or other public authority, or ENGINEER fails to act on any Application for Payment within thirty (30) days after it is submitted, or

13.4.2 If OWNER fails for thirty (30) days to pay CONTRACTOR any sum finally determined to be due, then CONTRACTOR may, upon seven (7) days' written notice to OWNER and ENGINEER, terminate the Agreement and recover from OWNER payment for all Work executed and any expense sustained plus reasonable termination expenses. In addition and in lieu of terminating the Agreement, if ENGINEER has failed to act on an Application for Payment or OWNER has failed to make any payment as aforesaid, CONTRACTOR may upon seven (7) days' written notice to OWNER and ENGINEER stop the Work until payment of all amounts then due. The provisions of this paragraph shall not relieve CONTRACTOR of the obligations under paragraph 4.14 to carry on the Work in accordance with the progress schedule and without delay during disputes and disagreements with the OWNER.

ARTICLE 14 - MISCELLANEOUS

14.1 Giving Notice

Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

14.2 Computation of Time

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

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

14.2.1 A calendar day of twenty-four hours measured from midnight to the next midnight shall constitute a day.

14.3 Bid Submission

Each bidder who submits a proposal for any portion of the work included in the Project Manual must submit with its bid this form fully completed and signed by an authorized officer of the bidder and must provide the data requested by the form. Unless this form is fully completed and signed by the bidder, the proposal made by that bidder will be incomplete and will not be considered by the Board of County Commissioners

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

**SUPPLEMENTAL SPECIFICATIONS**

The Elkhart County Street Standards and following specifications are for this particular Project. If anyone, or several of these conflict with the current INDOT Standard Specifications and current INDOT Standard Drawings, the Project Specifications are valid and the current INDOT Standard Specifications and current INDOT Standard Drawings which conflict are voided and the remainder of the current INDOT Standard Specifications and current INDOT Standard Drawings shall be valid. Anything not covered specifically by the Project Specifications shall be referred to the Standard Specifications and Standard Drawings, and these will be the governing factors for this Project. The current INDOT Standard Specifications and current INDOT Standard Drawings are available on-line at the INDOT website: <http://www.in.gov/indot/>. The Engineer is available by email prior to the bid regarding any bidder questions on accessing the current INDOT Standard Specifications and/or current INDOT Standard Drawings.

1. General Description of the Work

The County Road 4 Improvements project includes demolition of full depth existing pavement, site grading to proposed pavement elevation, replacement of full depth asphalt roadway with curb and gutter, storm sewer improvements and retention basin excavation and grading, drive approach removal and replacement and improvements to the County Road 17 traffic signal.

2. References

The plans, drawings and specifications related to this project are on file at Elkhart County and are designated as “**County Road 4 Improvements**”. These documents shall be applicable to the project and are hereby incorporated by reference.



**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

**SPECIAL NOTES & REQUIREMENTS**

1. Utility Locations

For protection of underground utilities, Contractor shall call Indiana's Utility Location Service at (800) 382-5544 a minimum of three (3) working days prior to excavating in the vicinity of utility lines. All 811 alert system, participating members will thus be routinely notified. The Contractor shall be responsible for notifying any and all utility owners who may not be part of the 811 alert system. The Contractor shall be responsible for successfully coordinating with all affected existing utilities in the vicinity of the project whether all utilities are indicated in the Contract Documents or not. The Contractor shall be solely responsible for any and all coordination, payment, and full resolution of any damages to utilities resulting from actions and/or omissions of the Contractor.

2. Utility Coordination

The Contractor will be responsible for all coordination with utilities affected by the proposed construction. Contact information for the utilities has been included on the cover page to the plan documents.

3. Underground Conditions

Four (4) soil borings were performed within the limits of the proposed storm water retention basin and soil boring logs are included in Appendix A.

The Bidder shall confirm and/or perform whatever additional subsurface investigations he/she deems necessary to become familiar with the local conditions prior to bidding. There shall be no compensation for investigative work, and all such work shall be coordinated with the Owner

4. Pre-Construction Meeting

Approximately two (2) weeks prior to the start of construction, the Contractor shall request a pre-construction meeting with Elkhart County's Highway Department Engineer and the Project Engineer. At this time, the Contractor shall present the traffic maintenance plan. The Project Schedule for the project shall also be reviewed and discussed at this meeting.

A pre-construction meeting shall be scheduled with the City of Elkhart before construction begins for water main installation.

5. Construction Video

The Contractor shall be responsible for providing pre-construction and post-construction videos of the construction corridor. The video shall provide good color frames and have sound capabilities used to point out existing surface conditions. A date and time stamp shall be visible during the extent of the production. Odometer readings shall be noted in one-tenth mile increments from a starting location at either end of the project. Pre-construction videos shall be delivered to the Owner in DVD format two weeks prior to the start of construction (preferably at the pre-construction meeting). It is suggested that if

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

possible the pre-construction video be made after a rain event to show any existing drainage problems. Post-construction videos shall be delivered to the Owner two (2) weeks prior to the request for release of retainage. All work shall be included in the cost of the other Contract items. Any submitted videos deemed insufficient by the Owner shall be immediately redone at the Contractor's expense. The videos shall include, but not be limited to adjacent property, building façade materials, etc., that could potentially be impacted by the work.

6. Testing Requirements

The Contractor shall be responsible for providing testing of the various work operations and materials, as per INDOT Specifications, by an independent agency. Frequency of testing shall be as per INDOT's minimum requirements or as otherwise directed by the Owner. Costs associated with the required testing shall be incidental to the Contract. It shall be the responsibility of the Contractor to order these tests and provide the necessary documentation, verifying passing tests, to the Owner. Failed tests shall be followed by documentation of corrective measures and passing test results, obtained in the same immediate locations. Test results shall be provided in a timely manner to allow for review where the continuation of work depends upon sufficient test results. All tests shall be performed in the Owner's and/or Engineer's presence and the Contractor shall provide at least twenty-four (24) hour-notice of testing.

7. Dewatering

Any costs anticipated for dewatering shall be merged into the provided bid items. Discharge point and maximum rate (gallons per minute) are subject to approval by the Owner prior to the work. The Contractor shall acquire all local, state or federal permits and/or approvals required for the dewatering operation.

8. Existing Trees

Existing trees shall be protected unless otherwise indicated on the plans or directed by the Owner at specific locations. No removal or trimming of trees or vegetation shall be done prior to specific approval by the Owner.

9. Easements & Rights-of-Way

If temporary construction easements are required beyond the proposed right-of-way and proposed temporary easements, the Contractor shall coordinate additional access through the Owner well in advance of any encroachment.

10. Matching Old Work

Where new work is to be fitted to old work, the Contractor shall check all leading dimension and conditions in the field and report any errors or discrepancies to the Engineer or assume responsibility for their correctness and fit of new parts to the old. If such parts do not fit properly the Contractor shall make and pay for such alterations or new parts as may be necessary to assure proper fits and connections meeting the approval of the Engineer.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

11. Mail Boxes

The Contractor shall be responsible for the temporary and permanent resetting of existing US mail boxes, so as to avoid any interruption of mail service to affected property owners.

12. Castings Adjusted to Grade

The accurate adjustment of any and all castings adjusted to grade within the Project limits shall be the Contractor's responsibility, included in the cost of the Project. Prior to final acceptance of the Project, the Contractor shall demonstrate to the Owner that no new or existing castings have been covered over by the work.

13. Permits

The Contractor shall perform the work in accordance with the conditions of all permits obtained for this Project, and shall be responsible for holding the Owner faultless in connection with any permit violations resulting from the Contractor's actions or omissions. The Contractor shall be responsible for any corrections, mitigations, and costs in connection with any such permit violations. All additional permits, if necessary, shall be acquired by the Contractor.

14. Wage Schedule

In accordance with Indiana House Bill 1019, effective 7/1/15, no construction wage schedule requirement is included in this Contract.

15. Pre-bid Meeting

A pre-bid meeting will be held at the Elkhart County Highway Department Office, 610 Steury Ave, Goshen, Indiana at **10:00 AM on Tuesday, April 13, 2021**. By submitting a bid, the Bidder will be assumed to have made a thorough field check of the site conditions prior to bidding and the Bidder shall be held responsible accordingly.

16. Bidder Questions

All questions regarding the Project shall be submitted by email to the Brian B. Konarski, PE, of Jones Petrie Rafinski at bkonarski@jpr1source.com. No questions will be answered over the phone. The deadline for questions to be considered as possible addendum shall be **Wednesday, April 21, 2021 at 5:00 p.m.** Any questions received after this deadline will not be addressed. The final Addendum, if necessary, will be issued by **12:00 p.m. Eastern Daylight Savings Time on Thursday, April 22, 2021**.

17. Coordination

Elkhart County is planning a CCMG roadway improvements project that will include the west side of the intersection of County Road 15 and County Road 4. The project is expected to be completed by June 4, 2021. The County Road Improvements project will shall begin on or after that date.

Limits of surface milling at the intersection of County Road 15 and County Road shall match into limits of the Elkhart County CCMG project.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

**TECHNICAL SPECIFICATIONS**

**ITEM 1 – CLEARING RIGHT OF WAY**

General Description

The bid price shall include, but will not be limited to, all costs for clearing, grubbing, removing and disposing of all existing buildings, vegetation and debris including trees within the scope of the work, and miscellaneous materials and obstructions whether shown on the plans or not, in order to complete the work, except such objects as are designated to remain. This work shall include the preservation from injury or defacement of all vegetation and objects designated to remain.

General

Right-of-way lines and construction lines shall be established by the Contractor, and trees, shrubs, plants, and other features to remain will be designated by the Town. All such designated items shall be preserved. Any damage to natural terrain or to vegetation or objects designated to remain shall be repaired, replaced, or otherwise compensated for, as determined by the County, with no additional payment. Tree wound dressing required for cut or scarred surfaces of trees or shrubs selected for retention shall be in accordance with 914.09 of the current INDOT Standard Specifications.

Clearing and Grubbing

Surface objects, trees, stumps, roots, and other protruding obstructions not designated to remain shall be cleared and grubbed, including mowing as required. Undisturbed sound stumps, roots, and nonperishable solid objects, which are a minimum of 3 ft. below the final subgrade or slope of embankments, may be left, provided they are as nearly flush as possible. Sound stumps may be cut off at ground level outside the construction limits of cut and embankment areas if approved.

Except in areas to be excavated, stump holes and other holes from which obstructions are removed shall be backfilled with suitable material and compacted in accordance with current INDOT Standard Specifications. Burning of perishable material shall be done only in accordance with applicable laws, ordinances, rules, and regulations. All necessary permits approval shall be obtained by the Contractor prior to burning.

Unless burned in accordance with the requirements herein, perishable materials and debris shall be removed from the right-of-way and disposed of at locations off the construction site. Sod may be disposed of within the right-of-way, but outside the construction limits, if permitted. Written permission shall be obtained from the property Owner on whose property the materials and debris are to be placed. All necessary arrangements shall be made by the Contractor with the Owner for obtaining suitable disposal locations. The cost involved shall be included in the contract price of pay items.

Removal of specific trees is indicated on the Plans and shall be done as needed for the specific work that is awarded only. Other obstructions to be removed are not indicated on the Plans for removal.

All merchantable timber in the clearing area, which has not been removed from the right-of-way prior to the beginning of construction, shall become the property of the Contractor, unless otherwise provided. The value of the timber shall be taken into account when the bid is prepared.

Topsoil not reused in the project construction shall be removed from the project area, to full depth, and stockpiled at a location selected by the Contractor and approved by Elkhart County.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

Measurement and Payment

Payment for Clearing Right of Way will be by lump sum.

Definition of Contract Items

<u>Item</u>	<u>Unit</u>	<u>Description</u>
1.1	LSUM	Clearing Right of Way

**ITEM 2 - CONSTRUCTION STAKING**

General Description

For the lump sum price bid, the Contractor shall provide construction layout/surveying for the improvements as shown in the project plans and specifications. This item shall include, but may not be limited to the following:

Performance

- Locate existing benchmarks and run level circuit to check elevations. New benchmarks, if needed, shall be set every 500 feet. Benchmark data sheets shall be provided to the Owner.
- Location and grade, (with offset stakes) for subgrade, curbing, pavement, etc. including cut sheets for each structure. Cut sheets must be provided to the Owner.
- Stake all structures and other project related items including, but not limited to storm inlets and catch basins, storm manholes, and other structures etc.
- Stake rights-of-way and easements as needed.
- Preserve and perpetuate existing property corners and section corners which are at risk from construction operations. This item must be performed under the direct supervision of a licensed surveyor.
- Field notes shall be kept in standard field notebooks supplied by the Contractor in a clear, orderly and neat manner consistent with standard engineering practices and procedures. The field books shall be available for inspection by the Owner at all times and shall become the property of the Owner on completion of the work.
- The supervision of the Contractor's construction staking personnel shall be the responsibility of the Contractor and any errors resulting from the operations of such personnel shall be corrected at the expense of the Contractor and at no additional cost to the Owner.
- The Owner may check the accuracy of the staking as necessary, but will assume no responsibility for the accuracy of the layout or the final result of construction accuracy.

The above items shall be the minimum requirements and shall be performed under the direction of a Land Surveyor licensed in the State of Indiana.

Measurement and Payment

The Contractor will be paid for construction staking on a percent complete basis for the lump sum item. Payment shall be made based on a percent complete basis.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

Definition of Contract Items

<u>Item</u>	<u>Unit</u>	<u>Description</u>
2.1	LSUM	Construction Staking

**ITEM 3 – SITE GRADING**

General Description

The bid price shall include, but not be limited to linear site grading, balancing soil cut and fill on the project site and subgrade preparation for roadway construction.

Linear Grading

The Contractor shall bring the project site to finished grade as indicated on the construction plans. The Contractor shall be responsible for balancing soil cut and fill within the site. No soil materials shall be removed from the site without specific written permission from the County or the Engineer. The County shall decide on any question of soil, type, quality or suitability.

The Contractor shall bury no construction debris from clearing or other operations on site. All areas to mulched and seeded shall include an incidental typical 6” application of approved topsoil material from the site as available, and from an approved outside source as needed at areas to be restored, in accordance with Item 21 – Landscape Restoration.

Roadway Subgrade Preparation

The Contractor shall be responsible for preparing the roadway subgrade, in accordance with current Standard INDOT Specifications. The attached soil boring logs may be utilized in preparing the subgrade. Soil information contained in the boring logs may not be indicative of existing soil conditions throughout the site. Unsuitable materials, including clays, silts and organics, shall be removed and reused on site for cut and fill balance. Unsuitable materials shall not be used as fill material in roadside swales. Proposed roadway fill material shall be structural fill approved by the County prior to installation and compaction. Topsoil shall not be used as backfill material.

In preparing the roadway subgrade, after unsuitable materials have been removed and fill material approved by the County has been installed, the Contractor shall compact the subgrade to 95% Modified Proctor maximum dry density. Any “pumping” or yielding areas should be undercut at additional depth as directed by the Engineer and backfilled with approved structural material. Loose sandy material shall be removed, replaced in maximum 8-inch lifts and recompacted to 95% Modified Proctor maximum dry density.

Stormwater Retention

Stormwater runoff shall be retained onsite in retention basins. All proposed Retention Basins shall be constructed to the grade and depth indicated on the plans. Initial Basin excavation shall be carried to within 1 foot of the final elevation of the basin floor. Final excavation shall be conducted after site work has been completed. The finished grade should be deferred until all slopes in the project corridor have been seeded and protected with prescribed erosion control measures.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

The final phase excavation shall be performed carefully to removal all accumulated sediment. Light equipment shall be used for this operation to avoid deep compaction of the basin floor. After the final grading is complete the basin floor shall be tilled with rotary tillers or disc harrows to open the soil pores and provide a well-aerated, highly porous surface texture.

The Contractor will not be entitled to additional compensation if the retention basins are over-excavated, without the written approval of the Owner. After grading operations are completed, the swales shall be restored with 3" of topsoil placed over uncompacted and seeded as detailed in these specifications.

The Contractor shall avoid over-compaction of existing materials within the roadside swales. Existing materials that may inhibit storm water infiltration, such as clay or organic material, shall be removed and stockpiled on-site.

Measurement and Payment

The Contractor shall be paid his lump sum price bid for Site Grading as described herein.

Definition of Contract Items

<u>Item No.</u>	<u>Unit</u>	<u>Description</u>
3.1	LSUM	Site Grading

**ITEM 4 - MAINTENANCE OF TRAFFIC**

General Description

This work shall consist of planning, furnishing, placing and maintaining all necessary signs, barricades, temporary pavement markings, fences, barriers, flagmen, removal of conflicting pavement markings and other traffic control devices for the protection of the work and safety of the public. These devices shall be in accordance with the maintenance of traffic plans, Indiana Manual on Uniform Traffic Control Devices and INDOT Standard Specifications.

County Road 4 may be closed for construction over a maximum length of 100 feet. Roadway improvements may progress a maximum of 100 feet before backfilling with gravel to allow for vehicular access to through roadway and driveways. Residential driveways shall be open and accessible at all times. The Contractor shall notify homeowners at least 72 hours in advance when working directly in front of driveway entrances.

The Contractor's own temporary maintenance of traffic plans for placing the pavement markings and the roadway reconstruction operations shall be submitted to the County for approval a minimum of one (1) week in advance of the work.

Signage

"Road Construction Ahead" and detour signs shall be installed prior to the beginning of all other work and shall be removed only after notification from the Owner. The Contractor shall be responsible for the maintaining of the signs and required warning lights on a periodic basis, minimum of once per week, and additional prompt maintenance when alerted to problems. Signs shall be subject to rejection due to wear and tear. All barricades shall have reflective material on

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

both sides of the planks, and shall be relocated as directed within the project. Construction signage shall be placed for optimum visibility to the motorists (i.e. avoiding obstructions). When “sand bagged” temporary sign standards are acceptable, the Contractor shall provide a sufficient number of sand bags to avoid “blow down.”

Measurement and Payment

The Contractor shall be paid on a lump sum basis for Maintenance of Traffic. Payment will be made on a percent complete basis. Incidental to the lump sum bid item shall be the placement and maintenance of sufficient temporary approaches and access-directing signage as deemed necessary by the Owner to provide uninhibited access to local businesses.

Necessary emergency work performed by the Owner may be billed against the Contractor.

Definition of Contract Items

<u>Item No.</u>	<u>Unit</u>	<u>Description</u>
4.1	LSUM	Maintenance of Traffic

**ITEM 5 - EROSION CONTROL**

General Description

Contractors shall bid based on plan documents and specifications, and knowledge of the specific site from actual field visit(s).

The contractor shall hold the owner faultless for any non-compliance with permit-related specifications.

All temporary erosion control measures shall be in accordance with the INDOT Standard Specifications and INDOT Standard Detail Drawings, or as otherwise stated in these special provisions.

The Contractor shall be responsible, through the implementation of erosion control and sedimentation control measures for minimizing erosion on the project and minimizing sedimentation inside and outside of the project limits.

During any and all dewatering operations, the Contractor shall be responsible for preventing sedimentation associated with discharge flow at the Contractor’s expense (possible measures may include the various available “dewatering bag” products which filter dewatering flow).

Prior to final project acceptance, and periodically as needed, the Contractor shall remove any sedimentation deposits which result from the work at the Contractor’s expense, including, but not limited to, sedimentation within any new or existing ponds, ditches, swales or storm sewers within the project scope.

Temporary grass seeding shall be placed at individual disturbed areas as the project progresses (i.e. with multiple mobilizations as needed in lieu of mobilizing only after very large areas are disturbed) prior to permanent seeding or sodding in order to control potential erosion, and shall include the following species and rates:

Wheat or Rye            @            150# / Acre



**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

Spring Oats            @        100# / Acre  
Annual Rye Grass    @        40# / Acre

A fertilizer application of 400#/acre of 12-12-12 analysis materials shall accompany the seeding application. Mulching of temporary seeding shall be incidental.

Temporary seeding shall be applied as needed at areas including, but not limited to: side slopes, areas subject to sheet drainage, staging areas, stripped areas, stockpiles of soil materials, temporary grading for runoff control during maintenance of traffic phases, etc. Temporary seeding shall be required at specific areas left disturbed for fifteen (15) consecutive calendar days without fine grading, permanent seeding or sodding, or continued disturbing by ongoing work operations.

Reseeding, as necessary, shall be at the Contractor's expense.

Permanent seeding shall be current Elkhart County Standard Specifications mulched seeding.

A fertilizer application of 400#/acre of 12-12-12 analysis materials shall accompany the seeding application. Mulching of temporary and permanent seeding shall be incidental. More substantial or faster growing specialized seeding may be used in lieu of mulched seeding as per plan details.

Seeding shall be done promptly and progressively as grading work is completed in order to allow for the earliest possible establishment of stabilized grass. Multiple mobilizations for the seeding of specific sections shall be included in the work as needed.

Due to the known, highly permeable soils in the project area, the Contractor shall be responsible for the control and containment of liquid or soluble construction materials for the protection of the groundwater resource. Any accidental spillage shall be cleaned up and disposed of immediately by acceptable means, regardless of the time of day or day of the week.

The Contractor shall give a 24-hr/day emergency phone number prior to the start of work, for use by local municipal and emergency officials to contact the contractor in the event of a spillage within the project limits during non-work hours, etc.

The Contractor's bid shall include the incidental use of temporary gravel entrance pads as per the Indiana Stormwater Quality Manual (incidental to the contract) where approved hauling routes connect to roadways. The work shall include the eventual removal of such gravel pads, maintenance including added or replaced aggregate as needed, and the incidental grading, seeding, or sodding required to return the pad areas to original condition. The temporary gravel pads shall have a minimum 6 in. thick application of 2 in. to 3 in. coarse aggregate at a minimum 12 ft. wide and 50 ft. long, with sufficient radii at the roadway. Geotextile fabric for stabilization below the gravel pads shall be incidental.

The entering and exiting of equipment and hauling traffic from the work site shall be done in a safe manner with flagmen and advance-warning signage as needed. The prime Contractor shall be responsible for ensuring that equipment operators and haul truck drivers, etc., use caution and acceptable speeds during the work.

The Contractor shall be responsible for the immediate cleaning of soils and construction materials, which are inadvertently placed on the traveled roadway (from truck tires, spills, etc.). Where this is due to the excessive use of temporary gravel entrance pads, these pads shall be reconstructed (incidental to the contract).

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

The Contractor shall be responsible for correcting any inadvertent damages to public roads or private property, which result from the work.

The Contractor shall have on file at the site, the "Indiana Handbook for Erosion Control in Developing Areas". An on-site Contractor representative shall be familiar with the handbook and the various erosion control measures, and have the authority to implement these measures as needed for the control of erosion, including unforeseen erosion situations. The Contractor's responsibility for control of erosion shall be incidental to the contract for all necessary measures beyond those specifically listed in the itemized proposal as bid, and shown in the contract documents. The Handbook shall supplement the INDOT standards. The Owner may direct incidental erosion control measures as needed; however, the Contractor shall bear the ultimate responsibility for recognizing the need for, and implementing erosion control measures.

Stockpiles of earth materials shall be shaped as per the Indiana Handbook for Erosion Control in Developing Areas. Topsoil materials shall be stockpiled separately from other soils. Prior to reuse, extraneous materials such as stones above 1 inch diameter, and large roots shall be removed from topsoil. The Owner shall approve specific materials as suitable topsoil prior to use.

The sequence of general work operations, relating to earth disturbing activities, shall be such as to prevent the potential for erosion. The sequence shall generally be as follows:

Construction Warning Signage

Clearing Right-of-Way

Temporary Seeding (as needed)

Utility Construction

Rough Grading

Fine Grading

Pavement Construction

Miscellaneous Construction

Restorations and Permanent Seeding

Final Cleanup

Temporary erosion control measures including erosion control blankets (as shown on the plans) shall be implemented at the time of clearing right-of-way as early in the sequence as needed, and shall be maintained throughout the sequence as needed. During the course of work, cleanup shall be done as needed to avoid erosion and sedimentation.

Job-wide monitoring of temporary erosion control features (incidental) shall be done by the Contractor on a weekly basis and immediately after storm events of approximately ½" of rainfall or greater by a designated representative (i.e. for inlet protection, etc.), and shall be reset or replaced as often as needed until such time as the Contractor is directed by the Owner to remove them.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

All silt fence shall be properly attached to stakes, staked, and anchored, but shall be used only to control "sheet" runoff (i.e. not to control concentrated flow). Silt fence may be necessary at soil stockpiles or staging areas that are subject to erosion even after temporary seeding. Where possible, the Contractor shall locate staging and stockpile areas where the possibility of erosion is minimized.

Riprap, where required by plans, shall be promptly placed to contribute to erosion protection as soon as possible.

The prime Contractor shall be responsible for providing specific, well-marked, designated shallow pit areas to contain washout materials from the cleaning out of ready mix concrete trucks on site. The prime Contractor shall ensure that all concrete trucks shall utilize these pit areas for cleanout. The prime Contractor shall be responsible for properly removing and disposing of the cleanout materials after the individual pit areas become full, and shall properly regrade at areas to match surrounding grades as soon as the pit areas are no longer needed.

The prime Contractor shall be responsible for assuring that any fuel or other construction liquid storage on site is done so that potential spills would be properly contained to prevent them from entering the soil.

The prime Contractor shall be responsible for ensuring that the washing of vehicles or construction equipment on site is done so that washout materials would be properly contained to prevent them from entering the soil.

The Contractor shall maintain all Erosion Control measures and immediately address all deficiencies noted by the Owner at the Contractor's expense.

**Measurement and Payment**

The Contractor will be paid on a percent complete basis for the lump sum item.

**Definition of Contract Items**

<u>Item No.</u>	<u>Unit</u>	<u>Description</u>
5.1	LSUM	Erosion Control

**ITEM 6 - PAVEMENT REMOVAL**

**General Description**

The pay items shall include, but may not be limited to, all costs for labor, materials, tools, equipment, sawcutting, hauling and disposal for removal of existing pavement of all thicknesses (including possible underlying pavements) etc. designated for removal in the plans, necessary for the construction of the project, and/or as directed by the Owner. The items are also intended to be applied to incidental construction areas at existing pavement at cross streets and/or approaches.

**Pavement Removal**

The work shall be done as per INDOT Specifications Section 202.05 except that flexible type pavement and all encountered pavement type removal shall be included in the item. The work shall include the specified depth removal as indicated on the plans of all existing depth removal

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

of all existing pavement (mainline, approach and driveway), sidewalks and curbing within the scope of the project. Prior to performing the work of removal at locations shown on the plans or where directed, features to be removed shall be cut with a power driven saw along neat lines as directed. Sawing shall be such that any portion of the pavement to remain in place will not be damaged. Any portion that is damaged or removed outside the designated lines shall be replaced at the specifically directed locations (additional sawing as needed) with no additional payment. Sawing will not be paid for directly, but shall be included in the respective costs.

Surface Milling

Surface milling shall be completed at the intersection of County Road 15 and County Road 4, to the limits indicated in the plans, in accordance with INDOT Specifications Section 306 except that flexible type pavement and all encountered pavement type removal shall be included in the item. Milling limits on the west side of the intersection shall match the limits of roadway improvements to be constructed in the Elkhart County CCMG project. Any portion that is damaged or removed outside the designated lines shall be replaced at the specifically directed locations (additional sawing as needed) with no additional payment. Asphalt surface restoration shall be included in the HMA Surface Mainline Pavement line item (Line Item 8.4).

Measurement and Payment

Payment for pavement removal shall be measured by square yard

Definition of Contract Items

<i>Item No.</i>	<i>Unit</i>	<i>Description</i>
6.1	SYD	Pavement Removal, Mainline, Full Depth
6.2	SYD	Pavement Removal, Approach, Full Depth
6.3	SYD	HMA Surface Milling

**ITEM 7 - COMPACTED AGGREGATE NO. 53**

General Description

The bid item shall include, but not be limited to, all cost for labor, materials, tools, equipment, excavation, backfilling, compaction, and testing. No. 53 aggregate for base as included in the contract for typical cross section pavement applications.

Performance

The work shall be performed as per INDOT Standard Specification Section 303 & 304.

Compacted aggregate shall be INDOT No. 53, in accordance with INDOT Standard Specifications Section 904.03. Aggregate shall be compacted to 95% modified proctor maximum dry density, in accordance with INDOT Stand Specification Section 402.15.

If the Contractor proposes crushed concrete in lieu of aggregate the Contractor shall demonstrate compliance with grain size distribution for INDOT No. 53 aggregate with crushed concrete, and consistency of grain size distribution and construction throughout the project.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

Measurement and Payment

The bid item shall be paid per ton at the specified depth (field verified). The neat line limits extend from the existing edge of pavement (plan specified saw cut line) to edge of asphalt or gravel paving.

Definition of Contract Items

<i>Item No.</i>	<i>Unit</i>	<i>Description</i>
7.1	TON	Dense Graded Subbase, 6 in, Compacted Agg. INDOT No. 53

**ITEM 8 - HOT MIXED ASPHALT (HMA) PAVEMENT**

General Description

The bid item shall include all necessary labor, tools, materials, equipment, hauling, compaction, saw cutting, and testing necessary for a successful completion of HMA pavement construction. The work shall be performed as per INDOT Standard Specification Section 402.

Material

The Contractor shall provide job mix formula information to the Owner for approval sufficiently in advance of the work.

Recycled asphalt materials shall be allowed in accordance with INDOT Standard Specifications.

Placement

Typical HMA lift thickness shall be as detailed in the plans for mainline pavement and shoulder construction. The Owner shall approve each lift prior to the placing of the next lift. The Owner's acceptance of each lift will be determined based upon, but not limited to, pavement smoothness and in-place density test results provided by the Contractor.

The Contractor shall conduct work operations to avoid the segregation of mix (i.e. by proper truck loading 'tripe dump' method, etc.). Segregated mix that is discovered in place shall be removed and replaced by the Contractor as directed at no cost to the Owner. All bituminous mix trucks, without exception, shall tarp the loads until dumping, and shall re-tarp for a partial load. The Contractor shall be responsible for safe driving by haul trucks, (as well as for all equipment in general).

Utility Access Points

The Contractor shall be responsible for the coordinating with all utilities, etc. on the correct elevation of all manholes, valves, etc. within the pavement. The Contractor shall be responsible for all pavement corrections at such structures, prior to final acceptance of the work. The Contractor shall be responsible for the cleaning of all water valve boxes as well as all sanitary and storm structures, within the pavement area and the final inspection of those in the presence of the Owner.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

Testing

Extraction tests shall be performed by an independent laboratory early on the first day's run of each type of mix. In the event of substandard results, the Contractor shall be prepared to correct the work as directed, and run additional extraction tests at no additional cost to the Owner.

Pavement smoothness tolerance shall be ¼ inch. Pavement smoothness will be verified at the Owner's discretion using a 10-foot long rolling straightedge (per INDOT specifications) at no additional cost. It shall be the Contractor's responsibility to secure and provide the straightedge equipment and then test the identified pavement lengths in the presence of the Owner. All wavelike irregularities and abrupt changes in the profile shall be corrected at no additional cost. Areas outside the allowable tolerance may be corrected by grinding with a grooved type cutter or other Owner approved alternative. Milling of the surface to correct variation will not be accepted.

Compaction and subgrade proof roll testing shall be completed in accordance with the current Elkhart County Highway Standards.

Tack Coat

A tack coat is required at the standard INDOT application rate below all HMA surface course. The pavement shall be broomed prior to placement of the tack coat.

Measurement and Payment

HMA pavement shall be paid for on a per unit basis at no more than the neat line plan quantities. The neat line limits extend from the existing edge of pavement (plan specified saw cut line) to the edge of asphalt paving or the curb line. Truck load tickets shall be supplied to the Owner for each day's pavement activities prior to the processing of pay requests.

Definition of Contract Items

<u>Item No.</u>	<u>Unit</u>	<u>Description</u>
8.1	TON	HMA Base, Type 'B', 330#/SYD, Mainline Pavement
8.2	TON	HMA Intermediate, Type 'C', 330#/SYD, Mainline Pavement
8.3	TON	HMA Intermediate, Type 'B', 330#/SYD, Shoulder Pavement
8.4	TON	HMA Surface, Type 'C', 165#/SYD, Mainline Pavement
8.5	TON	HMA Surface, Type 'B', 165#/SYD, Shoulder Pavement
8.6	SYD	Asphalt for Tack Coat

**ITEM 9 – CONCRETE DRIVE RESTORATION**

General Description

The unit bid price shall include, but not be limited to, all costs for labor, materials, tools, equipment, excavation, backfill, compaction, forming, finishing, saw cutting, joint filling, and all work necessary to construct a concrete driveway, and appurtenances, complete and ready for operation, as shown on the plans, or as specified.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

Material

The concrete shall have crushed limestone for aggregate. The concrete shall have a high early mix design, and be capable of reaching 4,000 psi within 3-days.

Portland Cement Concrete Pavement (PCCP) shall be in accordance current INDOT Standard Specifications Section 502.

Pavement Dimensions

Constructed drive approaches shall have a minimum depth of 6-inches over 6-inches of compacted aggregate #53, unless otherwise specified, and to the width and of the adjoining drive.

Material Transport

Concrete mixing and transportation shall be completed transit mixed methods. Discharge from a truck agitator or a truck mixer shall be completed within 90 min of mixing the water, cement, and aggregates or within 30 min of the addition of any calcium chloride solution. If the location of the plant is such that this time limit cannot be met, any calcium chloride solution shall be added to the concrete in a transit mixer at the site and the concrete shall then be mixed for an additional 40 revolutions prior to discharge. Concrete shall be uniformly mixed when delivered to the job site. Batch tickets for each load of concrete shall indicate the mass (weight) of cement, pozzolan, and aggregates, volume of water, and the type and volume of admixtures. When concrete is delivered in transit mixers, additional water to increase the workability of a load may be added within 45 min of initial mixing. Any addition of water shall be noted on the batch ticket and shall not occur as a continuing operation.

Temperature Requirements

Placement of concrete between May 15 and September 15 shall be after 1:00 P.M. The 1:00 P.M. restriction will apply outside this calendar period when the expected ambient temperature is 21°C (70°F) or greater, unless otherwise directed. Concrete patches shall not be placed on frozen subgrade or subbase.

Opening New Drives to Traffic

The Contractor shall employ an independent qualified testing firm to prepare and test compression or flexural concrete samples to monitor concrete strength for the basis of opening new drives to traffic as soon as practical and as approved by the Owner.

Measurement and Payment

The Contractor will be paid no more than the neat line area as shown on the plans or specified.

Definition of Contract Items

<u>Item No.</u>	<u>Unit</u>	<u>Description</u>
9.1	SYD	PCCP for Approaches, 6 in.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

**ITEM 10 – CONCRETE CURBING**

General Description

The bid item shall include, but not be limited to, all cost for labor, materials, tools, equipment, excavation, backfilling, compaction, pouring, forming, finishing, curing, saw cutting, joints, and additional treatments as needed to complete the installation of concrete curbing as shown in the construction plans or as directed in the field by the Owner.

Concrete curb and gutter shall be constructed at mainline pavement areas per the plan drawings. Concrete curb shall be constructed at concrete drives.

Materials

The concrete mix shall be developed from crushed limestone aggregate. The concrete shall have 5 gallons of water per sack of cement, with a minimum of 6 bags of cement per cubic yard of concrete, and shall reach 4000 psi in 28 days. Pre-formed expansion joints material with ¾ inch thickness shall be installed at locations where new curb and gutter is to match existing curb and gutter.

Finishing

Curbs shall be finished, broom textured and cured by the use of an approved membrane forming material at all surfaces exposed before final backfill, including back of curb. Incidental to the work shall be the saw cutting of contraction joints at maximum 10 ft. spacing.

Installation

The forms for concrete curbing shall be set true to line and grade, and shall be approved by the Owner. Curb machines may be used provided they can match the requirements of the specifications and plans.

The Contractor shall be responsible for accurately providing curb and gutter with the gutter pan sloped to release storm water in accordance with the drainage patterns of the proposed construction while providing positive drainage.

Measurement and Payment

The Contractor will be paid on a per unit basis for the accepted concrete curbing. The concrete curb and gutter and concrete curb will be measured for payment along the front face of the section at finished grade.

Definition of Contract Items

<u>Item No.</u>	<u>Unit</u>	<u>Description</u>
10.1	LFT	Concrete Curb & Gutter
10.2	LFT	Concrete Curb



**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

**ITEM 11 - STORM SEWER STRUCTURES**

General Description

The bid price shall include, but will not be limited to, all materials, earth excavation, backfill, sheeting, shoring, disposal of excess material, cleanup, concrete, reinforcing steel, masonry work, ductile iron steps, cast iron frames and covers, pipe and fittings, and all work necessary to construct storm inlet, catch basin and manholes and appurtenances, complete and ready for operation, as shown on the plans, as specified, or as ordered by the Owner.

Manhole Requirements

Manholes shall be 4 feet in diameter, unless otherwise specified, and shall be constructed of precast concrete in accordance with the ASTM C478 for "Precast Reinforced Concrete Manhole Risers and Tops". Storm manholes shall be constructed in strict conformance with Section 720 of the INDOT Standard Specifications. The minimum wall thickness shall be 5-inches, unless otherwise specified or shown on the plans. Manhole tops shall be of the eccentric cone type. Precast flat covers and flat bottoms shall be a minimum of 8 inches thick reinforced with two layers of steel with a minimum area of 0.39 square inches per linear foot in both directions in each layer. Each section joint shall contain a rubber o-ring gasket or mastic type sealer as approved by the Owner.

Inlet Structures

Storm inlets shall be 30-inch in diameter and catch basin structures shall be 4 feet in diameter, unless otherwise specified. All inlet structures shall be precast concrete in accordance with ASTM C478. Base sections shall be 6-inch minimum thickness and structure walls shall be 4-inch minimum.

Rubber Pipe Gaskets

All storm structures shall use high performance flexible rubber gaskets meeting ASTM C923 for all pipe sizes. The gaskets shall be installed so that the sewer pipe can be inserted through the gasket and the gasket sealed to the sewer pipe through the use of a compression wedge or ring. The end result shall produce a watertight, flexible connection between the sewer pipe and the manhole wall.

Frames & Castings

All storm structure frames and covers shall be of gray iron free from any blowholes, etc., and shall conform to ASTM A48. Frames and castings shall set flush with the finished grade. Frames and covers shall be rated for H20 and H20S loading conditions (16,000 lbs) as designated in AASHTO "Standard Specifications for Highway Bridges". Frame and cover manufacturer and model shall be as indicated in the plans.

Testing

The proposed manholes shall be air tested in accordance with ASTM C1244, Standard Test Method for Concrete Sewer Manholes by Negative Air Pressure (Vacuum) Test. This test shall demonstrate the integrity of the installed materials and the construction procedures. This test method is used for testing concrete manhole sections utilizing mortar, mastic, or gasketed joints.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

The test procedure shall be as follows, in accordance with ASTM C1244.

1. All lift holes and any pipes entering the manhole shall be plugged.
2. The test head shall be placed at the top of the manhole in accordance with the manufacturer's recommendations.
3. A vacuum of 10-inches of mercury shall be drawn on the manhole, the valve on the vacuum line of the test head closed, the vacuum pump shutoff. The time shall be measured for the vacuum to drop to 9-inch of mercury.
4. The manhole shall be deemed acceptable if the duration of time between the drop of 10-inches of mercury to 9-inches of mercury is less than the values indicated in Table 1.
5. If the manhole fails the initial test, necessary repairs shall be made by an approved method. The manhole shall be re-tested until a satisfactory test is obtained.

**Minimum Test Times for Various Manhole Diameters**

Depth (ft.)	Diameter, in.								
	30	33	36	42	48	54	60	66	72
Time, s									
8	11	12	14	17	20	23	26	29	33
10	14	15	18	21	25	29	33	36	41
12	17	18	21	25	30	35	38	43	49
14	20	21	25	30	35	41	46	51	57
16	22	24	39	34	40	46	52	58	67
18	25	27	32	38	45	52	59	65	73

**Measurement and Payment**

The Contractor shall be paid on a per unit basis for storm inlets, catch basins and manholes of the respective size.

**Definition of Contract Items**

<u>Item No.</u>	<u>Unit</u>	<u>Description</u>
11.1	EA	Storm Inlet, 30" Diam
11.2	EA	Catch Basin, 4' Diam
11.3	EA	Storm Manhole, 4' Diam

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

**ITEM 12 - STORM SEWER PIPE**

General Description

The bid price shall include, but will not be limited to, all cost for labor, materials, tools, equipment, backfill material, backfilling, sheeting, shoring, dewatering, excavation and compaction.

Pipe Material

PVC storm sewer shall conform to ASTM Designation D3034 with a minimum SDR rating of 35 for 4" to 15" diameter sewer and ASTM F679 for sizes 18" and larger, or ASTM Designation D2241, with a SDR rating of 26, each with bell and spigot joints. All PVC sewer joints shall be water tight and meet the requirements of ASTM D3212. Installation of the pipe shall conform to ASTM D2321. The pipe and fittings shall be homogeneous throughout and free from visible cracks, holes, foreign inclusions, or other injurious defects. The pipes shall be as uniform as commercially practical in color, opacity, density, and other physical properties.

RCP (reinforced concrete pipe) storm sewer shall conform to ASTM C76. Installation of RCP storm sewer shall conform to ASTM C1479. The pipe and fittings shall be homogeneous throughout and free from visible cracks, holes, foreign inclusions, or other injurious defects. The pipes shall be as uniform as commercially practical in color, opacity, density, and other physical properties.

Maximum Trench Width

The maximum trench width shall be as shown in the project plans and details unless altered by the Owner in writing. The additional expense for excavation and pavement replacement made necessary by a wider trench with will be incidental to this item and no additional compensation will be made to the Contractor.

Backfilling

Backfill shall be performed and tested in accordance with INDOT Standard Specifications.

The Contractor shall not backfill sewers above the top of the pipe until the sewer elevations, gradient, alignment and the pipe joints have been installed correctly. The Owner or his/her duly authorized agent shall retain the capacity to check, inspect, and approve all sewer elevations, gradient, alignment, and pipe joints at any time during construction.

All sewer pipe as soon as laid shall have the space between the pipe and the bottom and sides of the trench packed full by hand and thoroughly tamped and compacted with a shovel or light tamper, as fast as placed, to a point 6 inches above the top of the pipe. The backfill to this point shall be #s 8 thru 11 crushed angular stone or approved equal. The filling shall be carried up evenly on both sides. Care shall be taken that no rock, frozen material, or other hard substances are placed in contact with the pipe.

The remainder of the trench shall be backfilled by using the material originally excavated from the ditch (except for conditions hereinafter defined), to a height slightly above the original elevation of the ground. Backfilling shall not be left unfinished for more than 100 feet behind the completed masonry or pipe work.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

No heavy rock shall be dropped into the trench nor placed within three (3) feet of the sewer pipe. In depositing rock in the trench care must be taken that the rock does not injure the structure. All spaces between pieces of rock shall be filled with earth to insure there being no voids.

Backfilling from 6 inches above the top of the pipe to final grade shall be made in lifts not exceeding 2 feet in depth, and shall meet the compaction requirements of 96% standard proctor density in 24 inch maximum lifts with the top 3 feet passing 100% standard proctor density. The Contractor shall provide wetting and/or drying, as needed, to control the moisture content of subgrade soils, in order to achieve optimum moisture content for the specified compaction requirements. Contractor shall have a minimum of 1 test per lift every 200 feet.

All backfill material shall be INDOT structural backfill or better or shall be approved by the Owner. The footage of pipe to be paid for will be based on the total length of pipe used. When the pipe connects to manholes, inlets, or catch basins, the sections will be measured to the outside face of the structure.

Sewer Proximity to Other Utilities

Where the sewer is shown or noted on the plans to be constructed parallel to and close to any existing water main, sewer, gas line, or fiber optic line, the exact location of which is not shown, the Owner may shift the location of the new sewer where possible to avoid interference. No additional compensation will be allowed for the shifting of the sanitary sewer to avoid such interference. The Contractor shall determine the exact location of existing utilities before starting construction as part of the work under these items.

Infiltration – Exfiltration Testing

It shall be the intention of these specifications to secure a sewer system including manholes with a minimum amount of infiltration and exfiltration. The maximum allowable infiltration and exfiltration shall be 200 gallons per mile, per inch of diameter of sewer, per 24 hour day, at any time during the day. The joints shall be tight and visible leakage in the joints in excess of that specified above shall be repaired by the Contractor, at the Contractor's own expense, by any means found necessary. It shall be the Contractor's responsibility to conduct the necessary tests, or to make arrangements (at no additional cost to the owner) for the tests to be made by other qualified parties, to determine if the newly constructed sewer system meets the requirements mentioned above. The infiltration and exfiltration tests shall be made in the presence of the Owner or his duly authorized agents.

In accordance with the above specifications, the maximum allowable quantity shall be as set forth in the following tabulations:

<u>Pipe Diameter</u>	<u>Gallons per Hour per 100'</u>
10"	1.60
12"	1.90
15"	2.40

Low-Pressure Air Testing

This test shall be performed according to ASTM F1417 "Test Method for Installation Acceptance of Plastic Gravity Lines Using Low-Pressure Air." This practice for testing shall be performed on lines after connection laterals, if any, have been plugged and braced adequately to withstand the

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

test pressure, and after the trenches have been backfilled for a sufficient time to generate a significant portion of the ultimate trench load on the pipe line. The time between the completion of the backfill operation and air testing shall be determined by the Owner.

Plug all openings in the test section. Add air until the internal pressure of the line is raised to approximately 4.0 psi. After this pressure is reached, allow the pressure to stabilize. The pressure will normally drop as the air temperature stabilizes. This usually takes 2 to 5 minutes, depending on the pipe size. The pressure may be reduced to 3.5 psi before starting the test. Start the test when the pressure has stabilized. If the pressure drops more than 1.0 psi during the test time, the line is presumed to have failed the test. If a 1.0 psi drop does not occur within the test time, as shown in the following table, or as calculated and defined in ASTM F 1417 for other lengths, the line has passed the air test.

Pipe Diameter, in.	Specification Time for Length (L) Shown, min:sec							
	100 ft	150 ft	200 ft	250 ft	300 ft	350 ft	400 ft	450 ft
8	7:34	7:34	7:34	7:34	7:36	8:52	10:08	11:24
10	9:26	9:26	9:26	9:53	11:52	13:51	15:49	17:48
12	11:20	11:20	11:24	14:15	17:05	19:56	22:47	25:38
15	14:10	14:10	17:48	22:15	26:42	31:09	35:36	40:04
18	17:00	19:13	25:38	32:03	38:27	44:52	51:16	57:41

Groundwater above the pipe will reduce air loss. If the section of pipe under test shows significant infiltration, the Owner may require an infiltration test.

**Deflection Testing**

Deflection measurements shall be made upon completion of the project providing the pipe has been installed for not less than 30 days and not more than 12 months prior to testing. Maximum vertical deflection shall not exceed 5% of the nominal pipe diameter. Deflection test results shall be submitted with the infiltration/exfiltration test results no later than 3 months following completion of sanitary sewer construction.

Note: The period of 30 days to 12 months is deemed an adequate time period for the soil to settle and stabilize. This phenomenon is dependent on geographical climatic conditions such as: Heavy rains or snows, changing water tables, extended dry period or freeze-thaw cycles. The Owner shall designate when the testing will be performed.

Instructions for mandrel deflection testing are as follows:

1. Completely flush the line making sure the pipe is clean of any mud or trash that would hinder the passage of the mandrel.
2. During the final flushing of the line, attach a floating block or ball to the end of the mandrel pull rope and float the rope through the line. (A nylon ski rope is recommended).
3. After the rope is threaded through the line, connect the pull rope to the mandrel and place the mandrel in the entrance of the pipe.
4. Connect a second rope to the back of the mandrel. This will enable you to retrieve the mandrel if excess deflection is encountered.
5. Remove all the slack in the pull rope by gently pulling the rope at the far manhole. After the slack has been removed, place a tape marker on the rope close to the pipe where the mandrel will exit. If mandrel encounters excessive deflection, the marker

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

- will provide a means of measuring the travel distance of the mandrel so that the deflected area can be located.
6. Draw mandrel through the sewer line.
  7. An increasing resistance to pull is an indication of excessive deflection. If this occurs, measure beginning marker on rope to the manhole. Locate section and replace bedding or pipe if visual examination reveals damage.
  8. Retest.

**Lamp Testing**

The Contractor shall provide all equipment and labor necessary to lamp test installed sewer pipe. A light will be inserted in the pipe of one manhole. If the pipe is laid true to line and grade a full circle of light will be seen at the other end of the pipe. In the event that a full circle of light is not seen, the Contractor will locate and fix whatever deficiencies exist. The pipe will then be retested. No additional payment will be considered for repairs and/or retesting.

**Measurement and Payment**

Quantities for payment under this item shall be measured per linear foot installed measured along the centerline of the pipe between manholes and shall exclude the overlap portion of the pipe at joints. When the pipe connects to manholes, the sections will be measured to the outside face of the structure.

**Definition of Contract Items**

<i><u>Item No.</u></i>	<i><u>Unit</u></i>	<i><u>Description</u></i>
12.1	LFT	12" PVC Storm Sewer
12.2	LFT	12" RCP Storm Sewer
12.3	LFT	15" PVC Storm Sewer
12.4	LFT	15" RCP Storm Sewer

**ITEM 13 – WATER MAIN**  
**(INCLUDES BORE & JACK)**

**General Description**

The bid price shall include, but not be limited to, all pipe of the required sizes, fittings, joint materials, installation of pipe and fitting, excavation and backfill, removal and disposal of water, miscellaneous restoration, concrete blocking as required or shown on the plans, sheeting, shoring, and protection of existing structures, testing, cleanup, and all other operations necessary to complete the work as shown on the plans or as specified.

Water main construction and testing shall be completed in accordance with current City of Elkhart Standard Specifications.

**Pipe Manufacturer**

Pipe shall be as manufactured by Clow, United States Pipe and Foundry, American Cast Iron Pipe Company, Griffin, or approved equal.

The location of the water main may be shifted during the course of construction by the Owner to avoid interference with existing utilities whose exact locations are not known. No additional

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

compensation will be allowed for the shifting of the water main to avoid such interference. In general, the Contractor shall locate all existing utilities prior to the start of the construction.

Pipe Materials

The pipe shall meet the requirements of the latest revision of AWWA Specification C151 and ANSI A-21.51. Ductile iron pipe shall be Class 52.

Each pipe shall have the weight and class designation conspicuously painted on it. In addition, each pipe shall have cast on it the manufacturer's mark and the year in which the pipe was cast. The size of the letters and figures shall be as large as practicable.

Use mechanical joints of the stuffing-box type complying with ANSI A21.11 as modified by ANSI A-21.51 for ductile iron pipe, with push-on joints complying with ANSI A-21.51 for ductile iron; or use rubber gaskets and lubricant complying with applicable requirements of ANSI A-21.11.

All pipes shall be furnished with 1/16 inch thickness cement mortar linings, which conform in all respects to the latest revision of AWWA C104. Cement mortar lining shall be provided with a seal coat. Pipe shall be bituminous coated on the outside.

Pipe Gaskets

Pipe with push-on joints shall have gaskets conforming to AWWA C111 (latest revision). The rubber gaskets shall be made of vulcanized styrene butadiene rubber (SBR) unless otherwise specified by the Owner. Reclaimed rubber shall not be used. When two hardnesses of rubber are included in a gasket, the soft and hard portions shall be integrally molded and joined in a strong vulcanized bond. Gaskets shall be free from porous areas, foreign material, and other defects that make them unfit for the use intended.

Gasket lubricant shall be used to lubricate the parts of the joint for assembly. The lubricant shall be nontoxic, shall not support the growth of bacteria, and shall have no deleterious effects on the gasket material. It shall impart no taste or odor to water in the pipe when used in accordance with AWWA C600, and the pipe has been flushed according to AWWA C-651. The lubricant containers shall be labeled with the trade name or trademark and the pipe manufacturer's name. Brass wedges, containing no lead, shall be provided on all joints for electrical continuity.

Pipe Installation & Placement

All water mains shall be laid to the alignment and depth shown on the plans unless directed otherwise by the Owner. All pipes shall be bedded firmly on undisturbed earth with bell holes excavated beneath the bells. Should the Contractor excavate to a depth below the invert of the pipe without the directions of the Owner, the pipe shall be laid on shaped bedding with compacted granular fill between the pipe and undisturbed earth at the Contractor's expense. Backfill material shall be in accordance with INDOT structural backfill or approved equal.

As each length of pipe is placed in the trench, the joint shall be assembled and the pipe brought to correct line and grade. The pipe shall be secured in place with approved backfill material.

Installed piping shall have a minimum burial depth of 5 feet (60 inches) from the top and may vary to a maximum burial depth of 6 feet (72 inches) to the top of the pipe. Water main shall be installed to line and grade as indicated in the plans.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

A minimum of 10 feet of horizontal separation, outside pipe wall to outside pipe wall, shall be maintained between water main and storm and/or sanitary sewer. A minimum of eight (8) feet horizontal separation shall be maintained between any storm and/or sanitary structure and water main. Sewer crossings with water main shall be have a minimum vertical separation of 18-inches.

Unless deflecting the pipeline to adhere to the project plans, specifications, existing grade or proposed grade, or to readjust the pipes location due to known conflicts, each pipe joint shall be pushed fully home and the pipeline assembly shall appear straight to the eye both horizontally and vertically. Required pipe deflection shall be limited to a maximum of 5 percent defection per joint unless otherwise specified by the manufacturer.

All pipe, fittings, valves, and hydrants shall be lowered carefully into the trench in such a manner as to prevent damage to water main materials, protective coating and linings. Under no circumstances shall water main materials be dropped or dumped into the trench. Where necessary, the trench shall be dewatered prior to installation of the pipe.

The location of the water main may be shifted during the course of construction by the Owner, Engineer or City of Elkhart to avoid interference with existing utilities whose exact locations are not known. No additional compensation will be allowed for the shifting of the water main to avoid such interference.

In general, the Contractor shall locate all existing utilities prior to the start of construction.

**Water Main Bore and Jack Installation**

**General Description**

The bid price shall include, but not limited to, all costs for labor, materials, tools, equipment, excavation, sheeting, shoring, carrier pipe, casing pipe, spacers, pipe end seals, dewatering, backfilling, and compaction, boring, and jacking. Contractor shall make all necessary arrangements and pay all associated costs with INDOT for the crossing.

**Carrier Pipe**

The carrier pipe shall be ductile iron, Thickness Class 52, unless otherwise noted in the plans, and shall conform to the detailed specifications for ductile iron pipe.

Carrier pipe shall be attached to a manufactured skid or spacer that removes the carrier pipe load from the carrier pipe bell and distributes the weight of the pipe to the pipe's body. Casing spacers shall be as manufactured by Advance Products & Systems Inc, Cascade Waterworks Mfg., or approved equal. Casing spacers shall be installed at ten (10) foot intervals. In addition, where applicable, there shall be a minimum of two (2) casing spacers or skids installed on each section of pipe.

Pressure testing of the carrier pipe shall be conducted prior to backfilling of the boring/jacking and receiving pits and shall be conducted in accordance with the detailed specifications for ductile iron pipe.



**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

Casing Pipe Material

Steel casing shall be electric-fusion, arc-welded steel pipe in accordance with ASTM A139, grade B, or electric-resistance welded pipe in accordance with ASTM A53, Type E, Grade B, as applicable. Material furnished under this specification shall be covered by the type of certification specified in the Frequency Manual and in accordance with Section 916 of the current INDOT Standard Specifications.

Casing pipe shall be smooth wall steel with a minimum yield strength of 35,000 pounds per square inch and shall be of the diameter and wall thickness as shown on the plans. The interior and exterior of the pipe shall be coated with a protective asphaltic barrier. The inner diameter of the casing pipe has been selected to provide minimum tolerance for the installation of the carrier pipe. The Contractor may, at his own expense, use a larger inner diameter casing pipe if he so desires.

The casing pipe manufacturer's design jacking loads shall not be exceeded during the installation process. The pipe shall be designed to take full account of all temporary installation loads.

Casing Pipe Thickness Requirements

The casing pipe shall be of the diameter specified on the project plans. The following schedule of casing pipe thicknesses shall govern unless otherwise specified on the plans:

Nominal Pipe Size (Inches)	Nominal Wall Thickness (Inches)
10 or less	0.188
12 & 14	0.250
16	0.281
18	0.312
20 & 22	0.344
24	0.375
26	0.406

Sheeting & Shoring

Sheeting and shoring shall be provided if the nature of the conditions of the soil or height of exposed faces is such as to endanger either the traveling public or the integrity of the road surface.

Dewatering

When groundwater is known or anticipated, a dewatering system of sufficient capacity to handle the flow shall be maintained at the site until its operation can be safely halted. The dewatering system shall be equipped with screens or filter media sufficient to prevent the displacement of fines.

Jacking

This method shall consist of pushing steel pipe into the embankment.

Excavation shall be undertaken within the steel cutting edge or shield attached to the front section of the pipe to form and to cut the required opening for the pipe. Excavation shall be undertaken

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

with the shield and shall not be carried ahead to the pipe far enough to cause loss of soil. When jacking in loose, granular, or running soils, the shield shall have means of inserting steel baffle plates and shelves for the purpose of preventing voids.

The excavations for the boring/jacking and receiving pits shall be adequately shored to safeguard existing substructures and surface improvements against ground movement in the vicinity of the jack supports. Adequate space shall be provided within the boring/jacking pit excavation to permit the insertion of the lengths of casing to be bored and jacked. The thrust wall shall be adequate for installation of the jacked pipe. It shall be constructed normal to the proposed line of thrust.

In accordance with INDOT standards, once jacking has been initiated beneath INDOT Right of Way, it shall be progressed on a 24-hour basis without stoppage (except for adding lengths of pipe) until the leading edge of the pipe has reached the receiving pit.

For all borings crossing the INDOT Right of Way and adjacent pavement, the use of water or any other liquids to facilitate casing emplacement and spoils removal is prohibited. A suitable lubricant, such as bentonite, may be applied to the outside surface of the jacked pipe, for borings not crossing the INDOT Right of Way only, to reduce frictional forces. This shall be accomplished by the use of pressure equipment that pumps the lubricant to the outside of the shield on the lead pipe or the lubricant may be pumped to the outside surfaces of the pipe through grout holes.

**Boring**

This method shall consist of pushing the pipe into the wall with a boring auger rotating within the pipe to remove the spoil.

Advancement of the cutting head ahead of the pipe will not be permitted except for that distance to permit the cutting head teeth to cut clearance for the pipe. If granular, loose, or unstable soil is encountered during the boring operation, the cutting head shall be retracted into the casing a distance that permits a balance between pushing pressure and the ratio of pipe advancement to quality of spoil to ensure no voiding is taking place. The excavation by the cutting head shall not exceed the outside diameter of the pipe by more than 1/2-inch. The face of the cutting head shall be arranged to provide reasonable obstruction to the free flow of soft or porous material.

The use of water or liquids to soften or wash the face will not be permitted. Water may be used in sticky clays to facilitate spoil removal providing water is introduced behind the cutting head. Lubricating agents, such as bentonite, may be used to lubricate the casing and reduce friction between casing and embankment.

The auger boring machine selected shall be sized with torque and thrust capacities compatible with the sized of pipe or casing to be installed and expected soil and geotechnical conditions. Monitoring equipment shall be provided to continuously monitor auger thrust and torque, pipe jacking thrust, and advance rate. These parameters shall be recorded and available at all times for review by the Engineer.

**Casing Installation**

All boring/jacking operations shall be performed by a qualified Contractor with at least 5 years of experience involving work of a similar nature. The Contractor shall provide descriptions of a minimum of five (5) similar projects, including references.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

The Contractor shall be responsible for maintaining the specified line and grade and for preventing settlement of overlying structures, or other damage due to the boring and jacking operations. The Contractor shall control the application of the jacking pressure and excavation of materials ahead of the casing but within the jacking head as it advances to prevent the casing from becoming earthbound or deviating from the required line and grade. Allowable line and grade deviations in horizontal and vertical alignments shall be no greater than 0.2 feet per 100 feet in any direction over the length of the jacking or boring to a maximum deviation of 0.5 feet. Final installation shall be without a sag in the pipe.

The Contractor shall investigate the existing soils and subsurface conditions so that appropriate equipment is provided to counter conditions that can cause delay such as groundwater, running sand, boulders, etc. Subsurface samples shall be collected to a minimum depth of one (1) pipe diameter below the proposed casing invert elevation. Test samples shall be collected within 20 feet horizontally of the centerline of the proposed casing location and at a maximum of 300 feet intervals. The Contractor shall supply two (2) copies of all subsurface test results to the Engineer. The costs for subsurface investigation shall be incorporated into the cost of the boring/jacking operations. No additional compensation shall be made for subsurface testing.

The Contractor shall pothole all existing utilities within and adjacent to the proposed location of the bored and jacked casing prior to excavating the boring/jacking and receiving pits. The Contractor shall coordinate all potholing with the respective utility Owners.

**Obstruction In Installation**

If an obstruction is encountered during installation which stops the forward progress of the pipe, and it becomes evident that it is impossible to advance the pipe, and if ordered, operations shall cease and the pipe shall be abandoned in place and filled completely with grout or other approved materials. The abandoned work will be paid for at 75-percent of the contract unit price, for the installed footage.

**Casing End Caps**

Casing ends shall be covered with a 30-mil PVC cover and secured with stainless steel bands (as detailed) to provide a seal from backfill material.

**Work Site Restoration**

Access pits and excavations shall be backfilled with suitable material approved by the Engineer according to the controlled density method stated in the Indiana Department of Transportation Standard Specification and verified by density reports submitted to the Engineer. The disturbed surface area shall be top-soiled, seeded, fertilized, mulched, and anchored according to INDOT Standard Specifications Section 621 and 914. Slopes steeper than 1-on-3 shall be sodded according to the Standard Specifications. If final restoration is not completed within 5 days after completion of the bore and jack operation, temporary erosion control measures shall be required as directed by the Engineer.

The permit, including surety requirements, shall remain in effect for a minimum of one year after final inspection of the work to monitor for settlements of the pavement and/or slope.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

Tracing Wire

All water main shall be provided with two (2) electrically continuous #12 copper-clad steel, high strength, tracing wire. Wire shall be loosely installed along with installation of the pipe and connected to the pipe at a maximum spacing of 25 feet. Valve boxes, air release manholes, and lift stations shall serve terminal points for tracer wire runs. Wires shall be attached to the valve box to allow for reliable connection of tracing equipment. Wire runs ending at structures shall be easily accessible from the surface, and shall not require confined space entry. Wire in structures shall be tag labeled identifying purpose and service direction. Testing for conductivity shall be performed on each section of tracer wire, immediately following installation and prior to final project acceptance. Tracer wire runs that are found to be non-conductive shall be repaired or replaced at the Contractor's expense

The location of the water main may be shifted during the course of construction by the Owner to avoid interference with existing utilities whose exact locations are not known. No additional compensation will be allowed for the shifting of the water main to avoid such interference.

In general, the Contractor shall locate all existing utilities prior to the start of construction.

Examination of Material

All pipes, fittings, valves, hydrants, and other appurtenances shall be examined carefully for damage and other defects immediately before installation. Defective materials shall be marked and held for inspection by the Owner, who may prescribe corrective repairs or reject the material.

Pipe Ends

Pipe ends shall either be factory or evenly cut and chamfered in the field. The outside of the plain end and the inside of the bell shall be wiped clean and dry and be free from dirt, sand, grit, or any foreign materials before the pipe is laid.

Cleaning & Swabbing

If dirt enters the pipe, it shall be removed and the interior pipe surface swabbed with a 1 percent hypochlorite disinfecting solution. If, in the opinion of the Owner, the dirt remaining in the pipe will not be removed by the flushing operation, then the interior of the pipe shall be cleaned by mechanical means such as a hydraulically propelled foam pig or other suitable device acceptable to the Owner, in conjunction with the application of a 1 percent hypochlorite disinfecting solution to the interior pipe surface. The cleaning method used shall not force mud or debris into the interior pipe-joint spaces and shall be acceptable to the Owner.

Pipe Plugs

At times when pipe-laying is not in progress, the open ends of pipe shall be closed by a watertight plug or other means approved by the Owner. The plug shall be fitted with a means for venting. When practical, the plug shall remain in place until the trench is pumped completely dry. Care must be taken to prevent pipe flotation, should the trench fill with water.

Prior to removal of the plug for extending the line or for any other reason, air and/or water pressure in the line shall be released.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

Flooding by Storm or Accident during Construction

If the main is flooded during construction, it shall be cleared of the floodwater by draining and flushing with potable water until the main is clean. The section exposed to the floodwater shall then be filled with chlorinated potable water that, at the end of a 24-hour holding period, will have a free chlorine residual of not less than 25 mg/l. The chlorinated water may then be drained or flushed from the main. After construction is completed, the main shall be disinfected.

Maximum Trench Width

The maximum trench width shall be shown on the plans unless altered by the Owner in writing. The additional expense for excavation and pavement replacement made necessary by a wider trench width will be incidental to this item and no additional compensation will be made to the Contractor.

Backfilling

The Contractor shall not backfill water main above the top of the pipe until the alignment and the pipe joints have been checked, inspected and approved by the Owner or City of Elkhart.

All main, as soon as laid, shall have the space between the pipe and the bottom and sides of the trench packed full by hand and thoroughly tamped with a shovel or light tamper, as fast as placed in layers not exceeding 4 inches up to the level of the top of the pipe. The filling shall be carried up evenly on both sides. Care shall be taken that no rock, frozen material, or other hard substances are placed in contact with the pipe.

The main shall be covered by hand to a depth of at least 8 inches. The material shall be placed in layers not exceeding 4 inches in depth, and each layer thoroughly tamped and compacted.

Material for backfilling the space between the pipe and the bottom and sides of the trench, and for covering to a depth of 2 feet, shall be clean dry earth, free from stones larger than 2 inches, frozen material or other hard substances (except for conditions hereinafter defined). Material shall be INDOT structural backfill or approved equal.

The remainder of the trench shall be backfilled by using the material originally excavated from the ditch (except for conditions hereinafter defined), to a height slightly above the original elevation of the ground. Backfilling shall not be left unfinished for more than 100 feet behind the completed pipe work.

No heavy rock shall be dropped into the trench nor placed within 3 feet of the pipe. In depositing rock in the trench, care must be taken that the rock does not injure the structure. All spaces between pieces of rock shall be filled with earth to insure there being no voids.

Backfilling from the top of the pipe to final grade shall be made in lifts not exceeding 12 inches in depth, and shall be compacted to 95% maximum dry density as defined by the modified proctor test.

Density testing of trench backfill compaction shall be performed by the Contractor at a maximum spacing of 500 feet, or less if determined necessary by the Owner. Costs for density testing shall be considered incidental to the water main pay item.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

Testing

Ductile iron water main shall be installed and tested as per the manufacturer's instruction and as per AWWA C600 "Installation of Ductile-Iron Water Mains and Their Appurtenances" (latest edition) and current City of Elkhart Standard Specifications. Pipe shall be disinfected as per AWWA C651 "Disinfecting Water Mains" (latest Edition). All testing shall be witnessed by the proper Owner representative(s) and the City of Elkhart. The Contractor shall provide the Owner, Engineer and City of Elkhart a minimum of 48 hours notice in advance of all testing.

Leakage Test

Leakage shall be defined as the quantity of water that must be supplied into the newly laid pipe, hydrants, and services; or any valved section thereof: to maintain 150 psi of pressure after all air has been expelled and the pipeline filled with water. Leakage test duration shall be 2 hours.

- 1.) No pipe installation will be accepted if the leakage is greater than that determined by the formula: Allowable leakage in gallons shall be less than:

$$L = [(S \times D) (P^{0.5})] / 148,000 = \text{Gallons.}$$

S = Length of Pipe (Feet)

D = Nominal Diameter of pipe (inches)

- 2.) Any leakage in excess of the above formula including hydrants, valves, and service connections will be repaired by the Contractor at his own expense.
- 3.) Pumps, gauges, connections, measuring devices, or any other necessary apparatus will be furnished by the Contractor. Leakage testing will be considered an incidental cost of water main and any cost thereof should be included in the unit prices of other pay items.

Bacteriologic Tests

Flushing and disinfection of water main shall be completed in accordance with current City of Elkhart Standard Specifications. After final flushing, and before the water main is placed in service, samples shall be collected from the end of the line and tested by an approved independent laboratory for bacteriologic quality and shall show the absence of coliform organisms. If the presence of coliform organisms is detected; the Contractor, at his own expense, shall disinfect and retest the failed section until satisfactory results are obtained. Two satisfactory test on samples taken 24 hours apart are required. Disinfection and bacteriologic tests are considered incidental of water main and any cost thereof should be included in the unit prices of other pay items. The Contractor shall employ the Owner or other certified laboratory for testing.

Measurement and Payment

Payment for ductile iron water main of the respective size(s) shall be paid for at the respective unit prices(s). Pipe shall be measured along the centerline of the installed pipe without deduction for the laying length of valves or fittings. The water main will not be considered complete until tested by the Contractor and accepted by the City of Elkhart. A preliminary record drawing as well as the results of bacteriologic and pressure tests shall be submitted to the City for review and acceptance.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

The Contractor will be paid for water main installed by bore and jack based upon the actual number of linear feet of carrier pipe and casing pipe installed, as ordered and as specified. Pipe length will be measured along the centerline of the casing, and will be measured for payment under the respective Contract Item. Casing pipe and casing spacers within the casing will not be measured separately for payment under any other item, but shall be included with the unit cost of the carrier pipe.

Connection of proposed water main to existing water main shall be incidental to these line items.

Definition of Contract Items

<u>Item No.</u>	<u>Unit</u>	<u>Description</u>
13.1	LFT	12" Ductile Iron Water Main
13.2	LFT	12" Ductile Iron Water Main by Bore and Jack

**ITEM 14 – WATER MAIN FITTINGS**

General Description

For the unit price bid per pound for the ductile iron fittings of the respective sizes as shown and described in the project plans, the Contractor shall furnish all fittings, joint material, installation of pipe and fittings, excavation, backfill, compaction, dewatering, sheeting shoring, and protection of existing structures, testing, miscellaneous cleanup, and all other operations necessary to complete the work as shown on the plans or as specified.

Ductile iron water main fittings shall be used, corresponding to the water main material selected, in accordance with these specifications.

Manufacturer

Fittings shall be manufactured by Clow, United States Pipe, American Cast Iron Pipe, Griffin, Tyler Pipe or approved equal.

Fitting Requirements

Fittings shall comply with all applicable provisions of AWWA C-153, latest revision.

Fittings shall have a minimum working pressure of 350 pounds per square inch (psi).

All fittings shall be furnished with mechanical joint type ends meeting AWWA C-111 and A21.11, latest revision. At joints where restraint is required "set screw" retaining glands will be used and standard mechanical joint glands will be omitted. Restraint for additional lengths of pipe beyond fittings shall be calculated using the D.I.P.R.A. method of thrust calculations. Where additional restraint is necessary, mechanical joint pipe with retainer glands shall be used in place of slip joint pipe. Thrust blocking, as shown in the detail, may be used in lieu of additional joint restraints.

Fitting Identification

Each fitting shall have distinctly cast upon it the following information: manufacturer's mark, nominal diameters of all openings and the fraction of the circle on the bends. The letters and figures shall be cast on the outside and shall be as large as practicable.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

Lining and Coating

Fittings shall be ductile iron and furnished with a 1/16-inch thick cement mortar linings which conform in all respects to the latest revision of AWWA C-104. The cement mortar lining shall be provided with a seal coat. Fittings shall be bituminous coated on the outside.

Mechanical Joint Retaining Glands

Glands shall conform to applicable portions of AWWA C-110, latest revision, and shall be manufactured from ductile iron. Each gland shall have a sufficient number of double heat treated parkerized steel square headed set screws, with cup points. When installed with 75 foot pounds of torque, the cup points shall bite into the surface of the pipe and prevent blow off or movement of the joint at a line pressure up to 200 pounds per square inch (psi). Glands shall be of the same manufacture as the fitting body and be equivalent to Clow fig. 1058.

Tapping Valve and Sleeve

City of Elkhart personnel will perform the physical tapping of water main. All excavation and preparation work shall be provided by the Contractor and the Contractor shall provide all materials.

Tapping valves shall conform to the latest revision of AWWA C-509. Manufacturers shall be American Flow Control, Mueller or an approved equal. Tapping valves shall be suitable for installation with the corresponding tapping sleeve and shall be compatible with City of Elkhart tapping equipment.

Refer to Item 15 – Gate Valves and Boxes for valve requirements.

Measurement and Payment

The Contractor shall be paid for each Tapping Valve & Sleeve on a per unit basis.

The cost of all other water main fittings, regardless of water main material, shall be incidental to the contract and included in the bid price for the water main.

Definition of Contract Items

<u>Item No.</u>	<u>Unit</u>	<u>Description</u>
14.1	EA	12" Tapping Valve & Sleeve

**ITEM 15 - GATE VALVES AND BOXES**

General Description

The unit bid price shall include, but not be limited to, all material valves, valve boxes, connecting pipe, joint material, installation of valve, excavation, backfill, compaction, dewatering, miscellaneous restoration, concrete blocking as required or as shown on the plans, sheeting, shoring, protection of existing structures, testing, cleanup, and all other operations necessary to complete the work as shown on the plans or as specified.



**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

Manufacturer

Gate valves shall be Clow, Mueller, or approved equal.

Valve boxes shall be manufactured by Tyler Pipe Industries, or approved equal.

Valve Requirements

All gate valves shall conform to AWWA C-509, latest issue.

End connections shall conform to AWWA C-111 for mechanical joints, latest issue.

All valves shall be resilient wedge with mechanical joint ends, 200 psi working pressure, non-rising stem, O-ring seals in the stuffing box (two minimum), open left (counter clock-wise) with an operating nut and 2-inch square wrench nut.

Wedges shall be cast iron, fully encapsulated in urethane rubber except the guide and wedge nut areas. Synthetic rubber shall be molded in place and bonded to the wedge; mechanical fasteners are not permitted.

Valves shall be of the non-rising stem type. Valve stems shall have integral collars, be high strength manganese bronze having a minimum tensile strength of 80,000 psi, a minimum yield strength of 32,000 psi, and a minimum elongation of 15 percent in two inches. The stem stuffing box shall be of the O-Ring seal type with two rings located above the thrust collar.

All valves shall be tested at a minimum of twice the working pressure of 200 psi.

The interior of the valve shall be coated with liquid applied epoxy and the exterior of the valve shall be coated with liquid applied epoxy or asphalt enamel, or approved equal.

Gate valves shall have minimum warranty of 1-year.

Valve Boxes

The valve box shall be of a two-piece cast-iron construction made up of a screw type section with a 5-1/4 inch shaft. The box shall have an enlarged bottom section, and a top section with cover. The cover shall be marked "Water". The valve box shall be adjustable from 46-inches to 66-inches.

Measurement and Payment

The Contractor shall be paid for each gate valve and box on a per unit basis.

Definition of Contract Items

<u>Item No.</u>	<u>Unit</u>	<u>Description</u>
15.1	EA	12" Gate Valve & Box

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

**ITEM 16 - FIRE HYDRANT ASSEMBLY**

General Description

This bid item shall include, but not be limited to, a hydrant, 6-inch gate valve and box, tie rods, 6-inch pipe (as specified for the water main), connecting pipe fittings, joint material, installation of pipe and fittings, excavation, backfill, compaction, dewatering, miscellaneous restoration, concrete blocking as required or shown on the plans or as specified, sheeting, shoring, and protection of existing structures, testing, cleanup, and all other operations necessary to complete the work as shown on the plans or as specified.

Manufacturer

Hydrants shall be Mueller Super-Centurion A-423 as standardized by the City of Elkhart

Hydrant Requirements

Hydrants shall comply with all provisions of AWWA C-502 "Standard for Dry-Barrel Fire Hydrants", latest revision.

Hydrants shall have a 6-inch inlet connection, a 5-1/4 hydrant valve, a 7-inch internal barrel diameter, and a metal wall thickness no less than 9/16-inch.

Inlet hydrant joint shall be a mechanical joint and shall be mechanically connected to the hydrant assembly using either tie rods or retaining glands. Tie rods, if used, shall be 1-inch in diameter, made of steel, and coated with a permanent rust inhibitor.

The base of the hydrant barrel shall be a minimum of 5-feet 6-inches below grade.

All working parts of the hydrant shall be removable from the top of the hydrant without digging and without the use of a lifting device or special tools. Hydrant top Casting is to be removable without shutting off the auxiliary water inlet valve.

Hydrants shall be of the compression type closing with the line pressure.

The valve opening shall be 5-1/4 inch in diameter. The main valve assembly shall be designed so that the bronze seat ring threads into a bronze bushing in the shoe allowing the seat ring to be removed from above ground without excavation.

The bonnet section shall be designed so all bearing surfaces and stem threads are sealed in a lubricant reservoir and automatically lubricated each time the hydrant is operated. Hydrant shall be shipped complete with lubricant.

The hydrant shoe shall have a 6-inch mechanical joint inlet and at least two drain plugs.

Hydrants are to be furnished with a breakable feature that will break cleanly upon impact. This shall consist of a two-part breakable safety flange and stem coupling or breakaway lugs and breakaway stem coupling. It shall be designed to permit 360-degree rotation of the upper barrel without removal of the ground line flange bolts. Those depending on breakable bolts only, at the ground line flange as a safety device, will not be acceptable. *The breakaway flange shall be no more than 2-inches above grade.*

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

Hydrants shall be located as shown in the plans. All hydrants shall be placed behind the water main and outside of existing ditches or swales.

Hydrant Outlets

Hydrant outlets shall include two (2) 2-1/2 inch nozzles, and one (1) 4-1/2 inch nozzle. Nozzle threads shall conform to the requirements of the local fire department.

Hydrant Color

Hydrants shall be painted in accordance with the City of Elkhart requirements.

Hydrant Open Direction

Hydrants shall open in the direction that the City of Elkhart has standardized and shall be equipped with an operating nut of the same size and shape as the existing City fire hydrants.

Water System Pre-Approval

New hydrants shall be bagged with burlap or of other approved rugged material, and sufficiently secured until final acceptance of the project by the water authority. The cost to install and remove the required covering shall be incidental to the bid item.

Measurement and Payment

The Contractor shall be paid for each fire hydrant assembly on a per unit basis, not including accessories.

Definition of Contract Items

<u>Item No.</u>	<u>Unit</u>	<u>Description</u>
16.1	EA	Fire Hydrant Assembly

**ITEM 17 - PAVEMENT MARKINGS**

General Description

The work shall be in accordance with the current INDOT Standard Specifications for pavement markings.

The Contractor shall be responsible for providing straight and neat lines at typical widths. Any portion of the work deemed by the Town to not be straight, neat, consistent in color, or otherwise unacceptable shall be promptly removed and replaced. Removal shall be done only by methods approved by the Town.

Measurement and Payment

The accepted quantities will be paid for on a line item per the contract unit price. The established pay items shall apply to all work as shown on the plans, including all travel lanes and pavement markings.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

Removal of existing pavement markings by grinding that are unnecessary, irrelevant, modified, or as directed by the Owner is incidental to these pay items.

Definition of Contract Items

<u>Item No.</u>	<u>Unit</u>	<u>Description</u>
17.1	LFT	Line, Paint, Solid, White, 4"
17.2	LFT	Line, Thermoplastic, Solid, White, 4"
17.3	LFT	Line, Thermoplastic, Solid, White, 24" Stop Bar
17.4	LFT	Line, Thermoplastic, Solid, Yellow, 4"
17.5	LFT	Line, Thermoplastic, Solid, Yellow, 8"
17.6	LFT	Line, Thermoplastic, Solid, Yellow, 12"
17.7	EA	Pavement Message Marking, Thermoplastic, Turn Arrowhead
17.8	EA	Pavement Message Marking, Thermoplastic, Straight & Turn Arrowheads

**ITEM 18 – TRAFFIC SIGNAL IMPROVEMENTS**

General Description

The bid price shall include all materials, equipment, coordination, and labor by the Contractor to successfully complete all work to provide a fully operational traffic signal system to the approval of the Owner.

Plan Notes & Details

The work shall be performed in accordance with the plan notes and details on plan drawings C601 & C602 of the contract documents, including but not limited to the note regarding pre-bid investigation of the existing traffic signal controller components, power service point, and system by the Contractor following the Contractor's coordination with the Owner for scheduling the investigation. **The Contractor shall contact the Engineer with any questions or comments regarding the Contractor's findings during the investigation no later than 7 calendar days prior to the established bid opening date so the Engineer may make any necessary design addendum prior to the bid, if any.**

Utility Coordination by The Engineer

The Contractor is advised that the Engineer has coordinated with the electric power utility for the installation of the new tall power pole at the SW corner of the intersection as indicated on plan drawing C601, and transfer of electrical power lines to the new tall pole.

Schematic Plan Drawing Details

The Contractor is advised that the plan drawing details are schematic with existing traffic signal cable details not shown, and the Contractor shall bid and construct the work to include any and all incidental construction in order to complete the fully operational traffic signal system to the approval of the Owner.

Shop Drawings

The Contractor shall submit shop drawings for the proposed new traffic signal pole to the Engineer for review prior to the work.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

“FLIR” Detection System

The Contractor shall provide “FLIR” product user literature to the Owner, and shall hire a “FLIR” system representative to oversee the system installation and proper functioning for this project.

Measurement and Payment

No measurement will be made for the work. The completed work, including all incidentals, as accepted by the Owner will be paid by Lump Sum under the established pay item as bid.

Definition of Contract Items

<u>Item No.</u>	<u>Unit</u>	<u>Description</u>
18.1	LSUM	Traffic Signal Improvements

**ITEM 19 – COMMUNICATIONS CONDUIT**

General Description

This work shall consist of furnishing and installing conduit for the fiber optic communications system. The conduit shall be installed as shown on the plans, linking handholes, vaults, and controller cabinets. Installation methods may include trenching, plowing, and boring, as site conditions require.

Materials

Unless otherwise specified, all communications cable shall be installed in smooth, continuous, pre-lubricated conduit as shown in the plans and as approved by the Engineer. Conduit colors shall be approved by the Engineer.

Conduit shall be either Polyvinyl Chloride (PVC) conforming to NEMA TC-2 for electrical plastic conduit, EPC-80 or HDPE conforming to NEMA TC-7, EPEC 80. Conduit shall terminate without bends if possible. Bends greater than 10 degrees shall be rigid steel conduit; having a minimum radius of 10 times the nominal diameter of the conduit (30 degree maximum bends – 90 degree bends are prohibited). The exterior of the steel bends shall be double wrapped with 10-mil PVC tape.

Each conduit run shall have a tracing wire installed on the outside of the conduit(s) to facilitate locating the buried conduit in the future. The wire shall be a No. 10 AWG stranded copper Type USE wire. The wire shall be connected with a connector at each end to a lightning, gas-protecting arrester mounted in the vault which is attached to a ½-inch x 8-foot long ground rod placed in the floor of the vault. The tracing wire shall be green in color.

Underground warning tape shall be installed in all trenches where conduit is installed. The warning tape shall be installed approximately 12 inches below the surface. The tape shall be 4-inch wide polyethylene material, at least 0.004 inches thick. The tape shall be orange with black letters that say "Caution - Buried Fiber Optic Cable". The message shall be repeated continuously along the length of the tape. Other legends may be tendered for approval.

Above ground markers shall be Pro-Mark Model 301, Orange, 3.85”x72” or Pro-Mark Model 303, Orange, 3.5” x 6’ with PM-TS3 Test Stations, or approved equals. Submit wording for markers for approval before ordering.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

A pull tape for pulling future cable through the conduit shall be located inside the conduit, tied off and labeled at each terminus of the conduit.

Pull tape will be prefabricated woven polyester tape made from low friction, high abrasion resistant yarns providing a low coefficient of friction. Pull tapes will be prelubricated. Pull tapes will be printed with sequential footage markings for accurate measurement. Pull tapes will be ½ inch wide and have a minimum tensile strength of 1,250 pounds.

After installation the conduits shall be sealed / plugged with a suitable compound so as to prevent the entrance of moisture or gases.

**Construction**

Before commencing work, a complete schedule of materials and equipment proposed for installation shall be submitted to the Engineer for approval. This schedule shall include catalog cuts, diagrams, drawings, and other such descriptive data that may be required by the Engineer.

All submittals shall include the manufacturer brand name and part number where applicable. Where more than one item is present on a submittal sheet, the appropriate item or items shall be circled, not highlighted. In the event that any materials or equipment fail to comply with specification requirements, are not circled, or submittals are not packaged, such items may be rejected. New submittals on rejected items shall be supplied to the Engineer for approval.

When it is required by these specifications that a test be made of the material to be used on the project, the Contractor shall furnish the Engineer a certified copy of such test prior to the installation of such material.

Aboveground fiber optic conduit markers shall be installed to indicate fiber optic cable routing. The markers shall be placed at handholes and vaults, and midpoint between adjacent fiber optic handholes and vaults and/or such that the spacings are no more than 500 feet between markers. Markers with test stations shall be installed at handholes and vaults with the test stations connected to the trace wires in the conduits. Markers without test stations shall be installed at locations between structures.

Pull tape shall be located inside the conduit, tied off and labeled at each terminus of the conduit. All conduit connected to handholes or vaults shall be installed flush with the inside wall and a minimum of 3 inches above the bottom of the floor. After installation the conduits shall be sealed / plugged with a suitable compound so as to prevent the entrance of moisture or gases.

The proposed path of the conduits shall be determined by the Contractor and approved by the engineer before installation commences. The Contractor shall bore the conduits under all existing roadways, creeks and ditches. A minimum separation of 36" between the bored conduit and creek or ditch bottoms shall be required. The contractor shall pass underneath any culverts or roadway drainage structures (including underdrains) in conflict with the conduit route by a minimum separation of 24".

The Contractor shall provide GPS coordinates of the completed conduit route at all changes of direction and termination points. These coordinates shall be indicated on the final as-built plans of the project and transmitted to the Owner in paper, AutoCad, and pdf formats. Depths of bores shall also be recorded and listed on the as-built plans.

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

Measurement and Payment

The completed work as described will be measured by the linear foot, installed, measured horizontally along the surface from center of handhole to center of handhole, vault or other terminating point. Pull tapes, warning tapes, trace wires, steel bends, cable markers and all other items necessary to make a complete installation as described in these contract documents are considered incidental and will not be measured or paid for directly, the costs of these items shall be included in the cost of the conduit.

Definition of Contract Items

Payment for the work included will be at the contract unit price, measured as stated above, and under the following pay items:

<u>Item No.</u>	<u>Unit</u>	<u>Description</u>
19.1	LFT	Communication Conduit, 2 inch

**ITEM 20 – ATMS VAULTS ANND HANDHOLES**

General Description

This work consists of installing new Advanced Traffic Management System (ATMS) vaults and handholes. Vaults shall be placed as shown on the plans, with final approval of locations by the Engineer before installation. It is the contractor's responsibility to coordinate with and avoid, if possible, existing utilities.

1. General

- A. Install new ATMS vaults and handholes as necessary along the fiber route as noted on the plans or at the required spacing.

Materials

Acceptable vaults shall be:

- Quazite 48" x 48" PG Style, Cover: Extra Heavy Duty w/ 6 x 4 Tubing w/ bolts, part no. PG4848HH00 except if in pavement area. Box: PG4848BA48. All vaults must be ANSI Tier 22 rated.
- 48" x 48" x 36" (interior) precast concrete box in accordance with INDOT Specification 807.03 if under pavement areas.
- Other approved equals

All handholes shall be:

- Quazite 24" x 36" PG Style, Cover: with bolts, part no. PG2436HA00. Box: PG2436BA36. All handholes must be ANSI Tier 15 rated. Not for use in pavement areas.
- INDOT precast signal handhole, see INDOT specifications. To be used under pavement areas.
- Other approved equals

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

All handhole and vault covers are required to be bolted into place to prevent accidental removal by mowing crews or other unintentional means. New continuous pull ropes/tapes will be placed into each run of conduit from structure to structure. Pull ropes/tapes will be made of high tensile, high tenacity, low shrink polyester fibers with a minimum tensile strength of 1200lbs. All covers shall bear the legend 'Traffic Management System'.

Construction

All conduit will be made continuous between each handhole or vault. Pull ropes or pull tape will be installed between each handhole or vault and anchored at each structure leaving 15' of slack in each location. The conduit will be verified continuous and free of dirt and debris between each structure and all other relevant connection points. Conduit will be verified water tight by performing an air pressure test before cable or pull ropes/tapes are installed within the conduit. Material surrounding the ATMS structures will be tamped and added in such a manner so that there are no voids or depressions formed. Conduit entrance and exit points in the new ATMS structures shall be sealed watertight and ends of the conduit shall contain bells to protect the cable being pulled into it. The contractor shall field adjust structures as necessary to avoid utility conflicts.

The Contractor shall provide GPS coordinates of the completed handhole and vault locations. These coordinates shall be indicated on the final as-built plans of the project and transmitted to the Owner in kml, csv or excel, and pdf formats.

Measurement and Payment

The completed work as described will be measured by the unit of each and includes furnishing and installation of a new structure, connecting conduit or cable, a bolt down cover and all other accessories necessary for a complete installation.

Definition of Contract Items

Payment for the work included in this item, as measured above, will be included in the following pay items. The cost of materials, labor, equipment, and necessary incidentals are included in the cost of this work.

<u>Item No.</u>	<u>Unit</u>	<u>Description</u>
20.1	EA	ATMS Handhole
20.2	EA	ATMS Vault

**ITEM 21 – SITE LANDSCAPE IMPROVEMENTS**

General Description

The Contractor shall provide and install site landscaping improvements at the intersection of County Road 17 and County Road 4 in accordance with plan details. This project requires no irrigation system construction.

Landscape Materials and Installation

The lump sum line item shall include material and installation of all proposed landscape materials noted in the plans, including sod, grass seed, shrubs and steel edging, etc. to complete the proposed landscaping installation.



**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

Landscape improvements shall be coordinated with the existing Elkhart County signage and proposed traffic signal improvements located at the intersection of County Road 4 and County Road 17. Landscape improvements shall be adjusted to avoid conflicts as needed.

Maintenance and Warranty

The Contractor shall provide maintenance of proposed landscape improvements for a period of three (3) months after the date of substantial completion. Maintenance activities shall include the following:

1. Regular watering to prevent shrubs, sod and seeding from drying out.
2. Control growth of weeds and apply herbicide as needed.
3. Immediately reseed bare areas and/or repair sod as needed.

Measurement and Payment

No measurement will be made for the work. The completed work as accepted by the Owner will be paid by Lump Sum under the established pay item as bid.

Definition of Contract Items

<u>Item No.</u>	<u>Unit</u>	<u>Description</u>
21.1	LSUM	CR 17 Landscape Improvements

**ITEM 22 - SIGNAGE**

General Description

The Contractor shall remove existing signage in conflict with proposed improvements and reset signs as noted in the plan drawings. The final locations of all signs are not shown on the plans and shall be as directed by the Town.

Sign and Post Material

All sign material shall be in accordance to INDOT Standard Specifications. Sheet signs shall be rigidly and securely attached to square, steel, type 1 breakaway posts.

Measurement and Payment

Signage shall be paid on a per unit basis. The bid price shall include, but will not be limited to, all cost for labor, materials, tools, equipment and all incidental work. Quantities for payment under these items shall be measured per each sheet sign and post installed.

Definition of Contract Items

<u>Item No.</u>	<u>Unit</u>	<u>Description</u>
22.1	EA	Sign, Sheet, Relocate

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

**ITEM 23 - LANDSCAPE RESTORATION**

General Description

The contract item shall include, but will not be limited to, all labor, materials, tools, equipment, excavation, seeding, sodding, staking, fertilizer, and watering as needed for successful establishment of vegetation.

Material

Grass seed shall consist of a mix of 40 pounds of Kentucky bluegrass, 10 pounds of red top, 10 pounds of white clover, and 10 pounds of farm rye. Seed mix shall be sown at a rate 70 pounds per acre. Sowing shall be performed by mechanical seeder, operating in two directions. Sown areas shall be lightly raked and rolled with a light hand roller.

Preparation of Ground

On all areas requiring restoration, the backfill, fill and embankments shall be brought to a subgrade level four inches below finish grade.

Once the subgrade has settled, topsoil shall be deposited and spread to a finish depth of at least four inches and finely raked.

Roadside Ditch Restoration

The Contractor shall restore any roadside ditch within State Road 13 right-of-way by the following means:

<u>Ditch Slope</u>	<u>Restoration Method</u>
< 1%	Seeding
1%-3%	Sodding along ditch bottom
≥ 3%	Rip-Rap w/Geotextile Filter Cloth

The Contractor shall consult with the Engineer to determine ditch slope and therefore the most appropriate method of restoration.

Seeding Season

Seeding shall be performed only within the months extending between August 15<sup>th</sup> to October 15<sup>th</sup> and April 1<sup>st</sup> to June 1<sup>st</sup>, unless otherwise approved by the Engineer.

Measurement and Payment

Payment for Clearing Right of Way will be by lump sum.

Definition of Contract Items

<u>Item</u>	<u>Unit</u>	<u>Description</u>
23.1	LSUM	Landscape Restoration

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

**ITEM 24 - MOBILIZATION AND DEMOBILIZATION**

General Description

*This work shall consist of all work necessary for the movement of personnel and equipment to and from the project site, and for the establishment and removal of all field offices, buildings, and other facilities necessary for the performance of the work.*

Limitations

*For the purpose of payment, the mobilization portion of this work will be limited to 5 percent of the original total contract price. The first progress estimate will include a payment for 50% of the pay item for Mobilization. The remaining 50% of this item will be paid when the contract reaches 50% of completion. The Contractor shall remove all construction debris, equipment and materials within thirty (30) calendar days of reaching substantial completion.*

Measurement and Payment

The Contractor shall be compensated on a lump sum basis for mobilization and demobilization. The Contractor may be paid 50% of the lump sum amount in the first pay application and the balance once the project is 50% complete.

Definition of Contract Items

<i>Item No.</i>	<i>Unit</i>	<i>Description</i>
24.1	LSUM	Mobilization & Demobilization (5% Max)

**ITEM 25 – RESET SECTION CORNER MONUMENT**

General Description

Regarding the existing section corner monument within the proposed paving reconstruction limits of this Project at the west R/W line of CR 17, approx. station 36+50, line 'CR 4'.

The Contractor shall be responsible for coordination with the Elkhart County Surveyor's Office, sufficiently in advance of any disturbance to the existing monument. The Surveyor's Office will set reference stakes at locations agreed by the Contractor for the Surveyor's Office to take accurate reference measurements from the stakes to the monument. The Contractor shall be responsible for protecting the reference stakes to remain undisturbed throughout the course of the project construction. The Surveyor's Office will provide a Harrison monument. The Contractor shall be responsible for accurately resetting the section corner using the provided Harrison monument and the provided reference stakes and reference dimensions, following the construction of the final pavement surface layer. The monument shall be set in 24" deep concrete with the top of the Harrison monument set flush with the top of the concrete at 1/4" below finished pavement surface. The preferred dimension of the concrete is in a jack-hammered hole at 10" to 12" square in plan view, with the monument placed in the middle of the concrete in plan view. An acceptable alternate to the square concrete plan view dimensions is a circular coring of the pavement at 8" diameter minimum in plan view, with the monument placed in the middle of the concrete in plan view. All work by the Contractor shall be done under the supervision of a registered Land Surveyor licensed in the State of Indiana. The Contractor shall be responsible

**ELKHART COUNTY BOARD OF COMMISSIONERS**  
**COUNTY ROAD 4 IMPROVEMENTS**

for providing undisturbed curing of the concrete. Concrete shall be minimum 4,000 PSI 28-day compression strength mix.

Measurement and Payment

All related work shall be included in the cost of the established Lump Sum pay item as bid.

Definition of Contract Items

<i>Item No.</i>	<i>Unit</i>	<i>Description</i>
25.1	LSUM	Reset Section Corner Monument

ELKHART COUNTY BOARD OF COMMISSIONERS  
COUNTY ROAD 4 IMPROVEMENTS

APPENDIX A  
SOIL BORING LOGS