BOARD OF PUBLIC WORKS AND SAFETY (Form B-01-2012)
Agenda Request Form

Organizations and individuals are asked to submit a request form and supporting documents to be placed on the agenda. You will be contacted by the City confirming the date of the meeting in which your request will be heard. Please make sure that your contact information is accurate in case we need to get in touch with you. The Board of Works meets on the 1st and 3rd Monday of each month at 5:00 p.m. in City Hall located at 70 E. Monroe Street.

Date Submitted:	February 12, 2019	**Meeting Date:**	March 4, 2019
Contact Information:			
Requested by:	Mark Richards		
On Behalf of Organization or Individual:	Department of Planning & Engineering		
Telephone:	317-736-3631		
Email address:	mrichards@franklin.in.gov		
Mailing Address:	70 E. Monroe Street, Franklin, IN 46131		
Describe Request:			
Request approval of Change Order 005 for the King Street Phase 4 project.			
List Supporting Documentation Provided:			
Change Order 005			
Who will present the request?			
Name:	Mark Richards	**Telephone:**	317-736-3631

In order for an individual and/or agency to be considered for new business on the Board of Works agenda, this reservation form and supporting documents must be received in the Mayor's office no later than 4:00 p.m. on the Wednesday before the meeting.

INDIANA Department of Transportation

Construction Change Order and Time Extension Summary

Contract Information	Contract No.: R -37572	Letting Date:12/13/2017	
District:SEYMOUR DISTRICT	AE:Wren, Rachel	PE/S:Dowty, Chris	Status:Draft

Change Order Information

Change Order No.: 005 EWA: Y or Force Acct: N

Date Generated: 10/22/2018 Date Approved: 00/00/0000

Reason Code: CHANGED COND, Utility Related

Description: Booster Pumps

Original Contract Amount	$ 4,528,000.00	
Current Change Order Amount	$ 16,410.00	Percent: 0.362 %
Total Previous Approved Changes	$ -780.00	Percent: -0.017 %
Total Change To-Date	$ 15,630.00	Percent: 0.345 %
Modified Contract Amount	$ 4,543,630.00	

Time Extension Information

Date Initiated 00/00/0000 Date Completed 00/00/0000

Original Contract Time: SS Completion Date 00/00/0000 or SS Calendar/Work Days 0
SP Date 00/00/0000 or SP Days
(SS = Standard Specification, SP = Special Provision)

Time Element Description:

Current Time Extension: SS Days 0 SP Days 0 SP Days Value $ 0.00

Previous Time Approved: SS Days by AE:_____ DCE:_____ SCE:_____ DDCM:_____

SS Days_____ SP Days Value $ _____

Revised Contract Time: SS Completion Date 00/00/0000 or SS Calendar/Work Days 0
SS Date 00/00/0000 or SP Days 0

INDIANA Department of Transportation
Construction Change Order and Time Extension Summary

Review and Approval Information

Required Approval Authority	AE:_____ DCE:_____ SCE:_____* DDCM:_____*
($ per Change Order)	(- LE $ 250K-) (- LE $ 750K -) (-- LE $ 2 M --) (-- GT $ 2 M --)
(Days per Contract)	(50 SS days) (100 SS days) (200 SS Days) (GT 200 SS days)
Verbal Approval Required?	Y / N If Y, by_____ Date Issued_____
Total Change To-Date>5%?	Y / N If Y , Copy to Program Budget Manager_____
Scope/Design Recommendation Required?	Y / N If Y, Referred to Project Manager(PM) _____
	Date to PM_____ Date Returned_____
Approval Authority Concurs with PM?	Y / N If Y, Concurrence by_____ Date_____
	If N,Resolution: Approved _____ Disapproved _____
	Resolved by_____ Date_____
LPA Signatures Required?	Y / N If Y, Date to LPA _____ Date Returned _____
FHWA Signatures Required?	Y / N If Y, Date to FHWA_____ Date Returned_____

* Field Engineer Recommendation (Required for SCE or DDCM Approval)

Field Engineer _____ Date _____

Comments: _____

_____

_____

_____

_____

Contract: R -37572
Project: 1400298 - State:140029800LC5
Change Order Nbr: 005
Change Order Description: Booster Pumps
Reason Code: CHANGED COND, Utility Related

CLN	PCN	PLN	Item Code	Unit	Unit Price	CO Qty	Comment	Amount Change	
0172	1400298	0172	715-09977	EACH	8,205.000	2.000	C	Amount:$	16,410.00

Item Description: PUMP
Supplemental Description1: BOOSTER PUMPS FOR IRRIGATION
Supplemental Description2:

Total Value for Change Order 005 = $ 16,410.00

Whereas, the Standard Specifications for this contract provides for such work to be performed, the following change is recommended.
General or Standard Change Order Explanation

There was not sufficient item bid history for booster pumps on the Site Manager reports page. Therefore, a cost analysis worksheet was generated to justify the pricing submitted. The contractor's pricing was in line with the cost analysis. Cost analysis worksheet is attached to this change order. The pumps were deemed necessary because the water main did to provide sufficient pressure needed for irrigation operation. This was determined by Indiana American Water summarized in the attached report. Change order was created as described on Page 134 of the contract special provisions. A contract time adjustment is not required for this change.

Change Order Explanation for Specific Line Item

****

It is the intent of the parties that this change order is full and complete compensation for the work describe above.
Notification and consent to this change order is hereby acknowledged.

Contractor: Nathan Gaskill _____ Signed By: Nathan Gaskill _____

Date: 12/29/18 _____

****

NOTE: Other required State and FHWA signatures will be obtained electronically through the SiteManager system.

APPROVED FOR LOCAL PUBLIC AGENCY

	MAYOR	MARCH 4, 2019
(SIGNATURE)	(TITLE)	(DATE)
	MEMBER, BPW&S	MARCH 4, 2019
(SIGNATURE)	(TITLE)	(DATE)
	MEMBER, BPW&S	MARCH 4, 2019
(SIGNATURE)	(TITLE)	(DATE)

SUBMITTED FOR CONSIDERATION

PE/S

APPROVED FOR INDIANA DEPARTMENT OF TRANSPORTATION

Approval Level	Name of Approver	Date	Status

Change Order Worksheet

(To be included as part of Change Order Document)

Change Order # 5

Contract # R -37572 PE/PS Chris Dowty Project Manager Whitney Carlin

Program Budget Manager Robin Bolte Approval Authority Area Engineer

Date Contractor issued Written Notice of Changed Condition	3/24/2018
Date Area Engineer was notified of Changed Condition	4/19/2018
Date Project Manager was notified of Changed Condition	
Date LPA was notified of Changed Condition	4/19/2018
Date FHWA was notified of Changed Condition (if Federal Oversight job)	
Date Contractor was asked to provide pricing	4/19/2018
Date Contractor returned pricing for review	10/18/2018
Will work be done before approved Change Order Yes No	No
If Yes	
Date AE gave Documented Verbal Approval	
Date LPA gave Documemted Verbal Approval	
Date FHWA gave Documented Verbal Approval (if Federal Oversight job)	
Date Work Order Document was issued to Contractor	
Is there a scope change? Yes No	
If Yes	
Date that Project Manager gave Documented Verbal Approval	
Date that **Draft** Change Order was emailed to Project Manager for review [1]	
Date Project Manager returned his/her review [2]	
Date that **Draft** Change Order was sent to LPA for signatures (if applicable)	
Date that **Draft** Change Order was sent to FHWA for approval (if Federal Oversight)	
Date FHWA approved Change Order in SiteManager (If Federal Oversight)	

1 The PE/PS should email a copy of the Draft Change Order to the Project Manager and give them a 5 work day period to review the Change Order before it is approved.

2 If there is no response, use the date at the end of the 5 work day period.

** Contract Time should be addressed by one of the three statements detailed in Construction Memo 09-15.

INDIANA DEPARTMENT OF TRANSPORTATION

Change Order Cost Analysis Worksheet

Contract Number: **R -37572** **Change Order Number:** **5**

Change Order Description: Irrigation Tie-ins Busch Landscaping (Subcontractor) Pricing

LABOR Classification Codes: L=Laborer, O=Operator, F=Foreman, C=Carpenter/Pile Driver, T=Teamster, I=Iron Worker *(Add Sub Categorization as necessary)*
Hourly Rate Codes: **ST**=Straight Time, **OT** = Overtime *(1.5*ST)*, **DT**=Double Time *(2*ST)*

Class	Quantity for Class (EA)	ST Hours	OT Hours	DT Hours	ST Hourly Rate ($)	Fringes per Hour ($)	Total Wages for Insurance Calc.	Fringe Cost	Hourly Payroll Cost
LABOR	2	2			$24.22	$15.16	$96.88	$60.64	$96.88
OPER	1	18			$36.75	$18.95	$661.50	$341.10	$661.50
SUP	1	18			$36.75	$18.95	$661.50	$341.10	$661.50
							$0.00	$0.00	$0.00
							$0.00	$0.00	$0.00
							$0.00	$0.00	$0.00
							$0.00	$0.00	$0.00
							$0.00	$0.00	$0.00
							$0.00	$0.00	$0.00
						Totals:	*$1,419.88*	*$742.84*	*$1,419.88*
						Estimated Insurance (Worker's Compensation and Liability Cost) =		**20.00%**	*$283.98*
						Estimated Tax (Federal Unemployment, State Unemployment, Federal SS) =		**11.75%**	*$166.84*
								Total Fringe Cost =	*$742.84*
								Labor Subtotal =	*$2,613.54*
								Labor Markup =	**20.00%**
								Total Estimated Labor Cost =	**$3,136.25**

MATERIAL (Consider Some Overrun in Material Quantities)

Material Description	Unit of Measure	Material Quantity	Material Unit Cost ($)	Material Cost
Munro Commander Pro Pump	EA	2	$3,304.00	$6,608.00
Cabinet	EA	2	$646.24	$1,292.48
Pedestal	EA	2	$768.32	$1,536.64
Misc. Supplies for Irrigation	EA	1	$846.72	$846.72
				$0.00
				$0.00
				$0.00
				$0.00
				$0.00
				$0.00
				$0.00
				$0.00
				$0.00
				$0.00
				$0.00
				$0.00
				$0.00
			Materials Subtotal =	*$10,283.84*
			Materials Markups =	**12.00%** *$1,234.06*
			Total Estimated Material Cost =	**$11,517.90**

EQUIPMENT (Utilize the current Rental Rate Blue Book as published by Equipment Watch©) *(FHWA Hourly Rate = FHWA Monthly Rate / 176)*

https://app.equipmentwatch.com/search *(must be connected to the network)*

Equipment Description (include Make, Model, Year, Attachments)	Equipment Hours	Equipment Hourly Rate ($)	Equipment Cost
Excavator	18	$36.23	$652.14
Dodge Truck	2	$35.76	$71.52
Ford Truck	2	$35.76	$71.52
Trailer	8	$11.13	$89.04
			$0.00
			$0.00
		Equipment Subtotal =	*$884.22*
		Equipment Markups =	**12.00%** *$106.11*
		Total Estimated Equipment Cost =	**$990.33**

Total Estimated Labor, Material and Equipment Cost = $15,644.48

Contract Number: **R -37572** Change Order Number: **5**

Change Order Description: Booster Pumps

SUBCONTRACTING

Total Dollars Subcontracted Work	10% of the first $3000.00	7% of the Remaining Amount	Total Subcontracting Cost
$15,101.77	$300.00	$847.12	*$16,248.89*
Total Estimated Labor, Material and Equipment Cost *(from page 1)* =			*$0.00*
		Bond Cost = **2.00%**	*$324.98*
		Total Estimated Change Order Cost =	**$16,573.87**

Prepared by: Chris Dowty

Date: 10/19/2018

CHANGE ORDER REQUEST FORM

CONTRACT NO.	R-37572	DATE OF SUBMISSION	October 18, 2018

PROJECT DESCRIPTION *(route / intersection / bridge no(s).)*	King St, Franklin, In
CHANGE ORDER REQUEST SUMMARY DESCRIPTION	Partial Irrigation Package
PROPOSED SOLUTION SUMMARY	Attached pricing

NOTE: Upon request from Engineer, enter detailed description on page 2.

ONSET DATE OF CHANGE	May 14, 2018	CHANGE ORDER TYPE	Errors & Omissions

PROPOSED COST AND TIME ADJUSTMENT

COST **COST INCREASE / (DECREASE):** $ **16,410.00**

The cost adjustment shall include lump sum and estimated totaled unit-priced item costs. Attach a separate sheet of unit price items including item description, unit of measurement, estimated quantity and unit price.

CHECK APPROPRIATE BOXES PER APPROPRIATE BASIS OF COST CHANGE:

☐ 109.03 Altered Quantities ☒ 109.05(a) Agreed Price ☐ 109.05(b) Force Account ☐ 109.05.02 Delay Costs

PROPOSED COST CHANGE INCLUDES: ☐ Labor ☐ Material ☐ Equipment ☐ Lease Agreement ☒ Subcontractor

TIME ADJUSTMENT **INCREASE / (DECREASE):** **(work days)** Click here to enter text.

CHECK APPROPRIATE BOXES PER APPROPRIATE BASIS OF TIME CHANGE:

☒ 108.08(a) Excusable, Non-Compensable ☐ 108.08(b) Excusable, Compensable

*NOTE: If **Compensable**, attach details based on 109.05.2(a) Allowable Delay Costs.*

SUPPLEMENTAL INFORMATION

Additional information may be entered by the contractor.

CHANGE ORDER ORIGINATION:	☒ INDOT / LPA ☐ Contractor
DOCUMENTS AFFECTED:	
☐ **Contract Specifications (ref. doc name/no.)**	Click here to enter text.
☒ **Contract Plans (ref. doc name/no.)**	Plans show incorrect service points and low water pressure
CHANGE ORDER AFFECTS DBE PARTICIPATION:	☒ yes ☐ no (if yes, attach details)

CHANGE ORDER REQUEST FORM

CONTRACT NO. R-37572

UPON WRITTEN REQUEST FROM THE ENGINEER, PROVIDE ADDITIONAL DETAIL

DATE RECEIVED REQUEST FOR ADDITIONAL DETAIL	[Select Date]	**SUBMITTAL DATE OF ADDITIONAL DETAIL**	[Select Date]

DETAILED DESCRIPTION / JUSTIFICATION:

(Include location(s), actions of contractor, owner, and other stakeholders, key events and related cause(s), discoveries, discussions, meetings, and effect on the contract if no action is taken. Also include references to key documents attached or available to support this change order request.)

Click here to enter text.

PROPOSED SOLUTION – ADDITIONAL DETAILS:

(Include proposed scope of work, means & methods, materials, equipment, utility relocation required, subcontracted scope and the effect on the contract schedule. Also include references to attached documents including, but not limited to, sketches, calculations, photos, material information, and submittals and meeting minutes.)

Click here to enter text.

SIGNATURES

Contractor:

Name: (print) Nathan Gephart

(signature) _____ Date: 10/18/18

Project Engineer/Supervisor: *(signature is to acknowledge receipt of the document and does not signify agreement of the change order)*

Name: (print) Chris Dawley

(signature) _____ Date: 10/18/18

NOTE: The Contractor and PE/S should retain a signed copy of this document for record.

CONTRACT NO. Click here to enter text.

ATTACHMENT: UNIT PRICE ITEMS DETAIL

Attach or paste a unit price item detail.

Milestone

Chris Dowty
HWC Engineering
135N Pennsylvania St, Suite 2800
Indianapolis, In 46204

Thursday, October 18, 2018

RE: R-37572 REQUEST FOR PARTIAL PUMP PACKAGE PRICING

Chris-
Attached is your request for the partial irrigation pump pricing only. The attached pricing will not make the irrigation system functional as stated in our progress meeting today. All other items to make the irrigation system functional, will be continue to be a part of the INDOT claim process that has already been started.

Irrigation Pump System, 2 each. $8,205.00.

Nathan Gaskill
Project Manager
Milestone Contractors, L.P.

Milestone Contractors, LP
3410 South 650 East Columbus, IN 812/579-5248 Fax 812/579-6703

Milestone Contractors, L.P.
Extra Work Pricing Summary

Project No:	R-37572 King St Franklin, In		
Date Requested:	10/15/2018	***Date Submitted:***	10/18/2018
Description of Work:	Irrigation Changes Busch Landscaping Only, Partial Pump Package		
Reason for Extra Work:	Bid Documents Error		
Has Work Already Been Completed?	no	***When:***	THROUGH job duration
MCLP Project No.	183001	***Cost Activity Code:***	95000

All calculations and markups represent the application of INDOT Standard Specification 109.05 Extra Work and Force Account Work

Item:	Irrigation Changes Busch Landscaping Only, Partial Pump Package			***Quantity:***	2	***Units***	EA	
Labor:	***Cost =***	$ -	***Markup %***	20%	$ -	***Total***	$	-
Equipment:	***Cost =***	$ -	***Markup %***	12%	$ -	***Total***	$	-
Materials:	***Cost =***		***Markup %***	12%		***Total***	$	-
Subcontract:	***Cost =***	$ 15,101.77	***Markup %***	10%	$ 300.00			
			Markup %	7%	$ 847.12	***Total***	$	16,248.89
Supplies	***Cost =***	$ -	***Markup %***	12%	$ -			
Trucking:	***Cost =***	$ -	***Markup %***	12%	$ -			
		$ 15,101.77			$ 1,147.12		$	16,248.89
Insurance & Bond	***Cost =***	$ 146.24	***Markup %***	10%	$ 14.62	***Total***	$	160.86
Total							$	16,409.76
Unit Price							$	8,204.88
						Bid Price =	$	8,205.00
Extra Days Requested								-

Item:				***Quantity:***		***Units***		
Labor:	***Cost =***	$ -	***Markup %***	20%	$ -	***Total***	$	-
Equipment:	***Cost =***	$ -	***Markup %***	12%	$ -	***Total***	$	-
Materials:	***Cost =***	$ -	***Markup %***	12%	$ -	***Total***	$	-
Subcontractor:	***Cost =***		***Markup %***	10%	$ -			
			Markup %	7%	$ -	***Total***	$	-
Trucking:	***Cost =***	$ -	***Markup %***	10%	$ -			
			Markup %	7%	$ -	***Total***	$	-
		$ -			$ -		$	-
Insurance & Bond	***Cost =***	$ -	***Markup %***	10%	$ -	***Total***	$	-
Total							$	-
Unit Price								#DIV/0!
						Bid Price =	$	-
Extra Days Requested								-

Item:				***Quantity:***		***Units***		
				ton				
Labor:	***Cost =***	$ -	***Markup %***	20%	$ -	***Total***	$	-
Equipment:	***Cost =***	$ -	***Markup %***	12%	$ -	***Total***	$	-
Materials:	***Cost =***	$ -	***Markup %***	12%	$ -	***Total***	$	-
Subcontractor:	***Cost =***	$ -	***Markup %***	10%	$ -			
			Markup %	7%	$ -	***Total***	$	-
Trucking:	***Cost =***	$ -	***Markup %***	10%	$ -			
			Markup %	7%	$ -	***Total***	$	-
		$ -			$ -		$	-
Insurance & Bond	***Cost =***	$ -	***Markup %***	10%	$ -	***Total***	$	-
Total							$	-
Unit Price								#VALUE!
						Bid Price =	$	-
Extra Days Requested								-

Busch Landscaping, LLC (DBE & WBE Certified)

5703 N. US 421
Osgood, IN 47037

Estimate

Date	Estimate #
10/16/2018	18140 37572

Name / Address
Milestone Contractors, L.P. 3410 S. 650 E. Columbus, IN 47203

Job Name/Location
R-37572-A Franklin

Description	Qty	Cost	Total
R-37572-A Franklin/Johnson Co.			
Revised 10.16.18			
Materials increased 12% over cost per INDOT Specs 109.05 (b):			
Munro Commander Pro pump	2	3,304.00	6,608.00
Cabinet	2	646.24	1,292.48
Pedestal	2	768.32	1,536.64
Misc. supplies for irrigation	1	846.72	846.72
Labor increased 20% over cost per INDOT Specs 109.05 (b):			
Labor: 2 Laborers--load equip., materials & supplies; perform safety check; fuel trucks and attach trailers; unload and put away equip./dispose of debris at end of day--$24.22 + $15.16 = $39.38 * 120% = $47.26	4	47.26	189.04
Operator/irrigation installer--$36.75 + $18.95 = $55.70 *120% = $66.84	18	66.84	1,203.12
Project manager--$36.75 + $18.95 = $55.70 *120% = $66.84	18	66.84	1,203.12
Overhead: Estimator/Admin. Ass't.--preparing estimates and paperwork; ordering materials; preparing payroll and state and federal payroll forms; interest for borrowed money while waiting for INDOT payment; office equipment, includes 20% increase to payroll & 12% on other items	0.5	1,262.12	631.06
Payroll taxes include 20% increase over costs per INDOT Specs 109.05 (b):			
Payroll taxes: Unempl. state rate (7.474%)	2,123.38	0.08969	190.45

Estimate is valid for 30 days.

Subtotal	
Sales Tax (7.0%)	
Total	

Phone #	Fax #	E-mail
812.498.5800 (Cell)	812.852.5920	mabusch@etczone.com

Busch Landscaping, LLC (DBE & WBE Certified)

5703 N. US 421
Osgood, IN 47037

Estimate

Date	Estimate #
10/16/2018	18140 37572

Name / Address
Milestone Contractors, L.P. 3410 S. 650 E. Columbus, IN 47203

Job Name/Location
R-37572-A Franklin

Description	Qty	Cost	Total
Payroll taxes: Workman's comp. insurance ($6.79 per $100 of payroll)	21.2334	8.15	173.05
Payroll taxes: Federal unemployment. FUTA 1.5%	2,123.38	0.018	38.22
Payroll taxes: Social security 7.65%	2,123.38	0.0918	194.93
Equipment includes 12% increase per INDOT Specs 109.05 (b):			
Excavator + insurance (hr.)	18	36.23	652.14
Hand-operated digger + insurance (hr.)	8	4.92	39.36
Dodge truck + insurance (hr.)	2	35.76	71.52
Ford truck + insurance (hr.)	2	35.76	71.52
2 Trailers + insurance (hr.)	4	11.13	44.52
Mileage to/from work site (2 trucks with 2 trailers) 120 miles round trip--Osgood/Franklin at $.545/mile	120	0.545	65.40
General liability & personal property insurance--includes 10% increase per INDOT Specs 109.05 (b):	12.62	4.00	50.48

Estimate is valid for 30 days.

Subtotal	$15,101.77
Sales Tax (7.0%)	$0.00
Total	$15,101.77

Phone #	Fax #	E-mail
812.498.5800 (Cell)	812.852.5920	mabusch@etczone.com

D. Booster Pump (pressure unknown): The existing water pressure was not available at the time of design development. The Contractor is required to determine the existing pressure at the irrigation point of connection prior to installation of the system. Report any deviation between the existing pressure and the required pressure in writing to the engineer. If the required **75** psi minimum is not available at the point of connection than a booster pump, protective cover and pump start relay shall be required and submitted as a change order to the Engineer's authorized representative. The irrigation consultant shall determine the appropriate manufacturers and models such as: Munro: "Complete PRO-II" (model # CP200B for single-phase power, or #CP200B3 for three-phase power) or equivalent models by Rain Bird or Watertronics. The booster pump shall be installed per manufacturer's specifications on a concrete pad. The Contractor shall have the exact power and voltage verified for coordination with the pump prior to purchase and installation. A Munro StartBox pump start relay shall activate and control the pump. The booster pump shall be winterized and stored in an indoor facility during the off-season. Submit a change order to the engineer for approval if it is determined that a booster pump is required. If needed, providing electrical service and connections will be required by the irrigation contractor, and their electrical subcontractor, as a part of the irrigation scope of work.

E. Main Line Piping: All main line piping shall be Cl 200 PVC SDR 21 standard weight as manufactured by Cresline or approved equal. All mainline 1" - 2 1/2" shall be solvent welded. All mainline 3" and larger shall be PVC gasketed type. Pipe shall carry the N.S.F. seal of approval and meet the following specifications: ASTM 1120/1220, C.S. 256-63, or latest revisions. Size as indicated on drawings.

F. Lateral Line Piping: All lateral lines downstream of the valves shall be CL 200 PVC SDR 21 for 1" pipe, Cl 200 PVC SDR 21 for 1 1/4" and larger pipe, standard weight as manufactured by Cresline or approved equal. Pipe shall carry the N.S.F. seal of approval and meet the following specifications: ASTM 1120/1220, C.S. 256-63, SDR 21 or latest revision. Size as indicated on drawings.

G. Pipe Fittings: All PVC fittings 1" - 3" shall be solvent weld schedule 40 standard weight. Attachment shall be made with both a primer and a solvent cement as approved by the manufacturer. Glue type saddles may be used so long as they are 3/4 round type units which grip the pipe. Saddles are to be bored or cut with appropriate equipment and holes are not to be burned into the pipe. All fittings 4" and larger shall be ductile iron with PVC gasket and hub configuration and retaining rings as manufactured by Harco or Leemco. Provide Harco or Leemco joint restraints or concrete thrust blocks on all 3" and larger fittings. Install per manufactures recommendations.

INDIANA AMERICAN WATER

FLOW TEST DATA SHEET

DATE: 6/7/2018 TIME: 2:30 pm

TEST REQUESTED BY: Adam Boone

TEST CONDUCTED BY: Miguel and Chris

RESIDUAL HYDRANT - POINT A:

HYDRANT NO: HFR-287 SHEET:

LOCATION: corner of milford and longest drive

STATIC PRESSURE BEFORE FLOW: 58 RESIDUAL PRESSURE: 47

STATIC PRESSURE TWO MINUTES AFTER FLOW: 62

FLOW HYDRANT - POINT B:

HYDRANT NO. HFR-323 SHEET:

LOCATION: corner of hole in one and longest drive

STATIC PRESSURE BEFORE FLOW: 58 SIZE OF OPENING: 2.5

DISCHARGE COEFFICIENT*: .09 PITOT READING: 42

FLOW: 1209 MINUTES FLOWED: 2

STATIC PRESSURE TWO MINUTES AFTER FLOW: 62

FLOW HYDRANT - POINT C:

HYDRANT NO. SHEET:

LOCATION:

STATIC PRESSURE BEFORE FLOW: RESIDUAL PRESSURE:

DISCHARGE COEFFICIENT*: PITOT READING:

FLOW: MINUTES FLOWED:

STATIC PRESSURE TWO MINUTES AFTER FLOW:

FLOW HYDRANT - POINT D:

HYDRANT NO. SHEET:

LOCATION:

STATIC PRESSURE BEFORE FLOW: RESIDUAL PRESSURE:

DISCHARGE COEFFICIENT*: PITOT READING:

FLOW: MINUTES FLOWED:

STATIC PRESSURE TWO MINUTES AFTER FLOW:

RESULTS:
FLOW AT 20 PSI:

*DISCHARGE COEFFICIENT .09 - SMOOTH/ROUND .08 - SQUARE SHARP .07 - SQUARE/PROJECTING