



**IMU BOARD OF TRUSTEES OF THE ELECTRIC,
WATER AND COMMUNICATIONS UTILITIES**

February 23, 2026

5:30 PM

IMU Boardroom

Agenda

- 1. Call to Order**
- 2. Roll Call**
- 3. Public Comment**
- 4. Consent Agenda**
 - A. Approval of Claims
 - B. Approval of Minutes of the prior meetings
 - C. Authorization for Warren Water District to serve a customer within their territory upon proper notice to IMU since the customer is within 2 miles of the IMU territory, located at 13134 McGregor St.
 - D. December 2025 Finance Report
 - E. Authorization for Warren Water District to serve a customer within their territory upon proper notice to IMU since the customer is within 2 miles of the IMU territory, located at 12095 Nevada Street .
- 5. Electric Utility Action Items**
 - A. Public hearing regarding the plans, specifications, form of contract and estimate of cost for East Iowa Circuit Switcher Replacement Project- Installation.
 - B. Resolution approving the plans, specifications, form of contract and estimate of cost for East Iowa Circuit Switcher Replacement Project- Installation.
 - C. Resolution awarding and approving a contract to Harold K. Scholz Co. for the East Iowa Circuit Switcher Replacement Project- Installation.
- 6. Electric Utility Informational Items**
- 7. Water Utility Action Items**
 - A. Public hearing regarding the plans, specifications, form of contract and estimate of cost for N. 6th Street Place Water Main Improvements Project.
 - B. Resolution approving the plans, specifications, form of contract and estimate of cost for the N. 6th Street Place Water Main Improvements Project
 - C. Resolution awarding and approving a contract to Busy Bee Construction, LLC for the N. 6th Street Place Water Main Improvements Project

- 8. Water Utility Informational Items**
- 9. Communications Utility Action Items**
 - A. Resolution Approving IPTV 28E Draft Amendment - Agreement Termination
- 10. Communications Utility Informational Items**
- 11. Combined Electric, Water and Communications Action Items**
- 12. Combined Electric, Water and Communications Informational Items**
 - A. FY26-27 Budget Presentation and Discussion
- 13. Other Business**
- 14. Closed Session: Enter into closed session in accordance with Iowa Code Section 388.9(1) to discuss marketing and pricing strategies and proprietary information of the telecommunications division whose competitive position will be harmed by public disclosure that is not required of potential or actual competitors and no public purpose is served by such disclosure.**
- 15. Adjourn**

MEMORANDUM

To: IMU Board of Trustees of the Electric, Water and Communications Utilities
From:
Date: February 23, 2026
Subject: Approval of Claims

Recommendation:

Attachments:

1. 012726 AP Check Preview
2. 021026 AP Check Preview
3. 022426 AP Check Preview

AP Check Preview

Date Range: All Dates

Indianola Municipal Utilities

Wednesday, January 21, 2026
3:05:40 PM

Vendor	Due Date	Notes	Terms	Bill Total	Discount	Interest	Amount Due	Pavment	Invoice Number	Bill Number	Payment Type
Account To Be Paid From 0000-10120-999											
ACCO UNLIMITED CORP. - VEND-2810 - EFT File											
	1/14/2026	ACCO Liquid Chlorinating Solution	Open Terms	2,489.52	0.00	0.00	2,489.52	2,489.52	0260008-IN	BL-17922	EFT File
							2,489.52	2,489.52			
AGRILAND FS INC - VEND-48228 - EFT File											
	1/1/2026	1225 Fuel Distribution	Open Terms	3,464.98	0.00	0.00	3,464.98	3,464.98	7156286-1225	BL-17924	EFT File
							3,464.98	3,464.98			
Bobs Custom Trophies - VEND-1153 - Check											
	2/19/2026	Name Plate	Net 30	11.77	0.00	15.00	11.77	11.77	42543	BL-17943	Check
							11.77	11.77			
Buresh Home Solutions, Inc - VEND-1499 - Check											
	2/7/2026	Building Maintenance	Net 30	7,503.14	0.00	15.00	7,503.14	7,503.14	ADJ3260	BL-17925	Check
							7,503.14	7,503.14			
Calix Inc - VEND-1028 - EFT File											
	2/7/2026	0126 Calix Cloud Foundation	Net 30	748.57	0.00	15.00	748.57	748.57	7064906	BL-17926	EFT File
	2/7/2026	0126 Calix Service Cloud	Net 30	3,234.89	0.00	15.00	3,234.89	3,234.89	7064200	BL-17927	EFT File
	2/7/2026	0126 Calix Operations Cloud	Net 30	3,558.43	0.00	15.00	3,558.43	3,558.43	7064199	BL-17928	EFT File
							7,541.89	7,541.89			
Cedar Falls Utilities - VEND-1045 - EFT File											
	2/4/2026	1225 Transit & Transport	Net 30	9,645.00	0.00	15.00	9,645.00	9,645.00	Dec25	BL-17930	EFT File
	2/12/2026	Shared IPTV Costs Jun-Dec 2025	Net 30	51,844.23	0.00	15.00	51,844.23	51,844.23	94536	BL-17929	EFT File
							61,489.23	61,489.23			
City Of Indianola - VEND-1008 - BL-17932											
	1/30/2026	Q4-2025 Franchise Fees	Net 30	15,382.25	0.00	15.00	15,382.25	15,382.25	Q4-2025	BL-17932	EFT File
							15,382.25	15,382.25			
Cologix, Inc - VEND-1440 - EFT File											
	12/31/2025	Cross Connect & Shared Rack	Net 30	1,650.00	0.00	15.00	1,650.00	1,650.00	1762778	BL-17933	EFT File
							1,650.00	1,650.00			
Delta Dental Vision Of Iowa - VEND-1481 - EFT File											
	1/31/2026	0126 Vision	Net 30	450.14	0.00	15.00	450.14	450.14	202601	BL-17934	EFT File

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							450.14	450.14			
DES MOINES WATER WORKS - VEND-10870 - Check											
1/1/2026	Leak Detection	Open Terms	400.00	0.00	0.00	400.00	400.00	000306	BL-17935	Check	
							400.00	400.00			
DICKINSON LAW - VEND-101709 - EFT File											
1/9/2026	1225 Legal Services	Open Terms	574.50	0.00	0.00	574.50	574.50	1174054	BL-17936	EFT File	
							574.50	574.50			
Dust Pros Janitorial - VEND-1011 - EFT File											
2/14/2026	0126 Cleaning - Util Svcs	Net 30	749.00	0.00	15.00	749.00	749.00	3515	BL-17937	EFT File	
2/14/2026	Cleaning Supplies - EL	Net 30	171.20	0.00	15.00	171.20	171.20	3513	BL-17938	EFT File	
2/14/2026	0126 Cleaning - EL	Net 30	856.00	0.00	15.00	856.00	856.00	3512	BL-17939	EFT File	
2/14/2026	0126 Cleaning - Fiber	Net 30	856.00	0.00	15.00	856.00	856.00	3514	BL-17942	EFT File	
							2,632.20	2,632.20			
Finley Law Firm, P.C. - VEND-1439 - EFT File											
2/11/2026	1225 Legal Services	Net 30	2,550.00	0.00	15.00	2,550.00	2,550.00	525604	BL-17940	EFT File	
							2,550.00	2,550.00			
Gradient9 - VEND-1392 - EFT File											
2/20/2026	0126 Monthly Newsletter/Website	Net 30	2,310.00	0.00	15.00	2,310.00	2,310.00	INV-5635	BL-17962	EFT File	
							2,310.00	2,310.00			
GRAYMONT WESTERN LIME INC - VEND-101387 - EFT File											
1/13/2026	High Calcium Quicklime	Open Terms	6,567.20	0.00	0.00	6,567.20	6,567.20	14-209978 RI	BL-17941	EFT File	
							6,567.20	6,567.20			
Hearst Television Inc - VEND-1131 - EFT File											
1/30/2026	1225 KCCI	Net 30	7,790.12	0.00	15.00	7,790.12	7,790.12	627156	BL-17944	EFT File	
							7,790.12	7,790.12			
Helix Pest Solutions LLC - VEND-1445 - EFT File											
2/12/2026	Pest Control - Util Svcs	Net 30	35.00	0.00	15.00	35.00	35.00	12053	BL-17945	EFT File	
							35.00	35.00			
HPI, LLC - VEND-1409 - EFT File											
2/5/2026	Turbine 8 - Testing & Inspections	Net 30	19,729.84	0.00	15.00	19,729.84	19,729.84	25-7113-06	BL-17946	EFT File	

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							19,729.84	19,729.84			
IMU - VEND-8629 - Check											
	1/2/2026	Utilities - WA	Open Terms	19,944.64	0.00	0.00	19,944.64	19,944.64	10528443	BL-17947	Check
	1/2/2026	Utilities - Util Svcs	Open Terms	203.54	0.00	0.00	203.54	203.54	10523722	BL-17948	Check
	1/2/2026	Utilities - Fiber	Open Terms	1,404.61	0.00	0.00	1,404.61	1,404.61	10527842	BL-17949	Check
	1/2/2026	Utilities - EL	Open Terms	2,044.57	0.00	0.00	2,044.57	2,044.57	10522337	BL-17950	Check
							23,597.36	23,597.36			
Independent Advocate - VEND-1136 - EFT File											
	2/5/2026	BOT Minutes 12.19.25 & 12.29.25	Net 30	43.47	0.00	15.00	43.47	43.47	7457	BL-17951	EFT File
							43.47	43.47			
Indianola Chamber Of Commerce - VEND-1073 - Check											
	1/31/2026	Brand Builder Membership 2026	Net 30	800.00	0.00	15.00	800.00	800.00	8162	BL-17952	Check
							800.00	800.00			
Indianola Community Schools - VEND-24718 - Check											
	1/14/2026	Yearbook Sponsorship	Open Terms	250.00	0.00	0.00	250.00	250.00	2026	BL-17953	Check
							250.00	250.00			
Infomax Office Systems Inc - VEND-1013 - Check											
	2/12/2026	0126 Copier Contract	Net 30	736.70	0.00	15.00	736.70	736.70	41029661	BL-17954	Check
							736.70	736.70			
Internal Revenue Service - VEND-1307 - Online Payments											
	2/15/2026	941 Income Tax Payable - 011626 Payroll	Net 30	33,829.66	0.00	15.00	33,829.66	33,829.66	011626 Payroll	BL-17956	Online Payments
							33,829.66	33,829.66			
Iowa Association Of Municipal Utilities - VEND-1014 - EFT File											
	2/12/2026	Apprenticeship Fees - Collier & Buehler	Net 30	2,600.00	0.00	15.00	2,600.00	2,600.00	34136	BL-17955	EFT File
							2,600.00	2,600.00			
Iowa Department Of Human Services - VEND-1310 - Online Payments											
	2/15/2026	Garnishment Payable - 011626 Payroll	Net 30	653.99	0.00	15.00	653.99	653.99	011626 Payroll	BL-17957	Online Payments
							653.99	653.99			
Iowa Department Of Revenue - VEND-1117 - Online Payments											
	1/30/2026	Dec25 Use Tax	Net 30	792.20	0.00	15.00	792.20	792.20	Use Tax 1225	BL-17959	Online Payments

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3:05:40 PM

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1/31/2026	Sales Tax Billed 1.1.26	Net 30	47,918.54	0.00	15.00	47,918.54	47,918.54	1.1.26 Sales Tax	BL-17960	Online Payments
2/15/2026	IA Income Tax Payable - 011626 Payroll	Net 30	3,586.17	0.00	15.00	3,586.17	3,586.17	011626 Payroll	BL-17958	Online Payments
						52,296.91	52,296.91			
Irby - VEND-1259 - EFT File										
2/11/2026	Pole ID Marker Brackets	Net 30	678.11	0.00	15.00	678.11	678.11	S014457419.001	BL-17965	EFT File
2/11/2026	Pole ID Numbers & Letters	Net 30	1,166.30	0.00	15.00	1,166.30	1,166.30	S014457419.003	BL-17966	EFT File
2/13/2026	Eye Nuts	Net 30	308.96	0.00	15.00	308.96	308.96	S014479180.001	BL-17964	EFT File
2/14/2026	PT's	Net 30	1,043.25	0.00	15.00	1,043.25	1,043.25	S014297410.001	BL-17963	EFT File
						3,196.62	3,196.62			
ISolved - VEND-1363 - Online Payments										
2/15/2026	FSA Payable - 011626 Payroll	Net 30	419.23	0.00	15.00	419.23	419.23	011626 Payroll	BL-17967	Online Payments
						419.23	419.23			
Michelle Sheraden - VEND-1501 - EFT File										
2/11/2026	0126 Half Month Mobile Device Allowance	Net 30	37.50	0.00	15.00	37.50	37.50	Jan26	BL-17968	EFT File
						37.50	37.50			
Microbac Laboratories Inc - VEND-1421 - EFT File										
2/13/2026	Nitrite Sample	Net 30	42.50	0.00	15.00	42.50	42.50	NT2600229	BL-17969	EFT File
						42.50	42.50			
Mission Square - VEND-1303 - Online Payments										
2/15/2026	457 Payable - 011626 Payroll	Net 30	7,267.76	0.00	15.00	7,267.76	7,267.76	011626 Payroll	BL-17970	Online Payments
						7,267.76	7,267.76			
Morris Enterprises Inc - VEND-1494 - Check										
2/11/2026	E 3rd Ave Main Project Pay App 3-Partial	Net 30	3,928.53	0.00	15.00	3,928.53	3,928.53	Jan 2026	BL-17971	Check
						3,928.53	3,928.53			
MUNICIPAL ENERGY AGENCY OF NEBRASKA - VEND-35805 - EFT File										
1/30/2026	Purchased Power - Dec25	Net 30	813,052.13	0.00	15.00	813,052.13	813,052.13	310725	BL-17972	EFT File
						813,052.13	813,052.13			
MUNICIPAL SUPPLY INC - VEND-35810 - Check										
1/13/2026	6x30 Repair Clamp	Open Terms	485.72	0.00	0.00	485.72	485.72	0965359-IN	BL-17974	Check
1/16/2026	6x12 Repair Clamp	Open Terms	198.00	0.00	0.00	198.00	198.00	0965682-IN	BL-17973	Check

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3:05:40 PM

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							683.72	683.72			
Mutual Of Omaha - VEND-1107 - Check											
	1/31/2026	0126 Premiums	Net 30	6,441.31	0.00	15.00	6,441.31	6,441.31	1995688447	BL-17975	Check
							6,441.31	6,441.31			
National Cable Television Cooperative, Inc. - VEND-1095 - EFT File											
	1/22/2026	MICRO BATTERY BACKUP - UPS	Net 30	3,100.26	0.00	15.00	3,100.26	3,100.26	INV-97746	BL-17994	EFT File
							3,100.26	3,100.26			
NetElastic Systems, Inc - VEND-1354 - EFT File											
	2/13/2026	Software and Support Updates - 3 year	Net 30	4,983.75	0.00	15.00	4,983.75	4,983.75	10800	BL-17976	EFT File
							4,983.75	4,983.75			
Norwalk Ready Mix Concrete, Inc. - VEND-1119 - Check											
	2/4/2026	Concrete Pour Back	Net 30	1,425.00	0.00	15.00	1,425.00	1,425.00	380748	BL-17977	Check
							1,425.00	1,425.00			
Power & Tel - VEND-1037 - EFT File											
	2/4/2026	FIBER - 2 CT FLT TONE DROP	Net 30	2,678.25	0.00	15.00	2,678.25	2,678.25	8230439-00	BL-17978	EFT File
	2/7/2026	Port Mst various size	Net 30	7,750.69	0.00	15.00	7,750.69	7,750.69	8179561-00	BL-17979	EFT File
							10,428.94	10,428.94			
Prolmage Sign & Lighting - VEND-1150 - Check											
	2/14/2026	Electric Dept Graphics for Vehicles	Net 30	112.35	0.00	15.00	112.35	112.35	6468	BL-17980	Check
							112.35	112.35			
SE Municipal Iowa, LLC - VEND-1500 - EFT File											
	1/30/2026	Purchased Solar Dec25	Net 30	751.38	0.00	15.00	751.38	751.38	INV446	BL-17981	EFT File
							751.38	751.38			
SKARSHAUG TESTING LABORATORY INC - VEND-50410 - EFT File											
	1/8/2026	Hot Hoist Inspection and Repair	Open Terms	194.74	0.00	0.00	194.74	194.74	292057	BL-17983	EFT File
							194.74	194.74			
SOUTH CENTRAL IOWA LANDFILL - VEND-50255 - Check											
	1/17/2026	Dispose Old Pole	Open Terms	50.00	0.00	0.00	50.00	50.00	491346	BL-17984	Check
							50.00	50.00			

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	1/1/2026	Testing	Open Terms	232.50	0.00	0.00	232.50	232.50	314123	BL-17985	EFT File
							232.50	232.50			
Terry-Durin Co - VEND-1038 - EFT File											
	2/6/2026	2" Split WYE Kit	Net 30	64.20	0.00	15.00	64.20	64.20	207989-00	BL-17986	EFT File
							64.20	64.20			
United States Treasury - VEND-1138 - Online Payments											
	1/30/2026	Q4-2025 Federal Excise Tax	Net 30	1,443.85	0.00	15.00	1,443.85	1,443.85	Q4-2025	BL-17987	Online Payments
							1,443.85	1,443.85			
Van Maanen Electric, Inc - VEND-1497 - Check											
	2/11/2026	Water Treatment Facility - Standby Generator	Net 30	52,874.70	0.00	15.00	52,874.70	52,874.70	01.12.26	BL-17988	Check
							52,874.70	52,874.70			
Warren County 911 - VEND-1132 - Check											
	1/30/2026	Q4-2025 E911 Fees	Net 30	2,353.23	0.00	15.00	2,353.23	2,353.23	Q4-2025	BL-17989	Check
							2,353.23	2,353.23			
Waste Management - VEND-1086 - Check											
	2/5/2026	0126 2yd Dumpster Service-WA	Net 30	185.78	0.00	15.00	185.78	185.78	9222709-0516-4	BL-17990	Check
							185.78	185.78			
WESCO - VEND-60220 - EFT File											
	1/9/2026	Air Break Switch	Open Terms	6,417.16	0.00	0.00	6,417.16	6,417.16	829111	BL-17991	EFT File
	1/13/2026	Klein Piliars	Open Terms	95.10	0.00	0.00	95.10	95.10	833530	BL-17992	EFT File
	1/14/2026	Crossarms and Braces	Open Terms	3,243.49	0.00	0.00	3,243.49	3,243.49	835597	BL-17993	EFT File
							9,755.75	9,755.75			

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Total Payment Count:	51	Totals:	\$1,180,405.60	\$1,180,405.60
Total Check Count:	16	Check Totals:	\$101,353.59	\$101,353.59
Total EFT File Count:	29	EFT File Totals:	\$983,140.61	\$983,140.61
Total Online Payments Count:	6	Online Payments Totals:	\$95,911.40	\$95,911.40
Total Bank Draft Count:	0	Bank Draft Totals:	\$0.00	\$0.00
Total No Check Count:	0	No Check Totals:	\$0.00	\$0.00

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1:44:57 PM

Vendor	Due Date	Notes	Terms	Bill Total	Discount	Interest	Amount Due	Pavment	Invoice Number	Bill Number	Payment Type
Account To Be Paid From 0000-10120-999											
Aaron Gebhart - VEND-1486 - EFT File											
	3/3/2026	0226 Mobile Device Allowance	Net 30	75.00	0.00	15.00	75.00	75.00	Feb26	BL-18010	EFT File
							75.00	75.00			
ACCO UNLIMITED CORP. - VEND-2810 - EFT File											
	1/27/2026	ACCO Liquid Chlorinating Solution	Open Terms	2,157.20	0.00	0.00	2,157.20	2,157.20	0260253-IN	BL-18017	EFT File
							2,157.20	2,157.20			
ALTEC INDUSTRIES INC. - VEND-3755 - Check											
	1/15/2026	Bucket Truck Hydraulic Value	Open Terms	1,405.13	0.00	0.00	1,405.13	1,405.13	13397180	BL-18018	Check
							1,405.13	1,405.13			
Bally Sports Midwest - VEND-1222 - EFT File											
	3/3/2026	0126 Expanded Basic	Net 30	4,795.16	0.00	15.00	4,795.16	4,795.16	30493	BL-18034	EFT File
							4,795.16	4,795.16			
Big Ten Network - VEND-1096 - EFT File											
	3/2/2026	0126 BTN - Core Exp Basic	Net 30	2,029.90	0.00	15.00	2,029.90	2,029.90	468748	BL-18019	EFT File
							2,029.90	2,029.90			
Bobs Custom Trophies - VEND-1153 - Check											
	2/12/2026	Retirement Plaque	Net 30	80.25	0.00	15.00	80.25	80.25	42494	BL-18020	Check
							80.25	80.25			
Border States Industries Inc - VEND-1070 - EFT File											
	2/27/2026	Insulated Bushing	Net 30	6.96	0.00	15.00	6.96	6.96	931859517	BL-18023	EFT File
	3/4/2026	Square Washers	Net 30	121.98	0.00	15.00	121.98	121.98	931883059	BL-18021	EFT File
	3/4/2026	Heat Shrink	Net 30	147.01	0.00	15.00	147.01	147.01	931883064	BL-18022	EFT File
							275.95	275.95			
BRAND, JUSTIN - VEND-100310 - EFT File											
	2/2/2026	0226 Mobile Device Allowance	Open Terms	75.00	0.00	0.00	75.00	75.00	Feb26	BL-18016	EFT File
							75.00	75.00			
Casual Rags - VEND-1006 - EFT File											
	2/24/2026	Employee Life Event - WA	Net 30	37.45	0.00	15.00	37.45	37.45	241206	BL-18024	EFT File
	2/24/2026	Uniform Shirts - Admin	Net 30	35.31	0.00	15.00	35.31	35.31	241198	BL-18025	EFT File

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1:44:57 PM

Vendor	Due Date	Notes	Terms	Bill Total	Discount	Interest	Amount Due	Pavment	Invoice Number	Bill Number	Payment Type
	2/24/2026	Uniform Shirts - Admin	Net 30	154.08	0.00	15.00	154.08	154.08	241197	BL-18026	EFT File
	2/24/2026	Uniform Shirts - Admin	Net 30	167.99	0.00	15.00	167.99	167.99	241200	BL-18027	EFT File
							394.83	394.83			
Cedar Falls Utilities - VEND-1045 - EFT File											
	3/4/2026	0126 Labor & Rack Space 28E Agreement (IP	Net 30	5,970.28	0.00	15.00	5,970.28	5,970.28	94559	BL-18028	EFT File
							5,970.28	5,970.28			
Cintas Corporation - VEND-1007 - EFT File											
	2/20/2026	First Aid Supplies - Fiber	Net 30	96.81	0.00	15.00	96.81	96.81	5313937105	BL-18030	EFT File
							96.81	96.81			
City Of Indianola - VEND-1008 - BL-18102											
	3/4/2026	0226 Professional Services	Net 30	6,513.39	0.00	15.00	6,513.39	6,513.39	INV-00155	BL-18102	EFT File
							6,513.39	6,513.39			
Communication Innovators - VEND-1329 - EFT File											
	2/20/2026	Software Renewal - 5-Year 1.1.26 to 12.31.20	Net 30	1,868.00	0.00	15.00	1,868.00	1,868.00	125388	BL-18031	EFT File
							1,868.00	1,868.00			
Consortia Consulting - VEND-1009 - EFT File											
	2/25/2026	1225 Consulting	Net 30	1,200.00	0.00	15.00	1,200.00	1,200.00	28231	BL-18032	EFT File
							1,200.00	1,200.00			
DES PLANQUES, CHRIS - VEND-101766 - EFT File											
	1/29/2026	MEAN Committe and Board Meeting	Open Terms	478.77	0.00	0.00	478.77	478.77	1.28.26	BL-18029	EFT File
	2/2/2026	0226 Mobile Device Allowance	Open Terms	75.00	0.00	0.00	75.00	75.00	Feb26	BL-18014	EFT File
							553.77	553.77			
Doug Pagel - VEND-1283 - EFT File											
	3/3/2026	0226 Mobile Device Allowance	Net 30	75.00	0.00	15.00	75.00	75.00	Feb26	BL-18015	EFT File
							75.00	75.00			
Doug Shull - VEND-1105 - EFT File											
	3/3/2026	0226 Treasurer Contract	Net 30	83.34	0.00	15.00	83.34	83.34	Feb26	BL-18033	EFT File
							83.34	83.34			
Dylan Michelsen - VEND-1180 - EFT File											
	3/3/2026	0226 Mobile Device Allowance	Net 30	75.00	0.00	15.00	75.00	75.00	Feb26	BL-18009	EFT File

AP Check Preview

Date Range: All Dates

Indianola Municipal Utilities

Wednesday, February 4, 2026
1:44:57 PM

Vendor	Due Date	Notes	Terms	Bill Total	Discount	Interest	Amount Due	Pavment	Invoice Number	Bill Number	Payment Type
							75.00	75.00			
Elisha Brown - VEND-1209 - EFT File											
	3/3/2026	0226 Mobile Device Allowance	Net 30	75.00	0.00	15.00	75.00	75.00	Feb26	BL-18013	EFT File
							75.00	75.00			
FleetSide Ford, LLC - VEND-1503 - Check											
	2/9/2026	F600 Chassis	Net 30	62,969.00	0.00	15.00	62,969.00	62,969.00	12612 Purc Agree	BL-18035	Check
							62,969.00	62,969.00			
HPI, LLC - VEND-1409 - EFT File											
	2/26/2026	Turbine 8 - Rotor Electric Testing & Inspection	Net 30	9,487.50	0.00	15.00	9,487.50	9,487.50	25-7113-47	BL-18036	EFT File
							9,487.50	9,487.50			
Hy Vee Food Store - VEND-1099 - Check											
	2/9/2026	2025 Health Screenings	Net 30	37.50	0.00	15.00	37.50	37.50	250454_a	BL-18037	Check
							37.50	37.50			
ImOn Communications LLC - VEND-1072 - Check											
	3/2/2026	0126 Regulatory & Billing	Net 30	6,782.76	0.00	15.00	6,782.76	6,782.76	INV0034186	BL-18045	Check
							6,782.76	6,782.76			
IMU - VEND-8629 - Check											
	2/2/2026	Utilities - Fiber	Open Terms	1,398.08	0.00	0.00	1,398.08	1,398.08	10534632	BL-18038	Check
	2/2/2026	Utilities - Util Svcs	Open Terms	218.38	0.00	0.00	218.38	218.38	10529851	BL-18039	Check
	2/2/2026	Utilities - EL	Open Terms	2,088.94	0.00	0.00	2,088.94	2,088.94	10533858	BL-18040	Check
	2/2/2026	Utilities - WA	Open Terms	19,683.13	0.00	0.00	19,683.13	19,683.13	10535237	BL-18098	Check
							23,388.53	23,388.53			
Inception Group - VEND-1505 - Check											
	3/6/2026	Refund for payment made 2024 for electric ins	Net 30	55,442.11	0.00	15.00	55,442.11	55,442.11	INV-2161	BL-18104	Check
							55,442.11	55,442.11			
Independent Advocate - VEND-1136 - EFT File											
	2/18/2026	Resolution Setting Public Hearings	Net 30	127.89	0.00	15.00	127.89	127.89	7503	BL-18042	EFT File
	2/21/2026	BOT Meeting/Publication Report 12.23.25 & 1.	Net 30	235.62	0.00	15.00	235.62	235.62	7496	BL-18043	EFT File
	3/4/2026	Print & Digital Ad - Jan26	Net 30	500.00	0.00	15.00	500.00	500.00	7517	BL-18041	EFT File
							863.51	863.51			

AP Check Preview

Date Range: All Dates

Indianola Municipal Utilities

Wednesday, February 4, 2026
1:44:57 PM

Vendor	Due Date	Notes	Terms	Bill Total	Discount	Interest	Amount Due	Pavment	Invoice Number	Bill Number	Payment Type
Innovative Systems - VEND-1048 - EFT File											
	3/3/2026	Video Subscription Platform Fee - 2.1.26-1.31.	Net 30	30,000.00	0.00	15.00	30,000.00	30,000.00	INV-29682	BL-18044	EFT File
	3/4/2026	Feb Elation Maint Fee	Net 30	12,774.84	0.00	15.00	12,774.84	12,774.84	INV-29863	BL-18046	EFT File
							42,774.84	42,774.84			
Internal Revenue Service - VEND-1307 - Online Payments											
	3/1/2026	941 Income Tax Payable - 013026 Payroll	Net 30	37,744.26	0.00	15.00	37,744.26	37,744.26	013026 Payroll	BL-18047	Online Payments
							37,744.26	37,744.26			
Iowa Department Of Human Services - VEND-1310 - Online Payments											
	3/1/2026	Garnishment Payable - 013026 Payroll	Net 30	653.99	0.00	15.00	653.99	653.99	013026 Payroll	BL-18048	Online Payments
							653.99	653.99			
Iowa Department Of Revenue - VEND-1117 - Online Payments											
	3/1/2026	IA Income Tax Payable - 013026 Payroll	Net 30	4,047.71	0.00	15.00	4,047.71	4,047.71	013026 Payroll	BL-18049	Online Payments
							4,047.71	4,047.71			
IPERS - VEND-1309 - Online Payments											
	3/2/2026	IPERS Payable - Jan26	Net 30	66,815.06	0.00	15.00	66,815.06	66,815.06	Jan26	BL-18050	Online Payments
							66,815.06	66,815.06			
Irby - VEND-1259 - EFT File											
	2/26/2026	Post Stud	Net 30	74.47	0.00	15.00	74.47	74.47	S014491970.002	BL-18052	EFT File
	2/27/2026	Bolts - Guy Preforms - Tape - J Hooks	Net 30	1,013.83	0.00	15.00	1,013.83	1,013.83	S014491970.001	BL-18053	EFT File
							1,088.30	1,088.30			
ISolved - VEND-1363 - Online Payments											
	3/1/2026	FSA Payable - 013026 Payroll	Net 30	419.23	0.00	15.00	419.23	419.23	013026 Payroll	BL-18054	Online Payments
							419.23	419.23			
KNIA/KRLS - VEND-1090 - EFT File											
	2/24/2026	0126 :30 Spot Hometown Values	Net 30	739.44	0.00	15.00	739.44	739.44	26010510	BL-18055	EFT File
	2/24/2026	0126 Sports Stream Spot	Net 30	65.00	0.00	15.00	65.00	65.00	26010511	BL-18056	EFT File
							804.44	804.44			
Kurt Gocken - VEND-1023 - EFT File											
	3/3/2026	0226 Mobile Device Allowance	Net 30	75.00	0.00	15.00	75.00	75.00	Feb26	BL-18006	EFT File
							75.00	75.00			

AP Check Preview

Date Range: All Dates

Indianola Municipal Utilities

Wednesday, February 4, 2026
1:44:57 PM

Vendor	Due Date	Notes	Terms	Bill Total	Discount	Interest	Amount Due	Pavment	Invoice Number	Bill Number	Payment Type
Kurt Ripperger - VEND-1025 - EFT File											
	3/3/2026	0226 Mobile Device Allowance	Net 30	75.00	0.00	15.00	75.00	75.00	Feb26	BL-18007	EFT File
							75.00	75.00			
LINDE INC - VEND-6415 - EFT File											
	1/26/2026	Carbon Dioxide	Open Terms	4,628.04	0.00	0.00	4,628.04	4,628.04	54549560	BL-18058	EFT File
							4,628.04	4,628.04			
Marquee Sports Network - VEND-1165 - EFT File											
	3/2/2026	0126 Expanded Basic	Net 30	3,437.10	0.00	15.00	3,437.10	3,437.10	Jan26	BL-18059	EFT File
							3,437.10	3,437.10			
METCALF, MIKE - VEND-34230 - EFT File											
	2/2/2026	0226 Mobile Device Allowance	Open Terms	75.00	0.00	0.00	75.00	75.00	Feb26	BL-18012	EFT File
							75.00	75.00			
Michelle Sheraden - VEND-1501 - EFT File											
	3/3/2026	0226 Mobile Device Allowance	Net 30	75.00	0.00	15.00	75.00	75.00	Feb26	BL-18011	EFT File
							75.00	75.00			
Mid American Energy Co - VEND-1018 - EFT File											
	2/19/2026	Electric - 11634 R63 Hwy, W Substation	Net 30	10.00	0.00	15.00	10.00	10.00	576140044	BL-18062	EFT File
	2/20/2026	Gas - 909 E Hillcrest Ave, Generator	Net 30	14.58	0.00	15.00	14.58	14.58	576250509	BL-18060	EFT File
	2/20/2026	Gas - 210 W 2nd Ave	Net 30	107.01	0.00	15.00	107.01	107.01	576277578	BL-18061	EFT File
	2/20/2026	Gas - 111 S Buxton St	Net 30	1,625.29	0.00	15.00	1,625.29	1,625.29	576255142	BL-18063	EFT File
	2/20/2026	Gas - 1300 E Iowa Ave Bldg B	Net 30	30.76	0.00	15.00	30.76	30.76	576222228	BL-18064	EFT File
	2/20/2026	Gas - 1300 E Iowa Ave Bldg A	Net 30	386.07	0.00	15.00	386.07	386.07	576235218	BL-18065	EFT File
	2/20/2026	Gas - 110 S B St	Net 30	646.02	0.00	15.00	646.02	646.02	576254989	BL-18066	EFT File
							2,819.73	2,819.73			
Midwest Alarm Services - VEND-1116 - EFT File											
	2/7/2026	Annual Fire Alarm Inspection - 1300 E Iowa Bl	Net 30	752.17	0.00	15.00	752.17	752.17	531852	BL-18067	EFT File
	2/7/2026	Fire Alarm Monitoring - 1300 E Iowa Bldg B - A	Net 30	567.66	0.00	15.00	567.66	567.66	531853	BL-18068	EFT File
							1,319.83	1,319.83			
MILLER ELECTRIC SERVICES - VEND-34642 - Check											
	1/29/2026	NE-SE Square Project - App #3	Open Terms	23,750.00	0.00	0.00	23,750.00	23,750.00	20083	BL-18069	Check
							23,750.00	23,750.00			

AP Check Preview

Date Range: All Dates

Indianola Municipal Utilities

Wednesday, February 4, 2026
1:44:57 PM

Vendor	Due Date	Notes	Terms	Bill Total	Discount	Interest	Amount Due	Pavment	Invoice Number	Bill Number	Payment Type
Mission Square - VEND-1303 - Online Payments											
	3/1/2026	457 Payable - 013026 Payroll	Net 30	3,922.29	0.00	15.00	3,922.29	3,922.29	013026 Payroll	BL-18070	Online Payments
							3,922.29	3,922.29			
MOFFITT TRENCHING LLC - VEND-35004 - Check											
	1/24/2026	1000 Caroline Terr - Fix Water Main	Open Terms	1,237.50	0.00	0.00	1,237.50	1,237.50	193026	BL-18071	Check
							1,237.50	1,237.50			
MUNICIPAL SUPPLY INC - VEND-35810 - Check											
	1/21/2026	4x12 repair clamp	Open Terms	172.00	0.00	0.00	172.00	172.00	0965921-IN	BL-18072	Check
							172.00	172.00			
National Cable Television Cooperative, Inc. - VEND-1095 - EFT File											
	2/27/2026	0126 Cable Programming	Net 30	63,768.81	0.00	15.00	63,768.81	63,768.81	26010528	BL-18073	EFT File
							63,768.81	63,768.81			
Nexstar Broadcasting, Inc - VEND-1092 - EFT File											
	3/2/2026	0126 NewsNation	Net 30	536.20	0.00	15.00	536.20	536.20	624262	BL-18074	EFT File
	3/2/2026	0126 Nexstar - WHO	Net 30	11,999.00	0.00	15.00	11,999.00	11,999.00	623735	BL-18075	EFT File
							12,535.20	12,535.20			
Power & Tel - VEND-1037 - EFT File											
	3/2/2026	Fiber Drops	Net 30	7,701.41	0.00	15.00	7,701.41	7,701.41	8216324-00	BL-18076	EFT File
							7,701.41	7,701.41			
POWER LINE SUPPLY - VEND-103039 - EFT File											
	1/29/2026	Pole Eye Plates	Open Terms	49.05	0.00	0.00	49.05	49.05	56952363	BL-18077	EFT File
							49.05	49.05			
RESCO - VEND-47234 - EFT File											
	1/28/2026	Stud Posts - Arresters	Open Terms	524.15	0.00	0.00	524.15	524.15	3100848	BL-18079	EFT File
	1/29/2026	2 Bolt Connector	Open Terms	255.54	0.00	0.00	255.54	255.54	3100955	BL-18078	EFT File
							779.69	779.69			
SCHWEITZER ENGINEERING LABORATORIES - VEND-103053 - EFT File											
	1/31/2026	Solar Project Metering	Open Terms	1,102.84	0.00	0.00	1,102.84	1,102.84	INV-001206049	BL-18099	EFT File
							1,102.84	1,102.84			
SE Municipal Iowa, LLC - VEND-1500 - EFT File											

AP Check Preview

Date Range: All Dates

Indianola Municipal Utilities

Wednesday, February 4, 2026
1:44:57 PM

Vendor Due Date	Notes	Terms	Bill Total	Discount	Interest	Amount Due	Pavment	Invoice Number	Bill Number	Payment Type
3/5/2026	Purchased Solar - Jan26	Net 30	8,162.90	0.00	15.00	8,162.90	8,162.90	INV472	BL-18080	EFT File
						8,162.90	8,162.90			
Segra / Unite Private Networks - VEND-1054 - EFT File										
3/3/2026	Dark Fiber	Net 30	3,931.70	0.00	15.00	3,931.70	3,931.70	SI-26-005869	BL-18081	EFT File
						3,931.70	3,931.70			
SKARSHAUG TESTING LABORATORY INC - VEND-50410 - EFT File										
1/29/2026	High Voltage PPE Testing	Open Terms	811.96	0.00	0.00	811.96	811.96	292580	BL-18082	EFT File
						811.96	811.96			
Skye McBroom - VEND-1026 - EFT File										
3/3/2026	0226 Mobile Device Allowance	Net 30	75.00	0.00	15.00	75.00	75.00	Feb26	BL-18008	EFT File
						75.00	75.00			
T3 Wireless, Inc - VEND-1346 - EFT File										
3/4/2026	Infinera 2026 Support 3.11.26-3.10-27	Net 30	6,571.29	0.00	15.00	6,571.29	6,571.29	11643	BL-18083	EFT File
						6,571.29	6,571.29			
Tifco Industries - VEND-1296 - EFT File										
2/14/2026	Drill Bits	Net 30	634.90	0.00	15.00	634.90	634.90	72160926	BL-18085	EFT File
						634.90	634.90			
TRM DISPOSAL LLC - VEND-101016 - EFT File										
1/25/2026	0226 Trash/Recycle - Util Svcs	Open Terms	56.00	0.00	0.00	56.00	56.00	38957	BL-18086	EFT File
1/25/2026	0226 Recycle - Fiber/111 S Buxton	Open Terms	83.00	0.00	0.00	83.00	83.00	38958	BL-18087	EFT File
						139.00	139.00			
TrueNorth Companies LC - VEND-1100 - EFT File										
2/19/2026	Jan26 Safety Meeting	Net 30	138.47	0.00	15.00	138.47	138.47	185278	BL-18088	EFT File
						138.47	138.47			
VAN WERT INC - VEND-101069 - EFT File										
2/3/2026	(6) 2" meters and meter parts	Open Terms	8,833.86	0.00	0.00	8,833.86	8,833.86	82764	BL-18101	EFT File
						8,833.86	8,833.86			
VEENSTRA & KIMM - VEND-57600 - Check										
1/24/2026	Engineering Svcs N 6th St Place Water Main I	Open Terms	8,304.00	0.00	0.00	8,304.00	8,304.00	285116-5	BL-18089	Check

AP Check Preview

Date Range: All Dates

Indianola Municipal Utilities

Wednesday, February 4, 2026
1:44:57 PM

Vendor	Due Date	Notes	Terms	Bill Total	Discount	Interest	Amount Due	Pavment	Invoice Number	Bill Number	Payment Type
							8,304.00	8,304.00			
Viking Automatic Sprinkler - VEND-1473 - EFT File											
3/4/2026	Fire Extinguisher Inspections	Net 30	68.00	0.00	15.00	68.00	68.00	1025-F467109	BL-18090	EFT File	
							68.00	68.00			
WESCO - VEND-60220 - EFT File											
1/28/2026	FR Clothing	Open Terms	258.04	0.00	0.00	258.04	258.04	855776	BL-18093	EFT File	
1/31/2026	Secondary Peds	Open Terms	8,243.28	0.00	0.00	8,243.28	8,243.28	862020	BL-18091	EFT File	
1/31/2026	Knives for Crews	Open Terms	84.87	0.00	0.00	84.87	84.87	862019	BL-18092	EFT File	
2/26/2026	Deadend Insulators	Net 30	253.43	0.00	15.00	253.43	253.43	855777	BL-18100	EFT File	
							8,839.62	8,839.62			
Wiegert Disposal Inc - VEND-1081 - EFT File											
3/3/2026	0126 Trash - Fiber/111 S Buxton	Net 30	110.00	0.00	15.00	110.00	110.00	01.31.26	BL-18097	EFT File	
							110.00	110.00			
Total Payment Count: 65						Totals:	\$515,261.94	\$515,261.94			
Total Check Count: 11						Check Totals:	\$183,568.78	\$183,568.78			
Total EFT File Count: 48						EFT File Totals:	\$218,090.62	\$218,090.62			
Total Online Payments Count: 6				Online Payments Totals:		\$113,602.54	\$113,602.54				
Total Bank Draft Count: 0				Bank Draft Totals:		\$0.00	\$0.00				
Total No Check Count: 0				No Check Totals:		\$0.00	\$0.00				

AP Check Preview

Date Range: All Dates

Indianola Municipal Utilities

Thursday, February 19, 2026
10:12:31 AM

Vendor	Due Date	Notes	Terms	Bill Total	Discount	Interest	Amount Due	Pavment	Invoice Number	Bill Number	Payment Type
Account To Be Paid From 0000-10120-999											
ACCO UNLIMITED CORP. - VEND-2810 - EFT File											
	2/6/2026	Chlorine Pipe and Fittings	Open Terms	97.10	0.00	0.00	97.10	97.10	0260451-IN	BL-18120	EFT File
							97.10	97.10			
AGRILAND FS INC - VEND-48228 - EFT File											
	2/1/2026	0126 Fuel Distribution	Open Terms	2,872.87	0.00	0.00	2,872.87	2,872.87	7156286-0126	BL-18121	EFT File
							2,872.87	2,872.87			
Brenda Wickett - VEND-1141 - BL-18139											
	2/18/2026	Credit Refund	Net 30	11.00	0.00	0.00	11.00	11.00	00035870-5	BL-18139	Check
							11.00	11.00			
Calix Inc - VEND-1028 - EFT File											
	3/6/2026	0226 Calix Operations Cloud	Net 30	3,574.08	0.00	15.00	3,574.08	3,574.08	7066678	BL-18122	EFT File
	3/6/2026	0226 Calix Service Cloud	Net 30	3,238.10	0.00	15.00	3,238.10	3,238.10	7066679	BL-18123	EFT File
	3/6/2026	0226 Calix Cloud Foundation	Net 30	764.11	0.00	15.00	764.11	764.11	7067388	BL-18124	EFT File
	3/16/2026	ONT - GS5229XG XGS	Net 30	47,734.12	0.00	15.00	47,734.12	47,734.12	402797	BL-18142	EFT File
							55,310.41	55,310.41			
Casual Rags - VEND-1006 - EFT File											
	3/13/2026	Uniform Shirts	Net 30	94.16	0.00	15.00	94.16	94.16	241242	BL-18143	EFT File
							94.16	94.16			
Cedar Falls Utilities - VEND-1045 - EFT File											
	3/7/2026	0126 Transit & Transport	Net 30	9,645.00	0.00	15.00	9,645.00	9,645.00	Jan26	BL-18144	EFT File
							9,645.00	9,645.00			
Cintas Corporation - VEND-1007 - EFT File											
	3/11/2026	First Aid Supplies - Fiber	Net 30	43.57	0.00	15.00	43.57	43.57	5317409006	BL-18125	EFT File
							43.57	43.57			
City Of Indianola - VEND-1008 - BL-18126											
	3/11/2026	Legal Services	Net 30	460.00	0.00	15.00	460.00	460.00	INV00157	BL-18126	EFT File
							460.00	460.00			
City Of Indianola - VEND-1008 - BL-18145											
	3/19/2026	CPR Training	Net 30	1,026.27	0.00	15.00	1,026.27	1,026.27	INV00160	BL-18145	EFT File

AP Check Preview

Date Range: All Dates

Indianola Municipal Utilities

Thursday, February 19, 2026
10:12:31 AM

Vendor	Due Date	Notes	Terms	Bill Total	Discount	Interest	Amount Due	Pavment	Invoice Number	Bill Number	Payment Type
							1,026.27	1,026.27			
Core Telecom Systems, Inc - VEND-1498 - EFT File											
	3/6/2026	GIGABIT ACCESS MULTIPLEXER	Net 30	6,335.36	0.00	15.00	6,335.36	6,335.36	126390 & 126909	BL-18127	EFT File
							6,335.36	6,335.36			
Delta Dental Vision Of Iowa - VEND-1481 - EFT File											
	3/3/2026	0226 Vision	Net 30	444.56	0.00	15.00	444.56	444.56	2020602	BL-18128	EFT File
							444.56	444.56			
DICKINSON LAW - VEND-101709 - EFT File											
	2/6/2026	0126 Legal Services	Open Terms	1,350.00	0.00	0.00	1,350.00	1,350.00	1174806	BL-18129	EFT File
	2/6/2026	0126 Legal Services	Open Terms	2,064.00	0.00	0.00	2,064.00	2,064.00	1174805	BL-18130	EFT File
							3,414.00	3,414.00			
Dust Pros Janitorial - VEND-1011 - EFT File											
	3/17/2026	Cleaning Supplies - Fiber	Net 30	82.92	0.00	15.00	82.92	82.92	3537	BL-18132	EFT File
	3/17/2026	0226 Cleaning - Util Svcs	Net 30	749.00	0.00	15.00	749.00	749.00	3538	BL-18133	EFT File
	3/17/2026	Cleaning Supplies - EL	Net 30	163.18	0.00	15.00	163.18	163.18	3535	BL-18146	EFT File
	3/17/2026	0226 Cleaning - EL	Net 30	856.00	0.00	15.00	856.00	856.00	3534	BL-18147	EFT File
	6/14/2026	0226 Cleaning - Fiber	Net 30	856.00	0.00	15.00	856.00	856.00	3536	BL-18131	EFT File
							2,707.10	2,707.10			
FLETCHER-REINHARDT CO. - VEND-16530 - EFT File											
	2/4/2026	Connectors	Open Terms	508.98	0.00	0.00	508.98	508.98	S1360703.001	BL-18135	EFT File
	2/4/2026	Brackets/Bolts/Connectors/Tape	Open Terms	1,217.08	0.00	0.00	1,217.08	1,217.08	S1361021.001	BL-18137	EFT File
							1,726.06	1,726.06			
Hearst Television Inc - VEND-1131 - EFT File											
	3/2/2026	0126 KCCI	Net 30	8,221.85	0.00	15.00	8,221.85	8,221.85	628690	BL-18148	EFT File
							8,221.85	8,221.85			
HPI, LLC - VEND-1409 - EFT File											
	3/8/2026	Turbine 8 Roto Electric Inspection	Net 30	22,137.50	0.00	15.00	22,137.50	22,137.50	25-7113-09	BL-18149	EFT File
							22,137.50	22,137.50			
HYDAKER WHEATLAKE CO, THE - VEND-103109 - Check											
	1/31/2026	Transmission Replacement	Open Terms	19,047.84	0.00	0.00	19,047.84	19,047.84	117498	BL-18150	Check

AP Check Preview

Date Range: All Dates

Indianola Municipal Utilities

Thursday, February 19, 2026
10:12:31 AM

Vendor Due Date	Notes	Terms	Bill Total	Discount	Interest	Amount Due	Pavment	Invoice Number	Bill Number	Payment Type
						19,047.84	19,047.84			
IEUSTA - VEND-23614 - Check										
2/18/2026	2026 IEUSTA Annual Fee -80-0630520	Open Terms	150.00	0.00	0.00	150.00	150.00	2026 Fee	BL-18158	Check
						150.00	150.00			
Infomax Office Systems Inc - VEND-1013 - Check										
3/12/2026	0226 Copier Contract	Net 30	736.40	0.00	15.00	736.40	736.40	41257907	BL-18151	Check
						736.40	736.40			
Internal Revenue Service - VEND-1307 - Online Payments										
3/15/2026	941 Income Tax Payable - 021326 Payroll	Net 30	32,585.49	0.00	15.00	32,585.49	32,585.49	021326 Payroll	BL-18152	Online Payments
						32,585.49	32,585.49			
Iowa Department Of Human Services - VEND-1310 - Online Payments										
3/15/2026	Garnishment Payable - 021326 Payroll	Net 30	653.99	0.00	15.00	653.99	653.99	021326 Payroll	BL-18153	Online Payments
						653.99	653.99			
Iowa Department Of Revenue - VEND-1117 - Online Payments										
3/2/2026	January 2026 Use Tax	Net 30	144.08	0.00	15.00	144.08	144.08	Jan26	BL-18156	Online Payments
3/3/2026	0226 Sales Tax Billed	Net 30	47,647.00	0.00	15.00	47,647.00	47,647.00	0226 Sales Tax Billed	BL-18157	Online Payments
3/15/2026	IA Income Tax Payable - 021326 Payroll	Net 30	3,450.88	0.00	15.00	3,450.88	3,450.88	021326 Payroll	BL-18155	Online Payments
						51,241.96	51,241.96			
Iowa One Call - VEND-1015 - EFT File										
3/4/2026	1225 Locates - WA	Net 30	94.50	0.00	15.00	94.50	94.50	279512	BL-18159	EFT File
3/4/2026	1225 Locates - EL	Net 30	91.80	0.00	15.00	91.80	91.80	278423	BL-18160	EFT File
3/4/2026	1225 Locates - Fiber	Net 30	105.30	0.00	15.00	105.30	105.30	279511	BL-18161	EFT File
						291.60	291.60			
Irby - VEND-1259 - EFT File										
3/4/2026	Flood Seal Connector Block	Net 30	529.65	0.00	15.00	529.65	529.65	S014497804.001	BL-18163	EFT File
3/12/2026	Helix Anchors	Net 30	211.86	0.00	15.00	211.86	211.86	S014506113.001	BL-18162	EFT File
						741.51	741.51			
ISolved - VEND-1363 - Online Payments										
3/15/2026	FSA Payable - 021326 Payroll	Net 30	419.23	0.00	15.00	419.23	419.23	021326 Payroll	BL-18164	Online Payments

AP Check Preview

Date Range: All Dates

Indianola Municipal Utilities

Thursday, February 19, 2026
10:12:31 AM

Vendor	Due Date	Notes	Terms	Bill Total	Discount	Interest	Amount Due	Pavment	Invoice Number	Bill Number	Payment Type
							419.23	419.23			
Luella L Nickelson - VEND-1141 - BL-18140											
2/18/2026	Credit Refund	Net 30	10.67	0.00	0.00	10.67	10.67	00038176-0	BL-18140	Check	
							10.67	10.67			
Midwest Alarm Services - VEND-1116 - EFT File											
3/10/2026	Annual Fire Alarm Monitoring Fee	Net 30	572.79	0.00	15.00	572.79	572.79	534924	BL-18165	EFT File	
							572.79	572.79			
Mission Square - VEND-1303 - Online Payments											
3/15/2026	457 Payable - 021326 Payroll	Net 30	6,554.66	0.00	15.00	6,554.66	6,554.66	021326 Payroll	BL-18166	Online Payments	
							6,554.66	6,554.66			
MUNICIPAL SUPPLY INC - VEND-35810 - Check											
2/12/2026	4x12 repair clamp	Open Terms	172.00	0.00	0.00	172.00	172.00	0967338-IN	BL-18167	Check	
							172.00	172.00			
MURPHY TRACTOR & EQUIPMENT - VEND-35813 - Check											
12/2/2025	New Skid Steer Weights	Open Terms	918.98	0.00	0.00	918.98	918.98	2575661	BL-18169	Check	
							918.98	918.98			
Mutual Of Omaha - VEND-1107 - Check											
3/3/2026	0226 Premiums	Net 30	6,528.69	0.00	15.00	6,528.69	6,528.69	2014099629	BL-18170	Check	
							6,528.69	6,528.69			
Power & Tel - VEND-1037 - EFT File											
3/4/2026	SPLITTER - CABINET 1X32	Net 30	2,906.29	0.00	15.00	2,906.29	2,906.29	8244359-00	BL-18173	EFT File	
3/15/2026	Connector & Cable	Net 30	340.67	0.00	15.00	340.67	340.67	8246100-00	BL-18172	EFT File	
3/18/2026	Jumper	Net 30	2,318.56	0.00	15.00	2,318.56	2,318.56	8239345-00	BL-18171	EFT File	
							5,565.52	5,565.52			
Register Of Copyrights - VEND-1156 - Online Payments											
3/14/2026	Copyright Royalty Fee - 2025/2	Net 30	997.60	0.00	15.00	997.60	997.60	2025/2	BL-18174	Online Payments	
							997.60	997.60			
RESCO - VEND-47234 - EFT File											
2/10/2026	Bolts	Open Terms	353.91	0.00	0.00	353.91	353.91	3102155	BL-18175	EFT File	

AP Check Preview

Date Range: All Dates

Indianola Municipal Utilities

Thursday, February 19, 2026
10:12:31 AM

Vendor	Due Date	Notes	Terms	Bill Total	Discount	Interest	Amount Due	Pavment	Invoice Number	Bill Number	Payment Type
							353.91	353.91			
SKARSHAUG TESTING LABORATORY INC - VEND-50410 - EFT File											
	2/10/2026	High Voltage PPE Sleeves	Open Terms	796.08	0.00	0.00	796.08	796.08	292897	BL-18176	EFT File
	2/10/2026	Hot Line Jumper	Open Terms	281.56	0.00	0.00	281.56	281.56	292898	BL-18177	EFT File
							1,077.64	1,077.64			
STATE HYGIENIC LABORATORY - VEND-23245 - EFT File											
	2/1/2026	Testing	Open Terms	332.50	0.00	0.00	332.50	332.50	315889	BL-18178	EFT File
							332.50	332.50			
Teyona Greenhalgh - VEND-1141 - BL-18141											
	2/18/2026	Credit Refund	Net 30	326.12	0.00	0.00	326.12	326.12	00021363-2	BL-18141	Check
							326.12	326.12			
TIM HILDRETH COMPANY - VEND-21751 - EFT File											
	2/4/2026	Plant Boiler Repairs	Open Terms	2,630.02	0.00	0.00	2,630.02	2,630.02	33819	BL-18179	EFT File
							2,630.02	2,630.02			
TRUCK EQUIPMENT INC - VEND-53754 - EFT File											
	2/7/2026	Dump Truck Body and Install	Open Terms	23,432.36	0.00	0.00	23,432.36	23,432.36	89754	BL-18180	EFT File
							23,432.36	23,432.36			
VAN WERT INC - VEND-101069 - EFT File											
	2/13/2026	(1) 4" meter, (3) 1.5" meter, (4) 1" meter	Open Terms	11,741.00	0.00	0.00	11,741.00	11,741.00	82796	BL-18181	EFT File
							11,741.00	11,741.00			
Waste Management - VEND-1086 - Check											
	3/6/2026	0226 2yd Dumpster Service - WA	Net 30	193.76	0.00	15.00	193.76	193.76	9347255-0516-8	BL-18182	Check
							193.76	193.76			
WESCO - VEND-60220 - EFT File											
	2/6/2026	FR Outerwear	Open Terms	136.96	0.00	0.00	136.96	136.96	873354	BL-18183	EFT File
	2/10/2026	350 MCM URD & Pole Plates	Open Terms	7,023.39	0.00	0.00	7,023.39	7,023.39	877401	BL-18186	EFT File
	2/10/2026	Copper Wire Number 6	Open Terms	418.80	0.00	0.00	418.80	418.80	877400	BL-18187	EFT File
	2/12/2026	Insulators	Open Terms	181.24	0.00	0.00	181.24	181.24	882105	BL-18185	EFT File
	2/14/2026	336 Transmission Splices	Open Terms	296.66	0.00	0.00	296.66	296.66	886150	BL-18184	EFT File
							8,057.05	8,057.05			

AP Check Preview

Date Range: All Dates

Thursday, February 19, 2026
10:12:31 AM

Vendor	Due Date	Notes	Terms	Bill Total	Discount	Interest	Amount Due	Pavment	Invoice Number	Bill Number	Payment Type
Wiegert Disposal Inc - VEND-1081 - EFT File											
	3/3/2026	Jan26 Garbage Pickup - EL	Net 30	215.00	0.00	15.00	215.00	215.00	Jan26	BL-18188	EFT File
							215.00	215.00			
Total Payment Count: 43				Totals:			\$290,095.10	\$290,095.10			
Total Check Count: 10				Check Totals:			\$28,095.46	\$28,095.46			
Total EFT File Count: 27				EFT File Totals:			\$169,546.71	\$169,546.71			
Total Online Payments Count: 6				Online Payments Totals:			\$92,452.93	\$92,452.93			
Total Bank Draft Count: 0				Bank Draft Totals:			\$0.00	\$0.00			
Total No Check Count: 0				No Check Totals:			\$0.00	\$0.00			

MEMORANDUM

To: IMU Board of Trustees of the Electric, Water and Communications Utilities
From:
Date: February 23, 2026
Subject: Approval of Minutes of the prior meetings

Recommendation:

Attachments:

1. 1-12-2026 Minutes
2. 1-22-2026 Minutes
3. 2-11-2026 Minutes

IMU BOARD OF TRUSTEES OF THE ELECTRIC, WATER AND COMMUNICATIONS UTILITIES

January 12, 2026, 5:30 PM IMU Boardroom Minutes

The IMU Board of Trustees met in regular session at 5:30 pm on January 12th, 2026, in the IMU Conference Room. Board Chair Dom Selgrade called the meeting to order and on roll call the following board members were present: Dom Selgrade, Deb White, Lori Smith, Paul Craven; and Adam Voigts. There was no public comment.

White moved to approve the **Consent Agenda** as follows: Approval of Claims, Approval of Minutes of the prior meetings, Resolution 2026-001 Approving Payment Application #2 for Downtown Underground Conversion Project NE/SE Alley Premise Wiring, Resolution 2026-002 Authorizing Payment of Retainage Funds to Morris Enterprises for the East 3rd Avenue Water Main Improvement, Resolution 2026-003 Approving Payment Application 1 to Van Maanen Electric for Water Treatment Facility, Standby Generator Project, November 2025 Financial Report, presented by Doug Shull; and Craven seconded it. On roll call, the vote was AYES: Selgrade, Smith, White, Voigts, Craven. Whereas the motion carried unanimously.

Electric Utility Informational Items

Electric Director Mike Metcalf shared that staff worked alongside City staff to remove holiday decorations, crews have been working with apprentices on overhead work, they are preparing for the scheduled tree trimming in the NW area of town, and continue with seasonal tasks.

Water Utility Action Items

Voigts moved to approve **Resolution 2026-004** Resolution Setting Public Hearing for N. 6th Street Place Water Main Improvements Project; Craven seconded. On roll call, the vote was AYES: Selgrade, Smith, White, Voigts, Craven. Whereas the motion carried unanimously.

Water Utility Informational Items

Water Department Director Justin Brand shared the weather has allowed Water Department staff to make great progress on main break restorations and are working on meter swaps and winter maintenance.

Communications Utility Informational Items

Communications Director Kurt Ripperger and staff are catching up post-holiday, completing outside work and drops and have started weekly meetings for the TV conversion.

Combined Electric, Water and Communications Action Items

White moved to approve **Resolution 2026-005** Establishing a Regular Meeting Schedule; Craven seconded. This moves to to one meeting per month on the 2nd Monday Starting with this meeting. On roll call, the vote was AYES: Selgrade, Smith, White, Voigts, Craven. NAYS: Whereas the motion carried unanimously.

Smith moved to approve **Resolution 2026-006** Resolution Appointing Finance Director; White seconded. On roll call, the vote was AYES: Selgrade, Smith, White, Voigts, Craven. NAYS: Whereas the motion carried unanimously.

White moved to approve **Resolution 2026-007** Resolution Setting Public Hearing FY26-27 Budget; Voigts seconded. On roll call, the vote was AYES: Selgrade, Smith, White, Voigts, Craven. NAYS: Whereas the motion carried unanimously.

Craven moved to approve **Resolution 2026-008** Resolution Authorizing Denman & Company Audit; Voigts seconded. On roll call, the vote was AYES: Selgrade, Smith, White, Voigts, Craven. Whereas the motion carried unanimously.

Combined Electric, Water and Communications Informational Items

General Manager Chris DesPlanques reviewed the Solar Commissioning, will be attending the MEAN meetings Jan 21-22 setting the wholesale electric rate, welcomed interested board members to join the facility tour Jan 19th with new Councilperson Tiffany Davis and new Finance Director Michelle Sheraden, and staff meeting with city staff to discuss Health Insurance.

No **Other Business** was discussed. Chairman Dom Selgrade jovially invited outgoing Finance Director Chris Longer to continue to attend board meetings after her retirement January 23rd.

At 6:12 Voigts motioned and Smith seconded to enter into **Closed Session- Legal: Enter into closed session in accordance with Iowa Code Section 21.5 (1)(c) to discuss strategy with legal counsel in matters that are presently in litigation or where litigation is imminent and where its disclosure would be likely to prejudice or disadvantage the government** On roll call, Ayes: Selgrade, Smith, White, Voigts, Craven; motion passed unanimously.

Smith motioned to exit this closed session and Craven seconded. On roll call, Ayes: Selgrade, Smith, White, Voigts, Craven; motion passed unanimously.

White moved to **Adjourn** at 7:24 pm, and Smith seconded. On Voice vote, Ayes: Selgrade, Smith, White, Voigts, Craven; motion passed unanimously.

IMU BOARD OF TRUSTEES OF THE ELECTRIC, WATER AND COMMUNICATIONS UTILITIES

Jan 22, 2026, 2:30 PM IMU Boardroom Minutes

The IMU Board of Trustees met remotely via teams and phone in special session at 2:36 pm on January 22, 2025. Acting Board Chair Lori Smith called the meeting to order and on roll call the following board members were present: Adam Voigts, Lori Smith, and Paul Vincent Craven.

There was no public comment.

Electric Utility Action Items

Craven motioned to approve Resolution 2026-009 Approving Litigation Involving Indianola Municipal Utilities and Voigts seconded. On roll call: Ayes Smith, Voigts, Craven; nays; none.

There was no other business discussed.

Craven moved to **Adjourn** and Voigts seconded. On Voice vote, Ayes: On roll call: Ayes: Smith, Voigts, Craven; Nays: None, motion passed unanimously at 2:40 pm.

IMU BOARD OF TRUSTEES OF THE ELECTRIC, WATER AND COMMUNICATIONS UTILITIES

February 11, 2026, 3:00 PM Minutes

The IMU Board of Trustees met remotely via teams in special session at 3:00 pm on February 11, 2026. Board Chair Dom Selgrade called the meeting to order and on roll call the following board members were present: Dom Selgrade, Lori Smith, and Paul Vincent Craven.

There was no public comment.

Electric Utility Action Items

Smith motioned to approve the Consent Agenda; Approving Resolution 2026-010 Setting Public Hearing N 6th St Place Water Main Improvements Project, Resolution 2026-011 Setting Public Hearing for East Iowa Circuit Switcher Replacement Project, Resolution 2026-012 Setting Public Hearing for the authorization of a Loan Agreement and the issuance of not to exceed \$6,800,000 Electric Revenue Refunding Capital Loan Notes, and Resolution 2026-013 Approving Pay App 3 to Miller Electric for the Downtown Underground Conversion Project North-East South East Alley Premise Wiring Project and Craven seconded. On roll call: Ayes Selgrade, Smith, Craven; nays; none.

There was no other business discussed.

Craven moved to **Adjourn** and Smith seconded. On Voice vote, Ayes: On roll call: Ayes: Selgrade, Smith, Craven; Nays: None, motion passed unanimously at 3:06 pm.

MEMORANDUM

To: IMU Board of Trustees of the Electric, Water and Communications Utilities

From:

Date: February 23, 2026

Subject: Authorization for Warren Water District to serve a customer within their territory upon proper notice to IMU since the customer is within 2 miles of the IMU territory, located at 13134 McGregor St.

Recommendation:

Attachments: 1. McGregor St



MEMORANDUM

To: IMU Board of Trustees of the Electric, Water and Communications Utilities
From:
Date: February 23, 2026
Subject: December 2025 Finance Report

Recommendation:

Attachments: 1. 1225 Financial Report

Indianola Municipal Utilities
Financial Report
For the Six Months Ended December 31, 2025
(50% of Fiscal Year Completed)

As discussed in the strategic planning meeting, the capital funds will collapse into the O&M funds to eliminate negative cash fund balances.

Net position reflects each department's long-term financial position. It includes cash and other assets (such as billing receivables and infrastructure), minus liabilities and accumulated depreciation.

Cash on Hand - 110 days or more of cash on hand based on the recommended 90-120 days to maintain our bond rating (A).

This report is on a modified cash basis, with monthly (non-cash) depreciation included.

Capital expenses may fall ahead or behind budget due to timing of project completion and payments.

Water and Electric

- Revenues are seasonal and do not accrue evenly throughout the year.
- Year-to-date results should be evaluated in the context of seasonality rather than a straight-line 50% benchmark.
- December revenue reflects October-November usage.

Water

- Total consumption is approximately 5.5 million gallons lower than the prior year, primarily driven by reduced irrigation usage (2.4 million gallons) and the closure of Harvest Innovations (626,000 gallons) and lower consumption from car wash locations (642,000).

Electric

- The Electric O&M Transfer Out budget includes a planned transfer to the capital fund. Actual transfers to date reflect only transfers for debt service.

Fiber

- The Fiber O&M Transfer Out budget includes a planned transfer to the capital fund. Actual transfers to date reflect only transfers for debt service.
- Inventory on hand includes both customer premise equipment, \$1,890,136 and stock supply inventory, \$243,054.

Admin & Utility Services

- This fund is intended to maintain a zero balance; any balance reflects routine timing of monthly city service transfers.

Water Utility Financial Summary
December 31, 2025

600 WATER OPERATING FUND

	FY24-25		
	Budget	YTD Actual	% of Budget
Water Service Sales	3,473,300	1,629,561	46.9%
Other Water Revenue	587,684	294,923	50.2%
Total Revenue:	4,060,984	1,924,484	
Water O&M Expense	2,301,497	1,116,467	48.5%
Water O&M Transfers Out	1,950,600	975,300	50.0%
Water Depreciation		324,508	
Total Expense, Transfers & Depreciation:	4,252,097	2,416,275	
Beginning Net Position		14,593,603	
Net Surplus (Deficit)		(491,791)	
Ending Net Position		14,101,812	

700 WATER CAPITAL FUND

From Water Operations	1,950,600	975,300	50.0%
Total Transfers In:	1,950,600	975,300	
Water Capital Expense	2,085,600	359,416	17.2%
Total Expense:	2,085,600	359,416	
Beginning Net Position		4,151,843	
Net Surplus (Deficit)		615,884	
Ending Net Position		4,767,727	

780 WATER IMPROVE FUND

Beginning Net Position	75,000
Net Surplus (Deficit)	0
Ending Net Position	75,000

WATER CASH ON HAND

(110 days or greater)

O&M	\$ 280,650
Capital	\$ 4,687,123
Debt Service	\$ 75,000
464 days	\$ 5,042,773

	FY25-26		
	Budget	YTD Actual	% of Budget
	3,637,072	1,644,526	45.2%
	595,584	291,176	48.9%
	4,232,656	1,935,702	
	2,436,707	1,130,124	46.4%
	1,526,200	0	0.0%
		331,012	
	3,962,907	1,461,136	
		13,881,413	
		474,565	
		14,355,978	

	Gallons Billed	
	FY24-25	FY25-26
Jul	35,997,123	36,675,070
Aug	31,501,680	32,864,800
Sep	35,801,270	31,933,430
Oct	29,598,580	36,128,840
Nov	37,798,490	30,821,760
Dec	30,435,080	27,221,330
Jan		
Feb		
Mar		
Apr		
May		
Jun		
YTD	201,132,223	195,645,230
		-2.7%

	Inventory on Hand	
	FY24-25	FY25-26
Jul	\$ 408,909	\$ 335,804
Aug	\$ 401,413	\$ 321,662
Sep	\$ 390,131	\$ 318,511
Oct	\$ 389,592	\$ 310,751
Nov	\$ 385,777	\$ 299,644
Dec	\$ 389,152	\$ 335,234
Jan		
Feb		
Mar		
Apr		
May		
Jun		
YTD	\$ 394,162	\$ 320,268
		-18.7%

Electric Utility Financial Summary
December 31, 2025

630 ELECTRIC OPERATING FUND

	FY24-25			FY25-26		
	Budget	YTD Actual	% of Budget	Budget	YTD Actual	% of Budget
Electric Service Sales	16,405,606	9,231,969	56.3%	17,225,886	9,624,650	55.9%
Other Electric Revenue	2,043,100	1,095,672	53.6%	2,084,700	971,511	46.6%
Total Revenue:	18,448,706	10,327,642		19,310,586	10,596,161	
Electric O&M Expense	16,893,220	8,152,187	48.3%	17,510,259	8,195,428	46.8%
Electric O&M Transfer Out	1,981,202	1,615,601	81.5%	3,178,800	339,400	10.7%
Electric Depreciation		831,932			839,334	
Total Expense, Transfers & Depreciation:	18,874,422	10,599,719		20,689,059	9,374,162	
Beginning Net Position		33,316,174			32,262,212	
Net Surplus (Deficit)		(272,078)			1,221,999	
Ending Net Position		33,044,097			33,484,211	

730 ELECTRIC CAPITAL FUND

Electric Capital Revenue	1,274,100	846,079	66.4%	1,510,100	643,095	42.6%
From Electric Operations	1,250,000	1,250,000	100.0%	2,500,000	-	0.0%
Total Revenue and Transfers In:	2,524,100	2,096,079		4,010,100	643,095	
Electric Capital Expense	2,579,400	699,192	27.1%	2,421,000	859,862	35.5%
Total Expense:	2,579,400	699,192		2,421,000	859,862	
Beginning Net Position		11,764,299			14,770,282	
Net Surplus (Deficit)		1,396,887			(216,767)	
Ending Net Position		13,161,186			14,553,515	

733 ELECTRIC DEBT SERVICE

From Electric Operations to Debt	731,202	365,601	50.0%	678,800	339,400	50.0%
Total Transfers In:	731,202	365,601		678,800	339,400	
Electric Debt Service	731,202	148,064	20.2%	678,800	140,833	20.7%
Total Expense:	731,202	148,064		678,800	140,833	
Beginning Net Position		1,379,914			1,384,135	
Net Surplus (Deficit)		217,537			198,567	
Ending Net Position		1,597,451			1,582,702	

ELECTRIC CASH ON HAND

(110 days or greater)

O&M	\$ 7,893,911
Capital	\$ 11,421,605
Debt Service	\$ 1,582,702
370 days	\$ 20,898,218

	kWh Billed	
	FY24-25	FY25-26
Jul	11,504,883	9,967,863
Aug	11,693,918	12,994,911
Sep	12,751,518	13,609,870
Oct	11,534,130	11,690,953
Nov	10,618,514	10,205,744
Dec	8,582,354	8,313,155
Jan		
Feb		
Mar		
Apr		
May		
Jun		
YTD	66,685,317	66,782,496
		0.1%

	Inventory on Hand	
	FY24-25	FY25-26
Jul	\$ 1,678,539	\$ 1,755,215
Aug	\$ 1,646,986	\$ 1,738,861
Sep	\$ 1,656,391	\$ 1,710,662
Oct	\$ 1,711,813	\$ 1,689,418
Nov	\$ 1,681,717	\$ 1,728,756
Dec	\$ 1,655,261	\$ 1,710,369
Jan		
Feb		
Mar		
Apr		
May		
Jun		
YTD	\$ 1,671,784	\$ 1,722,213
		3.0%

Fiber Utility Financial Summary
December 31, 2025

640 FIBER OPERATING FUND

	FY24-25			FY25-26		
	Budget	YTD Actual	% of Budget	Budget	YTD Actual	% of Budget
Fiber Service Sales	5,230,000	2,591,819	49.6%	5,365,000	2,716,657	50.6%
Other Fiber Revenue	410,050	144,620	35.3%	490,450	181,620	37.0%
Total Revenue:	5,640,050	2,736,440		5,855,450	2,898,277	
Fiber O&M Expense	3,627,836	1,800,324	49.6%	3,725,015	1,866,804	50.1%
Fiber O&M Transfer Out	2,022,828	1,040,764	51.5%	2,125,420	563,310	26.5%
Fiber Depreciation		175,744			256,997	
Total Expense, Transfers & Depreciation:	5,650,664	3,016,833		5,850,435	2,687,112	
Beginning Net Position		(2,673,110)			(2,307,139)	
Net Surplus (Deficit)		(280,393)			211,165	
Ending Net Position		(2,953,503)			(2,095,973)	

740 FIBER CAPITAL FUND

Fiber Capital Revenue	0	1,614			282	
From Fiber Operations	896,300	477,500	53.3%	998,800	0	0.0%
Total Revenue and Transfers In:	896,300	479,114		998,800	282	
Fiber Capital Expense	1,121,300	427,107	38.1%	998,800	404,238	40.5%
Fiber Capital Depreciation		159,586		0	190,281	
Total Expense, Transfers & Depreciation:	1,121,300	586,693		998,800	594,519	
Beginning Net Position		984,304			1,508,816	
Net Surplus (Deficit)		(107,579)			(594,236)	
Ending Net Position		876,725			914,579	

795 FIBER DEBT SERVICE

From Fiber Operations to Debt	1,126,528	563,264	50.0%	1,126,620	563,310	50.0%
Total Transfers In:	1,126,528	563,264		1,126,620	563,310	
Fiber Debt Service	1,126,528	167,611	14.9%	1,126,620	156,296	13.9%
Total Expense:	1,126,528	167,611		1,126,620	156,296	
Beginning Net Position		4,668			7,859	
Net Surplus (Deficit)		395,653			407,014	
Ending Net Position		400,321			414,873	

*Fund 640 Ending Fund Balance (2,553,182)
 *Fund 740 Ending Fund Balance 876,725
 (1,676,458)

(1,681,101)
 914,579
 (766,522)

The deficit fund balance reflects start-up costs incurred to launch the utility service. It is expected to be eliminated over time through net customer revenues.

FIBER CASH ON HAND

(110 days or greater)

O&M	\$ (48,045)
Capital	\$ 327,831
Debt Service	\$ 414,873
43 days	\$ 694,659

	Subscriptions	
	FY24-25	FY25-26
Jul	4,177	4,444
Aug	4,204	4,459
Sep	4,230	4,446
Oct	4,268	4,476
Nov	4,290	4,479
Dec	4,280	4,514
Jan		
Feb		
Mar		
Apr		
May		
Jun		
YTD	4,242	4,470
		5.4%

	Inventory on Hand	
	FY24-25	FY25-26
Jul	\$ 1,819,505	\$ 2,035,210
Aug	\$ 1,823,670	\$ 2,025,066
Sep	\$ 1,875,146	\$ 2,030,392
Oct	\$ 1,857,023	\$ 2,071,282
Nov	\$ 1,886,575	\$ 2,133,190
Dec	\$ 1,896,759	\$ 2,272,681
Jan		
Feb		
Mar		
Apr		
May		
Jun		
YTD	\$ 1,859,780	\$ 2,094,637
		12.6%

IMU Admin/US Financial Summary
December 31, 2025

	FY24-25			FY25-26		
	Budget	YTD Actual	% of Budget	Budget	YTD Actual	% of Budget
620 ADMIN & UTILITY SERVICES						
Admin/US Revenue	1,409,493	758,943	53.8%	1,444,214	689,107	47.7%
Total Revenue:	1,409,493	758,943		1,444,214	689,107	
Admin/US O&M Expense	1,409,493	688,870	48.9%	1,444,214	737,768	51.1%
Admin/US Depreciation		17,696			17,696	
Total Expense, Transfers & Depreciation:	1,409,493	706,566		1,444,214	755,464	
Beginning Net Position		181,343			247,710	
Net Surplus (Deficit)		52,377			(66,356)	
Ending Net Position		233,720			181,354	
855 LIABILITY INS FUND						
Beginning Net Position		9,099			9,099	
Net Surplus (Deficit)		0			0	
Ending Net Position		9,099			9,099	
US/ADMIN CASH ON HAND	O&M	\$ 545,763				
Transfer of city services collected in December 2025		\$ (537,505)				
		\$ 8,257				

MEMORANDUM

To: IMU Board of Trustees of the Electric, Water and Communications Utilities

From:

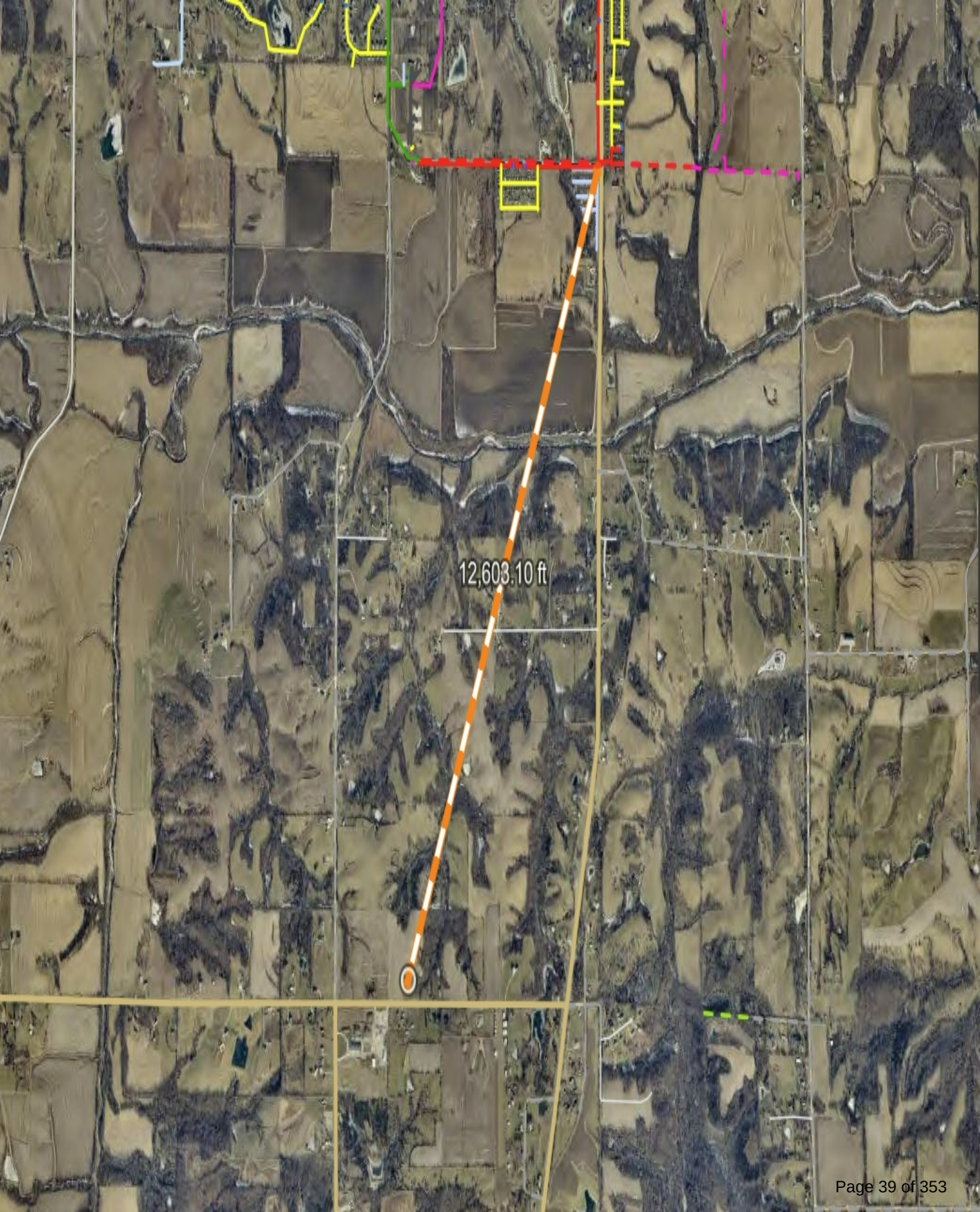
Date: February 23, 2026

Subject: Authorization for Warren Water District to serve a customer within their territory upon proper notice to IMU since the customer is within 2 miles of the IMU territory, located at 12095 Nevada Street .

Recommendation: **Information:** Under state regulations for water service territories, Warren Water District (WWD) is required to provide notice to IMU when a customer has requested service from WWD when the location is within 2 miles of the IMU service territory. A resident at 12095 Nevada Street has requested service from WWD and WWD has provided notification to IMU as the property is within 2 miles of the IMU water district. To serve this customer outside of the IMU district, IMU would have to construct a 12603.10 foot extension to the property. Superintendent Brand is recommending the Board of Trustees acknowledge the notification from WWD to serve the property as it is within WWD service territory and WWD already has a water main at this location.

A simple motion approving the notification from WWD to service this property outside of the IMU water service territory is in order.

Attachments: 1. 12095 Nevada St



MEMORANDUM

To: IMU Board of Trustees of the Electric, Water and Communications Utilities

From:

Date: February 23, 2026

Subject: Public hearing regarding the plans, specifications, form of contract and estimate of cost for East Iowa Circuit Switcher Replacement Project- Installation.

Recommendation: Public hearing regarding the plans, specifications, form of contract and estimate of cost for East Iowa Circuit Switcher Replacement Project- Installation.

Agenda document is the plans, specifications, form of contract and estimate of cost.

The board action is to open the public hearing, take any public or staff comment, and then to close the public hearing.

Attachments: 1. East Iowa Circuit Switcher Replacement 2025-12-22

INDIANOLA MUNICIPAL UTILITIES

EAST IOWA SUBSTATION SUBSTATION CIRCUIT SWITCHER REPLACEMENT PROJECT

INSTALLATION CONTRACT AND SPECIFICATIONS



ISSUED FOR BIDDING
DECEMBER 22, 2025



INDIANOLA MUNICIPAL UTILITIES
East Iowa Circuit Switcher Replacement Project - Installation
Section 00000 - Index

SECTION	TITLE
	<u>Bidding Requirements</u>
00050	Notice of Hearing and Letting
00200	Instructions to Bidders
00410	Bid Form (including Bidder Status Form)
00430	Bid Bond
	<u>Contract Documents</u>
00522	Contract for Construction of a Small Project
00610	Performance Bond
00615	Payment Bond
	<u>Construction Specifications</u>
01000	General Requirements
01001	Sequence of Work
16910	Materials
17839	Project Record Documents
33000	Cast-In-Place Concrete
337210	Substation Structural Steel
337226	Substation Bus and Equipment
337233.13	Substation Relays & Controls
337233.19	Substation Testing & Commissioning
337233.33	Raceway for Substations
337243	Substation Control Conductors and Cables
337300	Major Equipment
337923	Utility Substation Grounding
Appendix A	East Iowa Substation Construction Drawings (separate volume)

Construction Drawings are listed on first page of Appendix A

NOTICE OF HEARING AND LETTING EAST IOWA CIRCUIT SWITCHER REPLACEMENT PROJECT - INSTALLATION

Sealed proposals will be received by the Board of Trustees of Indianola Municipal Utilities (IMU), Indianola, Iowa, (Buyer) at the IMU Customer Service Center, 210 W. 2nd Ave., Indianola, Iowa until 2:00 P.M. local time on January 30th, 2025 for a project identified as the EAST IOWA CIRCUIT SWITCHER REPLACEMENT PROJECT - INSTALLATION, and as described in detail in the specifications for the project now on file in the office of the Board Secretary. Proposals will be opened in public session at that time. Proposals will be acted upon by the Board of Trustees at a meeting to be held at the IMU Customer Service Center, 210 W. 2nd Ave., Indianola, Iowa at 5:30 P.M. local time on February 9th, 2026, or at such later time and place as may then be fixed. At that time and place a hearing will be held on the proposed plans, specifications, form of contract and estimate of cost for the improvements, and at the hearing any interested person may appear and file objections to the project or to the cost of the improvements.

The contract includes providing materials and performing work necessary to replace two existing 69kV circuit switchers with circuit breakers, including testing and commissioning on two 69-13kV transformers at the East Iowa Substation, 1300 E. Iowa Avenue, Indianola, IA.

Each proposal shall be sealed in an envelope marked "CK601 AND CK602 REPLACEMENT PROJECT - INSTALLATION". Each bid must be accompanied in a separate envelope by a bid bond, certified check or cashier's check drawn on a State of Iowa or federally chartered bank, or a certified share draft on a State of Iowa or federally chartered credit union, in an amount not less than five per cent (5%) of the total value of the Proposal, and made payable to the Buyer as a security that the bidder will enter into a contract for the Work within ten (10) days after the award of the contract to such bidder.

Bidders shall not be permitted to withdraw their bids for a period of sixty (60) days after they are opened.

100% of the amount due the successful bidder will be paid not earlier than 31 days from the final acceptance of the improvements by IMU, subject to the conditions and in accordance with the provisions of Chapter 384 and 573 of the Code of Iowa

Payment to the Contractor for completion of the improvements will be made in cash derived from available cash on hand from revenue and such other sources as may be available to IMU. The City of Indianola shall not incur any general obligation for the Improvements. The contract for the furnishing of the improvements shall not constitute a general obligation of the City of Indianola nor be payable in any manner by taxation.

If the successful bidder fails to execute a contract with IMU for the Improvements, the certified check or cashier's check deposited by the Supplier shall be cashed, or the bid bond declared forfeited, and proceeds retained by IMU as agreed liquidated damages.

Bidders will be required to complete a Bidder Status Form from the Iowa Department of Labor regarding Bidder's resident status within the State of Iowa and to submit that form with the bid. Failure to submit a fully completed Bidder Status Form with the bid may result in the bid being deemed nonresponsive and rejected.

Work is to commence on or about February 26th, 2026 and shall be substantially complete not later than May 15th, 2026. Work shall be completed and ready for final payment not later than 30 days after substantial completion.

Plans and specifications governing the furnishing of materials have been prepared by P&E Engineering Co., 500 SW 7th Street, Suite 100, Des Moines, Iowa 50309. The plans and specifications, prior proceedings of IMU referring to and defining the improvements and a proposed contract are hereby made a part of this notice by reference. The proposed contracts shall be executed in accordance with them. Copies of the specifications may be obtained from P & E Engineering Co.

By virtue of statutory authority, preference will be given to products and provisions grown and produced within the State of Iowa and Iowa domestic labor.

IMU reserves the right to reject any or all proposals and to waive informalities. Published upon order of the Board of Trustees Indianola Municipal Utilities, Indianola, Iowa.

MONICA THOMPSON
Board Secretary

INDIANOLA MUNICIPAL UTILITIES
East Iowa Circuit Switcher Replacement Project - Installation
Section 00200 – Instructions to Bidders

TABLE OF CONTENTS

	Page
Article 1— Defined Terms.....	1
Article 2— Bidding Documents	1
Article 3— Qualifications of Bidders	2
Article 4— Pre-Bid Conference	3
Article 5— Site and Other Areas; Existing Site Conditions; Examination of Site; Owner’s Safety Program; Other Work at the Site	3
Article 6— Bidder’s Representations and Certifications	4
Article 7— Interpretations and Addenda	4
Article 8— Bid Security	4
Article 9— Contract Times.....	4
Article 10— Substitute and “Or Equal” Items.....	5
Article 11— Subcontractors, Suppliers, and Others.....	5
Article 12— Preparation of Bid	6
Article 13— Basis of Bid.....	7
Article 14— Submittal of Bid.....	7
Article 15— Modification and Withdrawal of Bid	8
Article 16— Opening of Bids.....	8
Article 17— Bids to Remain Subject to Acceptance	8
Article 18— Evaluation of Bids and Award of Contract.....	8
Article 19— Bonds and Insurance	9
Article 20— Signing of Agreement.....	9
Article 21— Sales and Use Taxes.....	9

ARTICLE 1—DEFINED TERMS

- 1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:
- A. *Issuing Office*—The office from which the Bidding Documents are to be issued, and which registers plan holders. The Issuing Office for this project will be P & E Engineering Co., 500 SW 7th St., Suite 100, Des Moines, IA 50309.

ARTICLE 2—BIDDING DOCUMENTS

- 2.01 Bidder shall obtain a complete set of Bidding Requirements and proposed Contract Documents (together, the Bidding Documents). See the Contract for Construction of a Small Project for a list of the Contract Documents. It is Bidder's responsibility to determine that it is using a complete set of documents in the preparation of a Bid. Bidder assumes sole responsibility for errors or misinterpretations resulting from the use of incomplete documents, by Bidder itself or by its prospective Subcontractors and Suppliers.
- 2.02 Bidding Documents are made available for the sole purpose of obtaining Bids for completion of the Project and permission to download or distribution of the Bidding Documents does not confer a license or grant permission or authorization for any other use. Authorization to download documents, or other distribution, includes the right for plan holders to print documents solely for their use, and the use of their prospective Subcontractors and Suppliers, provided the plan holder pays all costs associated with printing or reproduction. Printed documents may not be re-sold under any circumstances.
- 2.03 Bidder may register as a plan holder and obtain complete sets of Bidding Documents in printed or electronic (digital) format (compact disk, USB, or direct transmittal) from the Issuing Office. Bidders may rely that sets of Bidding Documents obtained from the Issuing Office are complete, unless an omission is blatant. Registered plan holders will receive Addenda issued by Owner.
- 2.04 Plan rooms (including construction information subscription services, and electronic and virtual plan rooms) may distribute the Bidding Documents, or make them available for examination. Those prospective bidders that obtain an electronic (digital) copy of the Bidding Documents from a plan room are encouraged to register as plan holders from the Issuing Office. Owner is not responsible for omissions in Bidding Documents or other documents obtained from plan rooms, or for a Bidder's failure to obtain Addenda from a plan room.
- 2.05 *Electronic Documents*
- A. Bidding Documents will be made available as Electronic Documents. Bidding Documents will be provided in Adobe PDF (Portable Document Format) (.pdf). It is the intent of the Engineer and Owner that such Electronic Documents are to be exactly representative of the paper copies of the documents. However, because the Owner and Engineer cannot totally control the transmission and receipt of Electronic Documents nor the Contractor's means of reproduction of such documents, the Owner and Engineer cannot and do not guarantee that Electronic Documents and reproductions prepared from those versions are identical in every manner to the paper copies.

- B. The Bidder may use and rely upon complete sets of Electronic Documents of the Bidding Documents, described in Paragraph 2.05.A above. However, Bidder assumes all risks associated with differences arising from transmission/receipt of Electronic Documents versions of Bidding Documents and reproductions prepared from those versions and, further, assumes all risks, costs, and responsibility associated with use of the Electronic Documents versions to derive information that is not explicitly contained in printed paper versions of the documents, and for Bidder's reliance upon such derived information.
- C. After the Contract is awarded, the Owner will provide or direct the Engineer to provide for the use of the Contractor documents that were developed by Engineer as part of the Project design process, as Electronic Documents in native file formats.
 - 1. Electronic Documents that are available in native file format include:
 - a. None
 - 2. Release of such documents will be solely for the convenience of the Contractor. No such document is a Contract Document.
 - 3. The Contractor shall take appropriate measures to verify that any electronic/digital information provided in Electronic Documents is appropriate and adequate for the Contractor's specific purposes.
 - 4. In no case will the Contractor be entitled to additional compensation or time for completion due to any differences between the actual Contract Documents and any related document in native file format.

ARTICLE 3—QUALIFICATIONS OF BIDDERS

- 3.01 Bidders must complete a Bidder Status Form from the Iowa Department of Labor regarding the Contractor's resident status within the State of Iowa and submit that form with the bid. Failure to submit a fully completed Bidder Status Form with the bid may result in the bid being deemed nonresponsive and rejected.
- 3.02 To demonstrate Bidder's qualifications to perform the Work, after submitting its Bid and within five (5) days of Owner's request, Bidder must submit the following information:
 - A. Written evidence establishing its qualifications such as financial data, previous experience, and present commitments.
 - B. A written statement that Bidder is authorized to do business in the state where the Project is located, or a written certification that Bidder will obtain such authority prior to the Effective Date of the Contract.
 - C. Bidder's state or other contractor license number, if applicable.
 - D. Subcontractor and Supplier qualification information.
 - E. Other required information regarding qualifications.

- 3.03 A Bidder's failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.
- 3.04 No requirement in this Article 3 to submit information will prejudice the right of Owner to seek additional pertinent information regarding Bidder's qualifications.

ARTICLE 4—PRE-BID CONFERENCE

- 4.01 A pre-bid conference will not be held for this project.

ARTICLE 5—SITE AND OTHER AREAS; EXISTING SITE CONDITIONS; EXAMINATION OF SITE; OWNER'S SAFETY PROGRAM; OTHER WORK AT THE SITE

5.01 *Site Visit and Testing by Bidders*

- A. Bidder may visit the Site and conduct a thorough visual examination of the Site and adjacent areas.
- B. Bidders visiting the Site are required to arrange their own transportation to the Site.
- C. All access to the Site other than during a regularly scheduled Site Visit must be coordinated through the following Owner contact. Bidder must conduct the required Site visit during normal working hours.

Mr. Nate Edwards
Lead Generation
Indianola Municipal Utilities
515-961-9444 (office)
nedwards@indianolaiowa.gov

- D. Bidder is not required to conduct any subsurface testing, or exhaustive investigations of Site conditions.
- E. On request, and to the extent Owner has control over the Site, and schedule permitting, the Owner will provide Bidder general access to the Site to conduct such additional examinations, investigations, explorations, tests, and studies as Bidder deems necessary for preparing and submitting a successful Bid. Owner will not have any obligation to grant such access if doing so is not practical because of existing operations, security or safety concerns, or restraints on Owner's authority regarding the Site. Bidder is responsible for establishing access needed to reach specific selected test sites.

5.02 *Owner's Safety Program*

- A. Site visits and work at the Site may be governed by an Owner safety program. If an Owner safety program exists, it will be noted in the Supplementary Conditions.

5.03 *Other Work at the Site*

- A. Reference is made to Article 4 of the General Requirements for the identification of the general nature of other work of which Owner is aware (if any) that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) and relates to the Work contemplated by these Bidding Documents. If Owner is party to a written contract for such other work, then on request, Owner will provide to each Bidder access to examine such contracts (other than portions thereof related to price and other confidential matters), if any.

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ARTICLE 6—BIDDER'S REPRESENTATIONS AND CERTIFICATIONS

6.01 *Express Representations and Certifications in Bid Form, Agreement*

- A. The Bid Form that each Bidder will submit contains express representations regarding the Bidder's examination of Project documentation and preparation of the Bid, and certifications regarding lack of collusion or fraud in connection with the Bid. Bidder should review these representations and certifications, and assure that Bidder can make the representations and certifications in good faith, before executing and submitting its Bid.
- B. If Bidder is awarded the Contract, Bidder (as Contractor) will make similar express representations and certifications when it executes the Agreement.

ARTICLE 7—INTERPRETATIONS AND ADDENDA

- 7.01 Owner on its own initiative may issue Addenda to clarify, correct, supplement, or change the Bidding Documents.
- 7.02 Bidder shall submit all questions about the meaning or intent of the Bidding Documents via email to Jared Kline at jakline@peengr.com. Email message must include "Question regarding IMU East Iowa Circuit Switcher Replacement Project" in the subject line. Confirm the email has been received by calling Jared Kline at 515-989-3083.
- 7.03 Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda delivered to all registered plan holders. Questions received less than seven days prior to the date for opening of Bids may not be answered.
- 7.04 Only responses set forth in an Addendum will be binding. Oral and other interpretations or clarifications will be without legal effect. Responses to questions are not part of the Contract Documents unless set forth in an Addendum that expressly modifies or supplements the Contract Documents.

ARTICLE 8—BID SECURITY

- 8.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of **5** percent of Bidder's maximum Bid price (determined by adding the base bid and all alternates) and in the form prescribed in the NOTICE OF HEARING AND LETTING.
- 8.02 The Bid security of the apparent Successful Bidder will be retained until Owner awards the contract to such Bidder, and such Bidder has executed the Contract, furnished the required Contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be released. If the Successful Bidder fails to execute and deliver the Contract and furnish the required Contract security within 10 days after the Notice of Award, Owner may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited. Such forfeiture will be Owner's exclusive remedy if Bidder defaults.
- 8.03 The Bid security of other Bidders that Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of 7 days after the Effective Date of the

Contract or 61 days after the Bid opening, whereupon Bid security furnished by such Bidders will be released.

- 8.04 Bid security of other Bidders that Owner believes do not have a reasonable chance of receiving the award will be released within 7 days after the Bid opening.

ARTICLE 9—CONTRACT TIMES

- 9.01 The number of days within which, or the dates by which, the Work is to be (a) substantially completed and (b) ready for final payment, and (c) Milestones (if any) are to be achieved, are set forth in the Contract for Construction of a Small Project.

ARTICLE 10—SUBSTITUTE AND “OR EQUAL” ITEMS

- 10.01 The Contract for the Work, as awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration during the bidding and Contract award process of possible substitute or “or-equal” items. In cases in which the Contract allows the Contractor to request that Engineer authorize the use of a substitute or “or-equal” item of material or equipment, application for such acceptance may not be made to and will not be considered by Engineer until after the Effective Date of the Contract.
- 10.02 All prices that Bidder sets forth in its Bid will be based on the presumption that the Contractor will furnish the materials and equipment specified or described in the Bidding Documents, as supplemented by Addenda. Any assumptions regarding the possibility of post-Bid approvals of “or-equal” or substitution requests are made at Bidder’s sole risk.

ARTICLE 11—SUBCONTRACTORS, SUPPLIERS, AND OTHERS

- 11.01 The apparent Successful Bidder, and any other Bidder so requested, must submit to Owner a list of the Subcontractors or Suppliers proposed for any portion of the Work within five days after Bid opening:
- 11.02 If requested by Owner, such list must be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor or Supplier, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit an acceptable substitute, in which case apparent Successful Bidder will submit a substitute.
- 11.03 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to another Bidder who submits the Bid in the best interests of the project that proposes to use acceptable Subcontractors and Suppliers. Declining to make requested substitutions will not constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor or Supplier, so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to subsequent revocation of such acceptance as provided in Paragraph 7.04 of the Contract for Construction of a Small Project.

ARTICLE 12—PREPARATION OF BID

- 12.01 The Bid Form is included with the Bidding Documents.
- A. All blanks on the Bid Form must be completed in ink and the Bid Form signed in ink. Erasures or alterations must be initialed in ink by the person signing the Bid Form. A Bid price must be indicated for each section, Bid item, alternate, adjustment unit price item, and unit price item listed therein.
 - B. If the Bid Form expressly indicates that submitting pricing on a specific alternate item is optional, and Bidder elects to not furnish pricing for such optional alternate item, then Bidder may enter the words “No Bid” or “Not Applicable.”
- 12.02 If Bidder has obtained the Bidding Documents as Electronic Documents, then Bidder shall prepare its Bid on a paper copy of the Bid Form printed from the Electronic Documents version of the Bidding Documents. The printed copy of the Bid Form must be clearly legible, printed on 8½ inch by 11-inch paper and as closely identical in appearance to the Electronic Document version of the Bid Form as may be practical. The Owner reserves the right to accept Bid Forms which nominally vary in appearance from the original paper version of the Bid Form, providing that all required information and submittals are included with the Bid.
- 12.03 A Bid by a corporation must be executed in the corporate name by a corporate officer (whose title must appear under the signature), accompanied by evidence of authority to sign. The corporate address and state of incorporation must be shown.
- 12.04 A Bid by a partnership must be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership must be shown.
- 12.05 A Bid by a limited liability company must be executed in the name of the firm by a member or other authorized person and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm must be shown.
- 12.06 A Bid by an individual must show the Bidder’s name and official address.
- 12.07 A Bid by a joint venture must be executed by an authorized representative of each joint venturer in the manner indicated on the Bid Form. The joint venture must have been formally established prior to submittal of a Bid, and the official address of the joint venture must be shown.
- 12.08 All names must be printed in ink below the signatures.
- 12.09 The Bid must contain an acknowledgment of receipt of all Addenda, the numbers of which must be filled in on the Bid Form.
- 12.10 Postal and e-mail addresses and telephone number for communications regarding the Bid must be shown.
- 12.11 The Bid must contain evidence of Bidder’s authority to do business in the state where the Project is located, or Bidder must certify in writing that it will obtain such authority within the time for acceptance of Bids and attach such certification to the Bid.
- 12.12 If Bidder is required to be licensed to submit a Bid or perform the Work in the state where the Project is located, the Bid must contain evidence of Bidder’s licensure, or Bidder must certify in writing that it will obtain such licensure within the time for acceptance of Bids and attach such

certification to the Bid. Bidder's state contractor license number, if any, must also be shown on the Bid Form.

ARTICLE 13—BASIS OF BID

13.01 *Lump Sum*

- A. Bidders must submit a Bid on a lump sum basis for each item listed in the lump sum section of the Bid Form.

ARTICLE 14—SUBMITTAL OF BID

14.01 The Bidding Documents include one separate unbound copy of the Bid Form. The unbound copy of the Bid Form is to be completed and submitted with the Bid security, Bidder Status Form, and the other documents required to be submitted under the terms of Article 2 of the Bid Form. See Paragraph 12.02 for submittal of a Bid from Bid Documents that are received as Electronic Documents

14.02 A Bid must be received no later than the date and time prescribed and at the place indicated in the Advertisement or invitation to bid and must be enclosed in a plainly marked package with the Project title, and, if applicable, the designated portion of the Project for which the Bid is submitted, and the name and address of Bidder. This package shall be plainly labeled "BID ENCLOSED."

14.03 The sealed envelope containing the Bid and all required documents must be plainly marked with the notation "BID ENCLOSED".

14.04 The sealed envelope containing the bid security must be plainly marked with the notation "BID SECURITY ENCLOSED".

14.05 A Bid sent by mail shall be addressed to:

Indianola Municipal Utilities
Attn: Ms. Chris Longer
210 West 2nd Avenue
Indianola, IA 50125
515-961-9444

14.06 A bid sent by delivery service or hand delivered shall be delivered to:

Indianola Municipal Utilities
Attn: Ms. Chris Longer
210 West 2nd Avenue
Indianola, IA 50125
515-961-9444

14.07 Bids received after the date and time prescribed for the opening of bids, or not submitted at the correct location or in the designated manner, will not be accepted and will be returned to the Bidder unopened.

ARTICLE 15—MODIFICATION AND WITHDRAWAL OF BID

- 15.01 An unopened Bid may be withdrawn by an appropriate document duly executed in the same manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids. Upon receipt of such notice, the unopened Bid will be returned to the Bidder.
- 15.02 If a Bidder wishes to modify its Bid prior to Bid opening, Bidder must withdraw its initial Bid in the manner specified in Paragraph 15.01 and submit a new Bid prior to the date and time for the opening of Bids.
- 15.03 If within 24 hours after Bids are opened any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, the Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid, the Bidder will be disqualified from further bidding on the Work.

ARTICLE 16—OPENING OF BIDS

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

ARTICLE 17—BIDS TO REMAIN SUBJECT TO ACCEPTANCE

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

ARTICLE 18—EVALUATION OF BIDS AND AWARD OF CONTRACT

- 18.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner also reserves the right to waive all minor Bid informalities not involving price, time, or changes in the Work.
- 18.02 Owner will reject the Bid of any Bidder that Owner finds, after reasonable inquiry and evaluation, to not be responsible.
- 18.03 If Bidder purports to add terms or conditions to its Bid, takes exception to any provision of the Bidding Documents, or attempts to alter the contents of the Contract Documents for purposes of the Bid, whether in the Bid itself or in a separate communication to Owner or Engineer, then Owner will reject the Bid as nonresponsive.
- 18.04 If Owner awards the contract for the Work, such award will be to the responsible Bidder whose bid is considered to be in the best interest of the Owner.
- 18.05 *Evaluation of Bids*
 - A. In evaluating Bids, Owner will consider whether the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data, as may be requested in the Bid Form or prior to the Notice of Award.

- B. For the determination of the apparent successful Bidder when unit price bids are submitted, Bids will be compared on the basis of the total of the products of the estimated quantity of each item and unit price Bid for that item, together with any lump sum items.
- 18.06 In evaluating whether a Bidder is responsible, Owner will consider the qualifications of the Bidder and may consider the qualifications and experience of Subcontractors and Suppliers proposed for those portions of the Work for which the identity of Subcontractors and Suppliers must be submitted as provided in the Bidding Documents.
- 18.07 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders and any proposed Subcontractors or Suppliers.

ARTICLE 19—BONDS AND INSURANCE

- 19.01 Article 6 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner's requirements as to performance and payment bonds and insurance. When the Successful Bidder delivers the executed Agreement to Owner, it must be accompanied by required bonds and insurance documentation.

ARTICLE 20—SIGNING OF CONTRACT FOR CONSTRUCTION OF A SMALL PROJECT

- 20.01 When Owner issues a Notice of Award to the Successful Bidder, it will be accompanied by the unexecuted counterparts of the Contract for Construction of a Small Project along with the other Contract Documents as identified in the Contract for Construction of a Small Project. Within 10 days thereafter, Successful Bidder must execute and deliver the required number of counterparts of the Contract for Construction of a Small Project and any bonds and insurance documentation required to be delivered by the Contract Documents to Owner. Within 10 days thereafter, Owner will deliver one fully executed counterpart of the Contract for Construction of a Small Project to Successful Bidder, together with printed and/or electronic copies of the Contract Documents as stated in Paragraph 2.02 of the Contract for Construction of a Small Project.

ARTICLE 21—SALES AND USE TAXES

- 21.01 Owner is subject to state and local sales and use taxes on materials and equipment to be incorporated in the Work. **SAID TAXES SHALL BE INCLUDED IN THE BID.**

INDIANOLA MUNICIPAL UTILITIES
East Iowa Circuit Switcher Replacement Project - Installation
Section 00410 – Bid Form for Construction Contract

The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders and the Contract for Construction of a Small Project.

ARTICLE 1—OWNER AND BIDDER

1.01 This Bid is submitted to:

Indianola Municipal Utilities
210 West 2nd Avenue
Indianola, IA 50125

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

ARTICLE 2—ATTACHMENTS TO THIS BID

2.01 The following documents are submitted with and made a condition of this Bid:

- A. Evidence of authority to do business in the state of the Project; or a written covenant to obtain such authority within the time for acceptance of Bids;
- B. Contractor's license number as evidence of Bidder's State Contractor's License or a covenant by Bidder to obtain said license within the time for acceptance of Bids;
- C. A completed Bidder Status Form regarding the Contractor's resident status within the State of Iowa. A blank Bidder Status Form follows this Bid Form.

ARTICLE 3—BASIS OF BID—LUMP SUM BID AND UNIT PRICES

3.01 *Lump Sum Bids*

- A. Bidder (_____) will complete the Work in accordance with the Contract Documents for the following lump sum (stipulated) price(s):

1. Lump Sum Price (Single Lump Sum)

Lump Sum Bid Price	\$
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3.02 *Proposed Testing Contractor*

- A. Bidder proposes to utilize the following testing contractor:

INDIANOLA MUNICIPAL UTILITIES
East Iowa Circuit Switcher Replacement Project - Installation
Section 00410 – Bid Form for Construction Contract

ARTICLE 4—TIME OF COMPLETION

- 4.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Article 4 of the Contract for Construction of a Small Project (Section 00522) on or before the dates or within the number of calendar days indicated in the Contract.

ARTICLE 5—BIDDER'S ACKNOWLEDGEMENTS: ACCEPTANCE PERIOD, INSTRUCTIONS, AND RECEIPT OF ADDENDA

5.01 *Bid Acceptance Period*

- A. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

5.02 *Instructions to Bidders*

- A. Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security.

5.03 *Receipt of Addenda*

- A. Bidder hereby acknowledges receipt of the following Addenda:

Addendum Number	Addendum Date

ARTICLE 6—BIDDER'S REPRESENTATIONS AND CERTIFICATIONS

6.01 *Bidder's Representations*

- A. In submitting this Bid, Bidder represents the following:
1. Bidder has examined and carefully studied the Bidding Documents, including Addenda.
 2. If necessary, Bidder has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
 3. Bidder is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.
 4. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and

INDIANOLA MUNICIPAL UTILITIES
East Iowa Circuit Switcher Replacement Project - Installation
Section 00410 – Bid Form for Construction Contract

procedures of construction to be employed by Bidder, if selected as Contractor; and
(c) Bidder's (Contractor's) safety precautions and programs.

5. Based on the information and observations referred to in the preceding paragraph, Bidder agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
6. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
7. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
8. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
9. The submission of this Bid constitutes an incontrovertible representation by Bidder that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

6.02 Bidder's Certifications

A. The Bidder certifies the following:

1. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation.
2. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid.
3. Bidder has not solicited or induced any individual or entity to refrain from bidding.
4. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 6.02.A:
 - a. Corrupt practice means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process.
 - b. Fraudulent practice means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition.
 - c. Collusive practice means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels.

INDIANOLA MUNICIPAL UTILITIES
East Iowa Circuit Switcher Replacement Project - Installation
Section 00410 – Bid Form for Construction Contract

- d. Coercive practice means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

INDIANOLA MUNICIPAL UTILITIES
East Iowa Circuit Switcher Replacement Project - Installation
Section 00410 – Bid Form for Construction Contract

BIDDER hereby submits this Bid as set forth above:

Bidder:

(typed or printed name of organization)

By:

(individual's signature)

Name:

(typed or printed)

Title:

(typed or printed)

Date:

(typed or printed)

If Bidder is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.

Attest:

(individual's signature)

Name:

(typed or printed)

Title:

(typed or printed)

Date:

(typed or printed)

Address for giving notices:

Bidder's Contact:

Name:

(typed or printed)

Title:

(typed or printed)

Phone:

Email:

Address:

Bidder's Contractor License No.: (if applicable)

Bidder Status Form

To be completed by all bidders

Part A

Please answer “Yes” or “No” for each of the following:

- ☐ Yes ☐ No My company is authorized to transact business in Iowa.
(To help you determine if your company is authorized, please review the worksheet on the next page)
- ☐ Yes ☐ No My company has an office to transact business in Iowa.
- ☐ Yes ☐ No My company's office in Iowa is suitable for more than receiving mail, telephone calls, and e-mail.
- ☐ Yes ☐ No My company has been conducting business in Iowa for at least 3 years prior to the first request for bids on this project.
- ☐ Yes ☐ No My company is not a subsidiary of another business entity or my company is a subsidiary of another business entity that would qualify as a resident bidder in Iowa.

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

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

To be completed by resident bidders

Part B

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

Dates: ____/____/____ to ____/____/____ Address: _____

City, State, Zip: _____

Dates: ____/____/____ to ____/____/____ Address: _____

City, State, Zip: _____

Dates: ____/____/____ to ____/____/____ Address: _____

You may attach additional sheet(s) if needed. City, State, Zip: _____

To be completed by non-resident bidders

Part C

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

2. Does your company's home state or foreign country offer preferences to resident bidders, resident labor force preferences or any other type of preference to bidders or laborers? ☐ Yes ☐ No
3. If you answered "Yes" to question 2, identify each preference offered by your company's home state or foreign country and the appropriate legal citation.

You may attach additional sheet(s) if needed.

To be completed by all bidders

Part D

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

Firm Name: _____

Signature: _____ Date: _____

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

Worksheet: Authorization to Transact Business

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

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

BID BOND (PENAL SUM FORM)

Bidder Name: Address <i>(principal place of business)</i> :	Surety Name: Address <i>(principal place of business)</i> :
Owner Name: INDIANOLA MUNICIPAL UTILITIES Address <i>(principal place of business)</i> : 210 WEST 2ND AVE INDIANOLA, IA 50125	Bid Project <i>(name and location)</i> : EAST IOWA CIRCUIT SWITCHER REPLACEMENT PROJECT - INSTALLATION INDIANOLA, IOWA Bid Due Date: JANUARY 30, 2025
Bond Penal Sum: Date of Bond:	
Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth in this Bid Bond, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.	
Bidder	Surety
_____ <i>(Full formal name of Bidder)</i>	_____ <i>(Full formal name of Surety) (corporate seal)</i>
By: _____ <i>(Signature)</i>	By: _____ <i>(Signature) (Attach Power of Attorney)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____ <i>(Signature)</i>	Attest: _____ <i>(Signature)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Notes: (1) Note: Addresses are to be used for giving any required notice. (2) Provide execution by any additional parties, such as joint venturers, if necessary.	

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

CONTRACT FOR CONSTRUCTION OF A SMALL PROJECT

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This Contract is by and between INDIANOLA MUNICIPAL UTILITIES (Owner) and _____ (Contractor).

Owner and Contractor hereby agree as follows:

ARTICLE 1 - THE WORK

1.01 Work

- A. Work includes all labor, materials, equipment, services, and documentation necessary to construct the Project defined herein. The Work may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.
- B. The Contractor shall complete all Work as specified or indicated in the Contract Documents. The Project is generally described as follows:
 - 1. **EAST IOWA CIRCUIT SWITCHER REPLACEMENT PROJECT - INSTALLATION** which includes providing materials and labor to replace two existing 69kV circuit switchers with circuit breakers. This includes installation, testing and commissioning.
 - 2. The Site of the Work includes property, easements, and designated work areas described in greater detail in the Contract Documents but generally located at the Indianola Municipal Utilities East Iowa Substation.

ARTICLE 2 - CONTRACT DOCUMENTS

2.01 Intent of Contract Documents

- A. It is the intent of the Contract Documents to describe a functionally complete project. The Contract Documents do not indicate or describe all the Work required to complete the Project. Additional details required for the correct installation of selected products are to be provided by the Contractor and coordinated with the Owner and Engineer. This Contract supersedes prior negotiations, representations, and agreements, whether written or oral. The Contract Documents are complementary; what is required by one part of the Contract Documents is as binding as if required by other parts of the Contract Documents.
- B. During the performance of the Work and until final payment, Contractor and Owner shall submit all matters in question concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents to the Engineer. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work thereunder.

- C. Engineer will render a written clarification, interpretation, or decision on the issue submitted, or initiate a modification to the Contract Documents.
- D. Contractor, and its subcontractors and suppliers, shall not have or acquire any title to or ownership rights to any of the Drawings, Specifications, or other documents (including copies or electronic media editions) prepared by Engineer or its consultants.

2.02 Contract Documents Defined

A. The Contract Documents consist of the following documents:

1. This Contract.
2. Performance bond.
3. Payment bond.
4. Specifications listed in the Table of Contents.
5. Appendices listed in the Table of Contents.
6. Drawings as listed on the Drawing Sheet Indexes.
7. Addenda.
8. Exhibits to this Contract (enumerated as follows):
 - a. Contractor Bid.
9. The following which may be delivered or issued on or after the Effective Date of the Contract:
 - a. Work Change Directives (EJCDC C-940).
 - b. Change Orders (EJCDC C-941).
 - c. Field Orders.

ARTICLE 3 - ENGINEER

3.01 Engineer

- A. The Engineer for this Project is P&E Engineering Co. with offices at 500 SW 7th Street Suite 100, Des Moines, IA 50309.

ARTICLE 4 - CONTRACT TIMES

4.01 Contract Times

- A. Provided ground conditions allow, work is expected to begin on or about February 26th, 2026, the Work will be substantially completed on or before May 15, 2026, and completed and ready for final payment on or before June 15, 2026.

4.02 Liquidated Damages

- A. Liquidated damages will not be assessed.

4.03 Delays in Contractor's Progress

- A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Times and Contract Price. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor or their subcontractors or suppliers.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times.
- D. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor or Contractor's subcontractors or suppliers.

4.04 Progress Schedules

- A. Contractor shall develop a progress schedule and submit to the Engineer for review and comment before starting Work on the Site. The Contractor shall modify the schedule in accordance with the comments provided by the Engineer.
- B. The Contractor shall update and submit the progress schedule to the Engineer each month. The Owner may withhold payment if the Contractor fails to submit the schedule.

ARTICLE 5 - CONTRACT PRICE

5.01 Payment

- A. Owner shall pay Contractor in accordance with the Contract Documents, the lump sum amount of **\$[Contract Price]** for all Work.

ARTICLE 6 - BONDS AND INSURANCE

6.01 Bonds

- A. Before starting Work, Contractor shall furnish a performance bond and a payment bond from surety companies that are duly licensed or authorized to issue bonds in the required amounts in the jurisdiction in which the Project is located. Each bond shall be in an amount equal to the Contract Price, as security for the faithful performance and payment of all of Contractor's obligations under the Contract. These bonds shall remain in effect until the completion of the correction period specified in Paragraph 7.12 but, in any case, not less than one year after the date when final payment becomes due.

6.02 Insurance

- A. Before starting Work, Contractor shall furnish evidence of insurance from companies that are duly licensed or authorized in the jurisdiction in which the Project is located with a

minimum AM Best rating of A-VII or better. Contractor shall provide insurance in accordance with the following:

1. Contractor shall provide coverage for not less than the following amounts, or greater where required by Laws and Regulations:

- a. Workers' Compensation:

State:	<u>Statutory</u>
Employer's Liability:	
Bodily Injury, each Accident	\$ <u>1,000,000</u>
Bodily Injury By Disease, each Employee	\$ <u>1,000,000</u>
Bodily Injury/Disease Aggregate	\$ <u>1,000,000</u>

- b. Commercial General Liability:

General Aggregate	\$ <u>2,000,000</u>
Products - Completed Operations Aggregate	\$ <u>2,000,000</u>
Personal and Advertising Injury	\$ <u>1,000,000</u>
Each Occurrence (Bodily Injury and Property Damage)	\$ <u>1,000,000</u>

- c. Automobile Liability herein:

Bodily Injury:	
Each Person	\$ <u>500,000</u>
Each Accident	\$ <u>1,000,000</u>
Property Damage:	
Each Accident	\$ <u>500,000</u>
Combined Single Limit of:	\$ <u>1,000,000</u>

- d. Excess or Umbrella Liability:

Per Occurrence	\$ <u>3,000,000</u>
General Aggregate	\$ <u>3,000,000</u>

- e. Contractor's Pollution Liability:

Each Occurrence	\$ <u>1,000,000</u>
General Aggregate	\$ <u>1,000,000</u>

- B. All insurance policies required to be purchased and maintained will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 10 days prior written notice has been given to the insured and additional insured.
 - C. Automobile liability insurance provided by Contractor shall provide coverage against claims for damages because of bodily injury or death of any person or property damage arising out

of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy shall be written on an occurrence basis.

- D. Contractor's commercial general liability policy shall be written on a 1996 or later ISO commercial general liability occurrence form and include the following coverages and endorsements:
 - 1. Products and completed operations coverage maintained for three years after final payment;
 - 2. Blanket contractual liability coverage to the extent permitted by law;
 - 3. Broad form property damage coverage; and
 - 4. Severability of interest; underground, explosion, and collapse coverage; personal injury coverage.
- E. The Contractor's commercial general liability and automobile liability, umbrella or excess, and pollution liability policies shall include and list Owner and Engineer and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each as additional insureds; and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis.
 - 1. Additional insured endorsements will include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together). If Contractor demonstrates to Owner that the specified ISO endorsements are not commercially available, then Contractor may satisfy this requirement by providing equivalent endorsements.
 - 2. Contractor shall provide ISO Endorsement CG 20 32 07 04, "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent for design professional additional insureds.
- F. Umbrella or excess liability insurance shall be written over the underlying employer's liability, commercial general liability, and automobile liability insurance. Subject to industry-standard exclusions, the coverage afforded shall be procured on a "follow the form" basis as to each of the underlying policies. Contractor may demonstrate to Owner that Contractor has met the combined limits of insurance (underlying policy plus applicable umbrella) specified for employer's liability, commercial general liability, and automobile liability through the primary policies alone, or through combinations of the primary insurance policies and an umbrella or excess liability policy.
- G. The Contractor shall provide property insurance covering physical loss or damage during construction to structures, materials, fixtures, and equipment, including those materials, fixtures, or equipment in storage or transit.
- H. If Contractor has failed to obtain and maintain required insurance, Owner may exclude the Contractor from the Site, impose an appropriate set-off against payment, and exercise Owner's termination rights under Article 15.

ARTICLE 7 - CONTRACTOR'S RESPONSIBILITIES

7.01 Supervision and Superintendence

- A. 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, safety, and procedures of construction.
- B. Contractor shall assign a competent resident superintendent who is to be present at all times during the execution of the Work. This resident superintendent shall not be replaced without written notice to and approval by the Owner and Engineer except under extraordinary circumstances.
- C. Contractor shall at all times maintain good discipline and order at the Site.
- D. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, Monday through Friday.

7.02 Other Work at the Site

- A. In addition to and apart from the Work of the Contractor, other work may occur at or adjacent to the Site. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site.

7.03 Services, Materials, and Equipment

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.
- B. All materials and equipment incorporated into the Work shall be new, of good quality and shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable supplier, except as otherwise may be provided in the Contract Documents.

7.04 Subcontractors and Suppliers

- A. Contractor may retain subcontractors and suppliers for the performance of parts of the Work. Such subcontractors and suppliers must be acceptable to Owner.

7.05 Quality Management

- A. Contractor is fully responsible for managing quality to ensure Work is completed in accordance with the Contract Documents.

7.06 Licenses, Fees and Permits

- A. Contractor shall pay all license fees and royalties and assume all costs incident to performing the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others.

- B. Contractor shall obtain and pay for all construction permits and licenses unless otherwise provided in the Contract Documents.

7.07 Laws and Regulations; Taxes

- A. Contractor shall give all notices required by and shall comply with all local, state, and federal Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages if Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations.
- C. Contractor shall pay all applicable sales, consumer, use, and other similar taxes Contractor is required to pay in accordance with Laws and Regulations.

7.08 Record Documents

- A. Contractor shall maintain one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved shop drawings in a safe place at the Site. Contractor shall annotate them to show changes made during construction. Contractor shall deliver these record documents to Engineer upon completion of the Work.

7.09 Safety and Protection

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work.
- B. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:
 - 1. All persons on the Site or who may be affected by the Work;
 - 2. All the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
 - 3. Other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and underground facilities not designated for removal, relocation, or replacement in the course of construction.
- C. All damage, injury, or loss to any property caused, directly or indirectly, in whole or in part, by Contractor, or anyone for whose acts the Contractor may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Contract Documents or to the acts or omissions of Owner or Engineer and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor).
- D. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

- E. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor shall act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

7.10 Shop Drawings, Samples, and Other Submittals

- A. Contractor shall review and coordinate the shop drawing and samples with the requirements of the Work and the Contract Documents and shall verify all related field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information.
- B. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that submittal, and that Contractor approves the submittal.
- C. With each submittal, Contractor shall give Engineer specific written notice, in a communication separate from the submittal, of any variations that the shop drawing or sample may have from the requirements of the Contract Documents.
- D. Engineer will provide timely review of shop drawings and samples.
- E. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions or programs.
- F. Engineer's review and approval of a separate item does not indicate approval of the assembly in which the item functions.
- G. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of shop drawings and submit, as required, new samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.
- H. Shop drawings are not Contract Documents.

7.11 Warranties and Guarantees

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on Contractor's warranty and guarantee.

7.12 Correction Period

- A. If within one year after the date of substantial completion, any Work is found to be defective, or if the repair of any damages to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas used by Contractor as permitted by Laws and Regulations, is found to be defective, then Contractor shall promptly and without cost to Owner, correct such defective Work.

7.13 Indemnification

- A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any subcontractor, any supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts they may be liable.

ARTICLE 8 - OWNER'S RESPONSIBILITIES

8.01 Owner's Responsibilities

- A. Except as otherwise provided in the Contract Documents, Owner shall issue all communications directly to Contractor. Engineer will be responsive to questions from Owner and Contractor.
- B. Owner shall make payments to Contractor as provided in this Contract.
- C. Owner shall provide Site and easements required to construct the Project.
- D. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, unless stated elsewhere in the Contract Documents, Owner shall have sole authority and responsibility for such coordination.
- E. The Owner shall be responsible for performing inspections and tests required by applicable codes.
- F. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- G. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.
- H. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

9.01 Engineer's Status

- A. Engineer will be Owner's representative during construction. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in this Contract.

- B. Neither Engineer's authority or responsibility under this Article 9 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any subcontractor, any supplier, any other individual or entity, or to any surety for or employee or agent of any of them.
- C. Engineer will make visits to the Site at intervals appropriate to the various stages of construction. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work.
- D. Engineer has the authority to reject Work if Contractor fails to perform Work in accordance with the Contract Documents.
- E. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work.
- F. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

ARTICLE 10 - CHANGES IN THE WORK

10.01 Authority to Change the Work

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work.

10.02 Change Orders

- A. Owner and Contractor shall execute appropriate Change Orders covering:
 - 1. Changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;
 - 2. Changes in the Work which are: (a) ordered by Owner or (b) agreed to by the parties or (c) resulting from the Engineer's decision, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters; and
 - 3. Changes in the Contract Price or Contract Times or other changes which embody the substance of any final binding results under Article 12.
- B. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

ARTICLE 11 - DIFFERING SUBSURFACE OR PHYSICAL CONDITIONS

11.01 Differing Conditions Process

- A. If Contractor believes that any subsurface or physical condition including but not limited to utilities or other underground facilities that are uncovered or revealed at the Site either differs materially from that shown or indicated in the Contract Documents or is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in Work of the character provided for in the Contract Documents then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.
- B. After receipt of written notice, Engineer will promptly:
 - 1. Review the subsurface or physical condition in question;
 - 2. Determine necessity for Owner obtaining additional exploration or tests with respect to the condition;
 - 3. Determine whether the condition falls within the differing site condition as stated herein;
 - 4. Obtain any pertinent cost or schedule information from Contractor;
 - 5. Prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and
 - 6. Advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- C. After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.

ARTICLE 12 - CLAIMS AND DISPUTE RESOLUTION

12.01 Claims Process

- A. The party submitting a claim shall deliver it directly to the other party to the Contract and the Engineer promptly (but in no event later than 10 days) after the start of the event giving rise thereto.
- B. The party receiving a claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the claim through the exchange of information and direct negotiations. All actions taken on a claim shall be stated in writing and submitted to the other party.

- C. If efforts to resolve a claim are not successful, the party receiving the claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the claim within 45 days, the claim is deemed denied.
- D. If the dispute is not resolved to the satisfaction of the parties, Owner or Contractor shall give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction unless the Owner and Contractor both agree to an alternative dispute resolution process.

ARTICLE 13 - TESTS AND INSPECTIONS; CORRECTION OF DEFECTIVE WORK

13.01 Tests and Inspections

- A. Owner and Engineer will have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access.
- B. Contractor shall give Engineer timely notice of readiness of the Work for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests. Testing and commissioning services will be provided by Contractor as part of the Work.
- C. If any Work that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering shall be at Contractor's expense.

13.02 Defective Work

- A. Contractor shall ensure that the Work is not defective.
- B. Engineer has the authority to determine whether Work is defective, and to reject defective Work.
- C. Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.
- D. The Contractor shall promptly correct all such defective Work.
- E. When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.
- F. If the Work is defective or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated.

ARTICLE 14 - PAYMENTS TO CONTRACTOR

14.01 Progress Payments

- A. The Contractor shall prepare a schedule of values that will serve as the basis for progress payments. The schedule of values will be in a form of application for payment acceptable to Engineer. The unit price breakdown submitted with the bid will be used for unit price work. Break lump sum items into units that will allow for measurement of Work in progress.

14.02 Applications for Payments:

- A. Contractor shall submit an application for payment in a form acceptable to the Engineer, no more frequently than monthly, to Engineer. Applications for payment will be prepared and signed by Contractor. Contractor shall provide supporting documentation required by the Contract Documents. Payment will be paid for Work completed and materials stored on Owner premises as of the date of the application for payment.
- B. Beginning with the second application for payment, each application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior applications for payment.

14.03 Retainage

- A. The Owner shall retain 5% of each progress payment until the Work is substantially complete.

14.04 Review of Applications

- A. Within 10 days after receipt of each application for payment, the Engineer will either indicate in writing a recommendation for payment and present the application for payment to Owner or return the application for payment to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. The Contractor will make the necessary corrections and resubmit the application for payment.
- B. Engineer will recommend reductions in payment (set-offs) which, in the opinion of the Engineer, are necessary to protect Owner from loss because the Work is defective and requires correction or replacement.
- C. The Owner is entitled to impose set-offs against payment based on any claims that have been made against Owner on account of Contractor's conduct in the performance of the Work, incurred costs, losses, or damages on account of Contractor's conduct in the performance of the Work, or liquidated damages that have accrued as a result of Contractor's failure to complete the Work.

14.05 Contractor's Warranty of Title

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than seven days after the time of payment by Owner.

14.06 Substantial Completion

- A. The Contractor shall notify Owner and Engineer in writing that the Work is substantially complete and request the Engineer issue a certificate of substantial completion when Contractor considers the Work ready for its intended use. Contractor shall at the same time submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.
- B. Engineer will make an inspection of the Work with the Owner and Contractor to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor and Owner in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete or upon resolution of all reasons for non-issuance of a certificate identified in 14.06.B, Engineer will deliver to Owner a certificate

of substantial completion which shall fix the date of substantial completion and include a punch list of items to be completed or corrected before final payment.

14.07 Final Inspection

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

14.08 Final Payment

- A. Contractor may make application for final payment after Contractor has satisfactorily completed all Work defined in the Contract, including providing all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, annotated record documents and other documents.
- B. The final application for payment shall be accompanied (except as previously delivered) by:
 - 1. All documentation called for in the Contract Documents;
 - 2. Consent of the surety to final payment;
 - 3. Satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any liens or other title defects, or will so pass upon final payment;
 - 4. A list of all disputes that Contractor believes are unsettled; and
 - 5. Complete and legally effective releases or waivers (satisfactory to Owner) of all lien rights arising out of the Work, and of liens filed in connection with the Work.
- C. The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment.

14.09 Waiver of Claims

- A. The making of final payment will not constitute a waiver by Owner of claims or rights against Contractor.
- B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

15.01 Owner May Suspend Work

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 60 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension.

15.02 Owner May Terminate for Cause

- A. Contractor's failure to perform the Work in accordance with the Contract Documents or other failure to comply with a material term of the Contract Documents will constitute a default by Contractor and justify termination for cause.
- B. If Contractor defaults in its obligations, then after giving Contractor and any surety ten days written notice that Owner is considering a declaration that Contractor is in default and termination of the Contract, Owner may proceed to:
 - 1. Declare Contractor to be in default, and give Contractor and any surety notice that the Contract is terminated; and
 - 2. Enforce the rights available to Owner under any applicable performance bond.
- C. Owner may not proceed with termination of the Contract under Paragraph 15.02.B if Contractor within seven days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- D. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.
- E. In the case of a termination for cause, if the cost to complete the Work, including related claims, costs, losses, and damages, exceeds the unpaid contract balance, Contractor shall pay the difference to Owner.

15.03 Owner May Terminate for Convenience

- A. Upon seven days written notice to Contractor, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for, without duplication of any items:
 - 1. Completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
 - 2. Expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and
 - 3. Other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.
- B. Contractor shall not be paid on account of loss of anticipated overhead, profits, or revenue, or other economic loss arising out of or resulting from such termination.

15.04 Contractor May Stop Work or Terminate

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner, and provided Owner does not remedy such

suspension or failure within that time, either stop the Work until payment is received, or terminate the Contract and recover payment from the Owner.

ARTICLE 16 - CONTRACTOR'S REPRESENTATIONS

16.01 Contractor Representations

A. Contractor makes the following representations when entering into this Contract:

1. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.
2. Contractor has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
3. Contractor is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
4. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on:
 - a. The cost, progress, and performance of the Work;
 - b. The means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and
 - c. Contractor's safety precautions and programs.
5. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
6. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
7. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
8. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
9. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that, without exception, all prices in the Contract are premised upon performing and furnishing the Work required by the Contract Documents.

ARTICLE 17 - MISCELLANEOUS

17.01 Cumulative Remedies

- A. The duties and obligations imposed by this Contract and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

17.02 Limitation of Damages

- A. Neither Owner, Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

17.03 No Waiver

- A. A party's non-enforcement of any provision shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Contract.

17.04 Survival of Obligations

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract, as well as all continuing obligations indicated in the Contract, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

17.05 Contractor's Certifications

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract.

17.06 Controlling Law

- A. This Contract is to be governed by the law of the state in which the Project is located.

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

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

OWNER: INDIANOLA MUNICIPAL UTILITIES

CONTRACTOR:

By: _____

By: _____

Title: _____

Title: _____

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

Attest: _____

Attest: _____

Title: _____

Title: _____

Address for giving notices:

Address for giving notices:

210 WEST 2ND AVE

INDIANOLA, IA 50125

License No.: _____
(where applicable)

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

NOTE TO USER: Use in those states or other jurisdictions where applicable or required.

PERFORMANCE BOND

Contractor Name: [Full formal name of Contractor] Address <i>(principal place of business)</i> : [Address of Contractor's principal place of business]	Surety Name: [Full formal name of Surety] Address <i>(principal place of business)</i> : [Address of Surety's principal place of business]
Owner Name: INDIANOLA MUNICIPAL UTILITIES Mailing address <i>(principal place of business)</i> : 210 WEST 2ND AVE INDIANOLA, IA 50125	Contract Description <i>(name and location)</i> : EAST IOWA CIRCUIT SWITCHER REPLACEMENT PROJECT - INSTALLATION INDIANOLA, IOWA Contract Price: [Amount from Contract] Effective Date of Contract: [Date from Contract]
Bond Bond Amount: [Amount] Date of Bond: [Date] <i>(Date of Bond cannot be earlier than Effective Date of Contract)</i> Modifications to this Bond form: ☐ None ☐ See Paragraph 16	
Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Performance Bond, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.	
Contractor as Principal	Surety
_____ <i>(Full formal name of Contractor)</i>	_____ <i>(Full formal name of Surety) (corporate seal)</i>
By: _____ <i>(Signature)</i>	By: _____ <i>(Signature)(Attach Power of Attorney)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____ <i>(Signature)</i>	Attest: _____ <i>(Signature)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
<i>Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.</i>	

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.
2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond will arise after:
 - 3.1. The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice may indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 will be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement does not waive the Owner's right, if any, subsequently to declare a Contractor Default;
 - 3.2. The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and
 - 3.3. The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.
4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 does not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.
5. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:
 - 5.1. Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;
 - 5.2. Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;
 - 5.3. Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or
 - 5.4. Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:

- 5.4.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
 - 5.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.
- 6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner refuses the payment, or the Surety has denied liability, in whole or in part, without further notice, the Owner shall be entitled to enforce any remedy available to the Owner.
- 7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner will not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety will not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:
 - 7.1. the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
 - 7.2. additional legal, design professional, and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and
 - 7.3. liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.
- 8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.
- 9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price will not be reduced or set off on account of any such unrelated obligations. No right of action will accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.
- 10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
- 11. Any proceeding, legal or equitable, under this Bond must be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and must be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit will be applicable.
- 12. Notice to the Surety, the Owner, or the Contractor must be mailed or delivered to the address shown on the page on which their signature appears.
- 13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement will be deemed deleted therefrom and provisions conforming to such

statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.

14. Definitions

- 14.1. *Balance of the Contract Price*—The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.
 - 14.2. *Construction Contract*—The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.
 - 14.3. *Contractor Default*—Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.
 - 14.4. *Owner Default*—Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
 - 14.5. *Contract Documents*—All the documents that comprise the agreement between the Owner and Contractor.
15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.
16. Modifications to this Bond are as follows: **[Describe modification or enter “None”]**

PAYMENT BOND

Contractor Name: Address <i>(principal place of business)</i> :	Surety Name: Address <i>(principal place of business)</i> :
Owner Name: INDIANOLA MUNICIPAL UTILITIES Mailing address <i>(principal place of business)</i> : 210 WEST 2ND AVE INDIANOLA, IA 50125	Contract Description <i>(name and location)</i> : EAST IOWA CIRCUIT SWITCHER REPLACEMENT PROJECT - INSTALLATION INDIANOLA, IOWA Contract Price: Effective Date of Contract:
Bond Bond Amount: Date of Bond: <i>(Date of Bond cannot be earlier than Effective Date of Contract)</i> Modifications to this Bond form: ☒ None ☐ See Paragraph 18	
Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Payment Bond, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.	
Contractor as Principal	Surety
<i>(Full formal name of Contractor)</i>	<i>(Full formal name of Surety) (corporate seal)</i>
By: _____ <i>(Signature)</i>	By: _____ <i>(Signature)(Attach Power of Attorney)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____ <i>(Signature)</i>	Attest: _____ <i>(Signature)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
<i>Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.</i>	

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.
2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond will arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.
4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.
5. The Surety's obligations to a Claimant under this Bond will arise after the following:
 - 5.1. Claimants who do not have a direct contract with the Contractor
 - 5.1.1. have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
 - 5.1.2. have sent a Claim to the Surety (at the address described in Paragraph 13).
 - 5.2. Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).
6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.
7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:
 - 7.1. Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
 - 7.2. Pay or arrange for payment of any undisputed amounts.
 - 7.3. The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 will not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

8. The Surety's total obligation will not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond will be credited for any payments made in good faith by the Surety.
9. Amounts owed by the Owner to the Contractor under the Construction Contract will be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfying obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.
10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.
11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
12. No suit or action will be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit will be applicable.
13. Notice and Claims to the Surety, the Owner, or the Contractor must be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, will be sufficient compliance as of the date received.
14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement will be deemed deleted here from and provisions conforming to such statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.
15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.
16. Definitions
 - 16.1. *Claim*—A written statement by the Claimant including at a minimum:
 - 16.1.1. The name of the Claimant;
 - 16.1.2. The name of the person for whom the labor was done, or materials or equipment furnished;
 - 16.1.3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
 - 16.1.4. A brief description of the labor, materials, or equipment furnished;

- 16.1.5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
 - 16.1.6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
 - 16.1.7. The total amount of previous payments received by the Claimant; and
 - 16.1.8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.
- 16.2. *Claimant*—An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond is to include without limitation in the terms of "labor, materials, or equipment" that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.
- 16.3. *Construction Contract*—The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.
- 16.4. *Owner Default*—Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
- 16.5. *Contract Documents*—All the documents that comprise the agreement between the Owner and Contractor.
17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.
18. Modifications to this Bond are as follows: **NONE**

INDIANOLA MUNICIPAL UTILITIES
East Iowa Circuit Switcher Replacement Project - Installation
Section 01000 – General Requirements

1.0 PROJECT DESCRIPTION

- 1.1 The Project includes providing labor and material to replace two existing 69kV circuit switchers at the East Iowa Substation with circuit breakers. The East Iowa Substation is located within the City of Indianola, Iowa. This project includes furnishing miscellaneous materials, labor, tools, equipment, supervision, and other items necessary to complete the entire project defined in these bid documents.
- 1.2 In addition to the removal of the circuit switchers and installation of the new circuit breakers, the Project includes testing necessary to assure correct operation of the new circuit breakers and associated protection schemes, modify data concentrator programming using configuration files provided by Engineer, verifying that the impacted scanned points are correctly provided to the SCADA system data concentrator, and that control points operate correctly.

2.0 SCOPE OF WORK

- 2.1 The drawings, bill of materials, and specifications listed in the Index in Section 00000 are intended to cover all materials, equipment, and work necessary to complete this project as described, except for those items that are specifically listed as being supplied or completed by Owner or by others, and except for problems with the existing substation schematics and wiring diagrams.
- 2.2 The existing substation drawings are not complete and have not been updated to include modifications. Contractor shall include time to thoroughly trace all circuits impacted by the replacement project and document deviations from project drawings. Deviations shall be provided to Engineer for resolution. Change orders will be considered for major deviations. Change orders will not be considered for minor changes only requiring jumpers within the same or adjacent switchgear cubicles.
- 2.3 Work generally consists of the following major items of work but is not limited to the items listed below. Refer to drawings for plans and details and definition of the work to the extent possible.
- a. Contractor shall schedule preconstruction meeting within two weeks after receiving Notice to Proceed. Meeting will be held at Indianola Municipal Utilities. A virtual preconstruction meeting will not be acceptable.
 - b. Furnish labor and materials as required.
 - c. At East Iowa Substation:
 - 1) Order materials
 - 2) Preschedule outages per Section 01001 Sequence of work.
 - 3) Trace existing circuits, verify accuracy of existing schematics and wiring diagrams, resolve discrepancies with Engineer.
 - 4) Remove existing circuit switchers CK601 and CK602.

INDIANOLA MUNICIPAL UTILITIES

East Iowa Circuit Switcher Replacement Project - Installation

Section 01000 – General Requirements

- 5) Remove existing control and AC and DC supply cables between CK601 and CK602 and the switchgear buildings. Cut conduits off and cap conduits below grade, seal ends in switchgear building.
 - 6) Remove existing buswork between the main east-west bus and the existing circuit switchers as shown on the plan and section view drawings.
 - 7) Install disconnect switches on existing steel structures.
 - 8) Install support insulators on the existing steel structures as shown on the plan and section view drawings.
 - 9) Connect disconnect switches to existing east-west buswork and new circuit breakers.
 - 10) Connect circuit breakers to voltage and current transformers and power transformers as shown on the plan and section view drawings.
 - 11) Install 3" PVC conduits between CK601 control cabinet and East Iowa #1 (east building) and between CK602 control cabinet and East Iowa #2 (west building).
 - 12) Bond circuit breakers and disconnect operators to existing ground grid.
 - 13) Install permanent CT shorting jumpers in the CK601 and CK602 control cabinets.
 - 14) Install and connect new control and AC and DC supply cables to CK601 and CK602 as shown on the drawings and cable schedule.
 - 15) Install 12 pole GE EB25B12 terminal block in East Iowa #1 Station Power cubicle.
 - 16) Modify cubicle wiring in the East Iowa #1 Intertie, Station Power and Auxiliary cubicles and Relay Panel #1.
 - 17) Install 12 pole GE EB25B12 terminal block in East Iowa #2 relay panel.
 - 18) Modify wiring in East Iowa #2 relay panel and intertie cubicle.
 - 19) Install settings in SEL annunciator panels in CK601 and CK602 control cabinets. Annunciator settings will be provided by Engineer in .rdb format.
 - 20) Test and commission new equipment and circuits that are impacted by changes. This includes CK601, CK602, CK230, and CK240 trip and close circuits.
 - 21) Apply configuration changes to existing RTUs using configuration files provided by Engineer.
 - 22) Assist as needed during testing to verify SCADA system additions and deletions
- 2.4 Contractor shall test phasing before beginning removal work and confirm phasing immediately after reenergizing each transformer and before supplying load.
- 2.5 Contractor will furnish all equipment and materials required to complete the Work except for the circuit breakers and disconnect switches.
- 2.6 Contractor shall provide as-built data for the system as installed as described in Section 17839. This shall include red-line notations on drawings to show all field changes that affect the schematic or wiring diagrams.
- 3.0 DRAWINGS
- 3.1 Drawings showing device and wiring removals and additions are listed on the coversheet for the drawing volume. Panel layout and schematic diagrams are provided with bid

INDIANOLA MUNICIPAL UTILITIES
East Iowa Circuit Switcher Replacement Project - Installation
Section 01000 – General Requirements

drawings and point to point wiring diagrams, where available, will be provided with final construction drawings.

- 3.2 Drawings are as complete and accurate as possible, however, they are original to the substation and have not been updated as modifications have been made. The set is incomplete and numerous discrepancies exist. Neither Owner nor Engineer guarantees complete accuracy. See paragraph 2.2 above.
- 3.3 Point to point wiring diagrams are listed on the drawing coversheets.
- 3.4 Schematic and wiring diagrams do not exist for internal wiring and cable connections to the RTU at East Iowa. Contractor will be required to remove and install connections to existing terminal blocks in the RTU. The only SCADA points changes envisioned are to replace the existing CK601 and CK602 status contact and add an alarm from the SEL annunciator panels in CK601 and CK602. All time required to investigate and formulate these connections must be included in the Contractor bid and no scope changes will be made to cover this work.

4.0 WORK BY OWNER OR BY OTHERS

- 4.1 The following work is not a part of this Contract and will be performed by the Owner or others.
 - a. Circuit breakers and disconnect switches have been purchased by Owner and will be stored in a warehouse adjacent to the East Iowa substation.

5.0 SCHEDULE

- 5.1 Contractor may begin work at any time after receiving a Notice to Proceed and when ground conditions permit. The Notice to Proceed is expected to be issued on or about February 26th, 2026. Provided the Notice to Proceed is issued on February 26th and ground conditions permit below grade work starting March 9th, 2026, work must be substantially completed by May 15th, 2026; with Final Completion by June 15th, 2026. Completion date will be adjusted should either of these conditions not be met.
- 5.2 Contractor will cooperate with Owner in scheduling equipment outages. Substantial switching is required to remove load from the transformers and Owner will need to make crews available. A minimum of 1 week's notice is required.
- 5.3 For purposes of preparing their bid, Contractor shall assume work will be permitted normal business days, Monday through Friday, between 7:00 AM and 5:00 PM at East Iowa Substation. Requests by Contractor for Owner to permit Contractor personnel that are qualified to work in an energized substation to work outside of these stated hours will be considered by Owner. Owner retains the sole right to grant or deny permission to work outside of the stated hours.

INDIANOLA MUNICIPAL UTILITIES
East Iowa Circuit Switcher Replacement Project - Installation
Section 01000 – General Requirements

- 5.4 Contractor shall manage and schedule the Work to permit returning the transformers to service as soon as possible and to minimize the length of time needed to complete the project. Owner also strongly desires that both transformers be available before summer.

6.0 SEQUENCE OF WORK

- 6.1 A suggested sequence is shown in Section 01001. Final Work sequence is subject to adjustment with agreement of the Contractor and Owner. The Contractor must provide a general work plan for approval by the Owner prior to starting work on the Project.

7.0 NEW MATERIALS

- 7.1 Contractor is to furnish and pay for all materials necessary for the completion of the Work. All materials supplied by Contractor shall be new and unused and shall be as specified in the Bill of Materials and project drawings.
- 7.2 Contractor may arrange with Owner to store materials to be provided by Contractor at the work location.

8.0 REMOVED MATERIALS

- 8.1 The contractor will be responsible for disposing of all removed materials; Owner does not intend to retain any removed items for future use.

9.0 SITE AND OTHER AREAS

- 9.1 Contractor shall confine his operations to the substation and control room sites described in the drawings.

10.0 ENERGIZED EQUIPMENT

- 10.1 Contractor acknowledges that Contractor and Contractor's employees are aware of the potentially dangerous nature of electricity and are qualified to work on and in the vicinity of secondary (600 volt class), medium voltage (15kV class), and high voltage (69kV class) electric facilities that have not been de-energized. The existing facilities shall remain in operation and energized at all times except when outages are scheduled. Contractor shall take all necessary steps to protect the existing facilities and maintain them so that they do not interfere with or pose a danger to either the new construction, Contractor activities, Contractor's Personnel, Owner's workers, or the general public. The cost of such actions shall be included in Contractor's prices as no separate payment will be made.
- 10.2 In the event the work cannot be performed safely, Contractor shall notify Owner and Engineer, and shall cease work until arrangements are made to proceed safely.

INDIANOLA MUNICIPAL UTILITIES
East Iowa Circuit Switcher Replacement Project - Installation
Section 01000 – General Requirements

- 10.3 Contractor shall ensure that only qualified persons are permitted to work on or near energized facilities, and that all applicable standards and regulations are followed, including observance of approach boundaries as specified in NFPA 70E-2021.
- 10.4 As much as possible, bus differential and breaker failure relaying at both substations shall remain in service during the project. Contractor shall provide prior notice to Owner and Engineer if these protection systems will need to be removed from service.

11.0 OUTAGES

- 11.1 All equipment outages required for the execution of the Work shall be kept to the shortest time duration possible.
- 11.2 Any and all required equipment outages shall be scheduled and coordinated with Owner in advance of the expected date of the outage.
- 11.3 The outages listed below are anticipated to be necessary for the work. The contractor is encouraged to suggest revisions to this list with the overall goals of reducing the quantity of outages needed or reducing outage durations while maintaining personnel safety and security of electrical service to Owner's customers.

11.4 East Iowa Substation

- a. An outage of the 69kV transformer bus at East Iowa Substation will be provided to remove CK601, install disconnect switches CK601A and CK602A, and temporarily reconnect existing CK602 to allow Transformer 2 to be used while work on CK601 progresses.
- b. After work on CK601 is completed, CK602 can be removed and replaced while Transformer 1 remains in service.

12.0 SWITCHING

- 12.1 All switching required for the prosecution of the Work will be performed by Owner.

13.0 TESTING

- 13.1 Contractor shall retain a subcontractor that is routinely engaged in the testing of utility protection and control systems to test existing circuits that are impacted by the project and the new circuit breakers.
- 13.2 The existing substation drawings have not been updated as modifications have been made and are out of date.

INDIANOLA MUNICIPAL UTILITIES
East Iowa Circuit Switcher Replacement Project - Installation
Section 01000 – General Requirements

- 13.3 Scott Steinmetz of Steinmetz Corporation has significant recent experience in the East Iowa Substation and is Owner's preferred testing contractor. Steinmetz Corporation's phone number is available upon request from Engineer. Proposed testing contractor must be submitted with the bid. Should owner require an alternate testing subcontractor, a change order will be issued in the amount of the cost increase occasioned by change.
- 13.4 Alternate testing contractors must be approved prior to beginning work. See testing subcontractor qualification information in Sections 1.4 and 1.5 of Specification 337233.19.

END OF SECTION 01000

INDIANOLA MUNICIPAL UTILITIES
East Iowa Circuit Switcher Replacement Project - Installation
Section 01001 – Sequence of Work

1.0 **SCHEDULE**

- 1.1 Ground conditions permitting, contractor may begin work at any time after receiving a Notice to Proceed and receipt of materials. The start date will be mutually agreed to by the Owner and Contractor.
- 1.2 Contractor may begin work at any time after receiving a Notice to Proceed and when ground conditions permit. The Notice to Proceed is expected to be issued on or about February 26th, 2026. Provided the Notice to Proceed is issued on February 26th and ground conditions permit below grade work starting March 9th, 2026, work must be substantially completed by May 15th, 2026; with Final Completion by June 15th, 2026. Completion date will be adjusted should either of these conditions not be met.
- 1.3 Owner has purchased the circuit breakers and disconnect switches separately. The circuit breakers are expected to arrive in January 2026.
- 1.4 Contractor shall order materials to provide for delivery of all materials before the start date.

2.0 **SEQUENCE OF WORK**

- 2.1 Contractor shall schedule a preconstruction meeting within two weeks of receipt of Notice to Proceed. Meeting shall be held in Indianola. Virtual participation is not acceptable.
- 2.2 Contractor shall perform as much prework and preparatory work as possible before beginning of outages to minimize the duration of each equipment outage. This work shall include thoroughly tracing all circuits that will be modified, comparing findings to the existing schematics and wiring diagrams and resolving discrepancies with the Engineer prior to proceeding.
- 2.2 A preliminary suggested sequence is provided below. The actual Work sequence is subject to change depending upon needs of the Contractor and the Owner. The Contractor must submit a general work plan for approval by the Owner prior to starting work on the Project. Revisions to the sequence suggested by Contractor will be considered by Owner. Owner retains the sole right to approve the work sequence.
 - A. Contractor receives Notice to Proceed.
 - B. Contractor orders materials.
 - C. Contractor schedules preconstruction meeting within two weeks of receipt of Notice to Proceed. Meeting shall be held at Indianola Municipal Utilities. Virtual participation is not acceptable.

INDIANOLA MUNICIPAL UTILITIES
East Iowa Circuit Switcher Replacement Project - Installation
Section 01001 – Sequence of Work

- D. Contractor traces all circuits impacted by the replacement project and document deviations from project drawings. Contractor provides deviations to Engineer for resolution.
- E. Contractor receives materials.
- F. Owner switches customer load normally served from East Iowa Substation to Westside Substation.
- G. Owner deenergizes 69kV transformer bus at East Iowa.
- H. During transformer bus outage on the East Iowa transformer bus: modify existing structures. Install disconnect switches CK601A and CK602A. Temporarily reconnect CK602 to CK602A to allow transformer T2 to temporarily serve load while CK601 is replaced.
- I. Owner energizes East Iowa transformer bus, Owner switches load to East Iowa Transformer 2.
- J. Contractor removes CK601, removes upper portion of existing foundation, pours new foundation. Proposed curing times will be discussed during the preconstruction meeting. While Owner desires shorter curing times, curing times shorter than 1 week will generally not be permissible. See Specification 033000.
- K. While concrete cures, contractor installs conduit to East Iowa #1 (east) building and makes wiring changes in East Iowa #1 building.
- L. After concrete has cured, install circuit breaker, add conduit riser, bond circuit breaker to ground grid, pull control cables, terminate control cables, test circuit breaker and modified circuits.
- M. Owner energizes CK601 and Transformer 1, switches load from Transformer 2 to Transformer 1.
- N. Contractor removes CK602, removes upper portion of existing foundation, pours new foundation.
- O. While concrete cures, contractor installs conduit to East Iowa #2 (west) building and makes wiring changes in East Iowa #2 building.
- P. After concrete has cured, install circuit breaker, add conduit riser, bond circuit breaker to ground grid, pull control cables, terminate control cables, test circuit breaker and modified circuits.
- Q. Energize CK602 and Transformer 2.

END OF SECTION 01001

INDIANOLA MUNICIPAL UTILITIES

East Iowa Circuit Switcher Replacement Project - Installation

Section 16910 – Materials

1.0 PROJECT MATERIAL

- 1.1 Project Materials quantities and catalog numbers are called out in the construction drawings. This section provides a guide to help Contractor find all material items included in the construction drawings.
- 1.2 This section is provided solely as a reference and guide for Contractor. All material required to complete the Work as described by the Contract Documents is to be provided by Contractor, regardless of whether or not any specific items are included in the drawings or this specification section.
- 1.3 Materials required are summarized below.

Drawing	Item	Comments
S101	Anchor bolts Rebar Concrete Granular subbase	
S201	Conduit and conduit fittings	
S400	Insulators Insulator supports 336 kcmil ACSR Bus support Terminals Tees Transition plates Conduit and conduit fittings Bare 4/0 Copper (grounding) Cadweld connectors Bronze ground clamps	
CKR-472	1-pole branch circuit breakers	Acceptable to reuse existing if they are single pole 20 or 30A and condition is good.
CKR-472	2-pole branch circuit breakers	Acceptable to reuse existing if condition is good.
E-15	PVC conduit and PVC LBs for building conduit entrance	
R401B & R402B	Burndy narrow tongue lug for #6 Cu Heat shrink tubing	For DC supply
R-471	20A Single pole branch breakers for existing AC panelboards	See notes regarding reusing existing circuit breakers.
R-500A	Control Cables	Minimum size of S601A and S602A is #16AWG. Contractor may choose a larger size for convenience. C1A and C1B are not necessary if existing wiring can be traced.
3-628-8	12 Pole terminal block (GE EB25B12)	
3-628-29	12 Pole terminal block (GE EB25B12)	

END OF SECTION 16910

INDIANOLA MUNICIPAL UTILITIES
East Iowa Circuit Switcher Replacement Project - Installation
Section 017839 – General Requirements

SECTION 017839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for project record documents, including the following:
 - 1. Record Drawings.
 - 2. Record Product Data.
 - 3. Miscellaneous record submittals.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.
 - 1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Accurately record information in an acceptable drawing technique.
 - c. Record data as soon as possible after obtaining it.
 - 2. Content: Types of items requiring marking include, but are not limited to, the following:
 - a. Dimensional changes to Drawings.
 - b. Revisions to details shown on Drawings.
 - c. Locations and depths of underground utilities.
 - d. Revisions to routing of conduits.
 - e. Revisions to electrical circuitry.
 - f. Actual equipment locations.

INDIANOLA MUNICIPAL UTILITIES
East Iowa Circuit Switcher Replacement Project - Installation
Section 017839 – General Requirements

- g. Changes made by Change Order or Work Change Directive.
 - h. Changes made following Engineer's written orders.
 - i. Details not on the original Contract Drawings.
 - j. Discrepancies in the original Contract Drawings.
 - k. Field records for variable and concealed conditions.
 - l. Record information on the Work that is shown only schematically.
- 3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
 - 4. Mark record sets with red-colored pencil or pen. Use other colors to distinguish between changes for different categories of the Work at same location.
 - 5. Mark important additional information that was either shown schematically or omitted from original Drawings.
 - 6. Note Construction Change Directive numbers, Change Order numbers, and similar identification, where applicable.

2.2 TESTING DOCUMENTATION

- A. Testing Documentation: Provide test logs and test reports as described in Section 337233.19.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project.
- B. Maintenance of Record Documents: Store record documents in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Engineer's reference during normal working hours.
- C. Existing substation drawings are incomplete and have inconsistencies. Contractor shall document errors discovered while tracing wiring and their resolution on the red-line drawing sets.

END OF SECTION 017839

INDIANOLA MUNICIPAL UTILITIES REPLACE BREAKERS CK601 & CK602

SECTION 033000 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes, for the following:
 - 1. Footings.
 - 2. Foundation walls.
 - 3. Slabs-on-grade.
 - 4. Suspended slabs.
 - 5. Concrete toppings.
 - 6. Building frame members.
 - 7. Building walls.

1.3 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume; subject to compliance with requirements.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
 - 1. Indicate amounts of mixing water to be withheld for later addition at Project site.
- C. Steel Reinforcement Shop Drawings: Placing drawings that detail fabrication, bending, and placement. Include bar sizes, lengths, material, grade, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, splices and laps, mechanical connections, tie spacing, hoop spacing, and supports for concrete reinforcement.

- D. Construction Joint Layout: Indicate proposed construction joints required to construct the structure.
 - 1. Location of construction joints is subject to approval of the Engineer.
- E. Samples: For waterstops.
- F. Material Certificates: For each of the following, signed by manufacturers:
 - 1. Cementitious materials.
 - 2. Admixtures.
 - 3. Form materials and form-release agents.
 - 4. Steel reinforcement and accessories.
 - 5. Waterstops.
 - 6. Curing compounds.
 - 7. Semirigid joint filler.
 - 8. Joint-filler strips.
- G. Material Test Reports: For the following, from a qualified testing agency, indicating compliance with requirements:
 - 1. Aggregates. Include service record data indicating absence of deleterious expansion of concrete due to alkali aggregate reactivity.
- H. Field quality-control reports.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified installer who employs on Project personnel qualified as ACI-certified Flatwork Technician and Finisher and a supervisor who is an ACI-certified Concrete Flatwork Technician.
- B. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
 - 1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."
- C. Testing Agency Qualifications: An independent agency, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.
 - 1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.
 - 2. Personnel performing laboratory tests shall be ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician - Grade I. Testing Agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician - Grade II.

- D. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from single source, and obtain admixtures from single source from single manufacturer.
- E. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
 - 1. ACI 301, "Specifications for Structural Concrete," Sections 1 through 5.
 - 2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."
- F. Preinstallation Conference: Conduct conference at Project site.
 - 1. Before submitting design mixtures, review concrete design mixture and examine procedures for ensuring quality of concrete materials. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:
 - a. Contractor's superintendent.
 - b. Independent testing agency responsible for concrete design mixtures.
 - c. Ready-mix concrete manufacturer.
 - d. Concrete subcontractor.
 - 2. Review special inspection and testing and inspecting agency procedures for field quality control, concrete finishes and finishing, cold- and hot-weather concreting procedures, curing procedures, construction contraction and isolation joints, and joint-filler strips, semirigid joint fillers, anchor rod and anchorage device installation tolerances, steel reinforcement installation, and concrete protection.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage.
- B. Waterstops: Store waterstops under cover to protect from moisture, sunlight, dirt, oil, and other contaminants.

PART 2 - PRODUCTS

2.1 FORM-FACING MATERIALS

- A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
 - 1. Plywood, metal, or other approved panel materials.
 - 2. Exterior-grade plywood panels, suitable for concrete forms, complying with DOC PS 1, and as follows:
 - a. High-density overlay, Class 1 or better.

- b. Medium-density overlay, Class 1 or better; mill-release agent treated and edge sealed.
 - c. Structural 1, B-B or better; mill oiled and edge sealed.
 - d. B-B (Concrete Form), Class 1 or better; mill oiled and edge sealed.
- B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.
- C. Forms for Cylindrical Columns, Pedestals, and Supports: Metal, glass-fiber-reinforced plastic, paper, or fiber tubes that will produce surfaces with gradual or abrupt irregularities not exceeding specified formwork surface class. Provide units with sufficient wall thickness to resist plastic concrete loads without detrimental deformation.
- D. Void Forms: Biodegradable paper surface, treated for moisture resistance, structurally sufficient to support weight of plastic concrete and other superimposed loads.
- E. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch, minimum.
- F. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.
 - 1. Formulate form-release agent with rust inhibitor for steel form-facing materials.
- G. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.
 - 1. Furnish units that will leave no corrodible metal closer than 1 inch to the plane of exposed concrete surface.
 - 2. Furnish ties that, when removed, will leave holes no larger than 1 inch in diameter in concrete surface.
 - 3. Furnish ties with integral water-barrier plates to walls indicated to receive dampproofing or waterproofing.

2.2 STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.

2.3 GLASS FIBER REINFORCED POLYMER REINFORCEMENT

- A. Reinforcing Bars: ASTM D 7957 and ASTM D 8505

2.4 REINFORCEMENT ACCESSORIES

- A. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel

wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice," of greater compressive strength than concrete and as follows:

1. For concrete surfaces exposed to view where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected steel wire or CRSI Class 2 stainless-steel bar supports.
2. For epoxy-coated reinforcement, use epoxy-coated or other dielectric-polymer-coated wire bar supports.
3. For zinc-coated reinforcement, use galvanized wire or dielectric-polymer-coated wire bar supports.

2.5 CONCRETE MATERIALS

- A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:
1. Portland Cement: ASTM C 150, Type I or Type II. Supplement with the following:
 - a. Fly Ash: ASTM C 618, Class F or C.
 - b. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.
- B. Silica Fume: ASTM C 1240, amorphous silica.
- C. Normal-Weight Aggregates: ASTM C 33, coarse aggregate or better, graded. Provide aggregates from a single source.
1. Maximum Coarse-Aggregate Size: 3/4 inch nominal.
 2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement. Only natural material will be allowed.
- D. Water: ASTM C 94/C 94M and potable.

2.6 ADMIXTURES

- A. Air-Entraining Admixture: ASTM C 260.

2.7 WATERSTOPS

- A. Chemically Resistant Flexible Waterstops: Linear low density polyethylene waterstops, for embedding in concrete to prevent passage of fluids through joints; resistant to oils, solvents, and chemicals. Factory fabricate corners, intersections, and directional changes.
1. Products: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. WESTEC Barrier Technologies, Inc.; 600 Series TPE-R.
 2. Profile: Ribbed with center bulb.
 3. Dimensions: 6 inches by 3/8 inch thick; nontapered.

2.8 CURING MATERIALS

- A. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. when dry.
- B. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- C. Water: Potable.
- D. Clear, Waterborne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A.
 - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. BASF Construction Chemicals - Building Systems; Kure 1315.
 - b. ChemMasters; Polyseal WB.
 - c. Conspec by Dayton Superior; Sealcure 1315 WB.
 - d. Edoco by Dayton Superior; Cureseal 1315 WB.
 - e. Euclid Chemical Company (The), an RPM company; Super Diamond Clear VOX; LusterSeal WB 300.
 - f. Kaufman Products, Inc.; Sure Cure 25 Emulsion.
 - g. Lambert Corporation; UV Safe Seal.
 - h. L&M Construction Chemicals, Inc.; Lumiseal WB Plus.
 - i. Meadows, W. R., Inc.; Vocomp-30.
 - j. Metalcrete Industries; Metcure 30.
 - k. Right Pointe; Right Sheen WB30.
 - l. Symons by Dayton Superior; Cure & Seal 31 Percent E.
 - m. Vexcon Chemicals, Inc.; Vexcon Starseal 1315.

2.9 RELATED MATERIALS

- A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber.
- B. Semirigid Joint Filler: Two-component, semirigid, 100 percent solids, epoxy resin with a Type A shore durometer hardness of 80 per ASTM D 2240.

2.10 CONCRETE MIXTURES, GENERAL

- A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.
 - 1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.
- B. Cementitious Materials: Use fly ash, pozzolan, ground granulated blast-furnace slag, and silica fume as needed to reduce the total amount of portland cement, which would otherwise be used, by not less than 40 percent.

- C. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.

2.11 CONCRETE MIXTURES FOR BUILDING ELEMENTS

- A. Footings: Proportion normal-weight concrete mixture as follows:

1. Minimum Compressive Strength: 4500 psi at 28 days.
2. Maximum Water-Cementitious Materials Ratio: 0.45.
3. Slump Limit: 3 inches, plus or minus 1 inch.
4. Air Content: 6.0 percent, plus or minus 1.5 percent at point of delivery for 3/4-inch nominal maximum aggregate size.

- B. Slabs-on-Grade: Proportion normal-weight concrete mixture as follows:

1. Minimum Compressive Strength: 4500 psi at 28 days.
2. Maximum Water-Cementitious Materials Ratio: 0.45.
3. Slump Limit: 3 inches, plus or minus 1 inch.
4. Air Content: 6.0 percent, plus or minus 1.5 percent at point of delivery for 3/4-inch nominal maximum aggregate size.

2.12 FABRICATING REINFORCEMENT

- A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

2.13 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M, and furnish batch ticket information.

1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

- B. Project-Site Mixing: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M. Mix concrete materials in appropriate drum-type batch machine mixer.

1. For mixer capacity of 1 cu. yd. or smaller, continue mixing at least 1-1/2 minutes, but not more than 5 minutes after ingredients are in mixer, before any part of batch is released.
2. For mixer capacity larger than 1 cu. yd., increase mixing time by 15 seconds for each additional 1 cu. yd.
3. Provide batch ticket for each batch discharged and used in the Work, indicating Project identification name and number, date, mixture type, mixture time, quantity, and amount of water added. Record approximate location of final deposit in structure.

PART 3 - EXECUTION

3.1 FORMWORK

- A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.
- B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.
- C. Limit concrete surface irregularities, designated by ACI 347 as abrupt or gradual, as follows:
 - 1. Class A, 1/8 inch for smooth-formed finished surfaces.
- D. Construct forms tight enough to prevent loss of concrete mortar.
- E. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.
 - 1. Install keyways, reglets, recesses, and the like, for easy removal.
 - 2. Do not use rust-stained steel form-facing material.
- F. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.
- G. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.
- H. Chamfer exterior corners and edges of permanently exposed concrete.
- I. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.
- J. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.
- K. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.
- L. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

3.2 EMBEDDED ITEMS

- A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
 - 1. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC's "Code of Standard Practice for Steel Buildings and Bridges."
 - 2. Install reglets to receive waterproofing and to receive through-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, shelf angles, and other conditions.
 - 3. Install dovetail anchor slots in concrete structures as indicated.

3.3 REMOVING AND REUSING FORMS

- A. General: Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F for 24 hours after placing concrete. Concrete has to be hard enough to not be damaged by form-removal operations and curing and protection operations need to be maintained.
 - 1. Leave formwork for beam soffits, joists, slabs, and other structural elements that supports weight of concrete in place until concrete has achieved its 28-day design compressive strength.
 - 2. Remove forms only if shores have been arranged to permit removal of forms without loosening or disturbing shores.
- B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.
- C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Engineer.

3.4 STEEL AND GLASS FIBER REINFORCED POLYMER REINFORCEMENT

- A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that would reduce bond to concrete.
- C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.
 - 1. Weld reinforcing bars according to AWS D1.4/D 1.4M, where indicated.
- D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

3.5 WATERSTOPS

- A. Flexible Waterstops: Install in construction joints and at other joints indicated to form a continuous diaphragm. Install in longest lengths practicable. Support and protect exposed waterstops during progress of the Work. Field fabricate joints in waterstops according to manufacturer's written instructions.

3.6 CONCRETE PLACEMENT

- A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.
- B. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Engineer.
- C. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301.
 - 1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.
- D. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.
 - 1. Deposit concrete in horizontal layers of depth to not exceed formwork design pressures and in a manner to avoid inclined construction joints.
 - 2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
 - 3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.
- E. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
 - 1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
 - 2. Maintain reinforcement in position on chairs during concrete placement.
 - 3. Screed slab surfaces with a straightedge and strike off to correct elevations.
 - 4. Slope surfaces uniformly to drains where required.
 - 5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.

- F. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
1. When average high and low temperature is expected to fall below 40 deg F for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
 2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
 3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.
- G. Hot-Weather Placement: Comply with ACI 301 and as follows:
1. Maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
 2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

3.7 FINISHING FORMED SURFACES

- A. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
1. Apply to concrete surfaces exposed to public view.
- B. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.

3.8 FINISHING FLOORS AND SLABS

- A. General: Comply with ACI 302.1R recommendations for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.
- B. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, ramps, and elsewhere as indicated.
1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Engineer before application.

3.9 MISCELLANEOUS CONCRETE ITEMS

- A. Equipment Bases and Foundations: Provide machine and equipment bases and foundations as shown on Drawings. Set anchor bolts for machines and equipment at correct elevations, complying with diagrams or templates from manufacturer furnishing machines and equipment.

3.10 CONCRETE PROTECTING AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.
- B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- C. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for the remainder of the curing period.
- D. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.
- E. Cure concrete according to ACI 308.1, by one or a combination of the following methods:
 - 1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
 - a. Water.
 - b. Continuous water-fog spray.
 - c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.
 - 2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
 - a. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive floor coverings.
 - b. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive penetrating liquid floor treatments.
 - c. Cure concrete surfaces to receive floor coverings with either a moisture-retaining cover or a curing compound that the manufacturer certifies will not interfere with bonding of floor covering used on Project.

3. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

3.11 JOINT FILLING

- A. Prepare, clean, and install joint filler according to manufacturer's written instructions.
 1. Defer joint filling until concrete has aged at least one month(s). Do not fill joints until construction traffic has permanently ceased.
- B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joint clean and dry.
- C. Install semirigid joint filler full depth in saw-cut joints and at least 2 inches deep in formed joints. Overfill joint and trim joint filler flush with top of joint after hardening.

3.12 FIELD QUALITY CONTROL

- A. Testing and Inspecting: Engage a qualified testing and inspecting agency to perform tests and inspections and to submit reports.
- B. Inspections:
 1. Steel reinforcement placement.
 2. Steel reinforcement welding.
 3. Headed bolts and studs.
 4. Verification of use of required design mixture.
 5. Concrete placement, including conveying and depositing.
 6. Curing procedures and maintenance of curing temperature.
 7. Verification of concrete strength before removal of shores and forms from beams and slabs.
- C. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:
 1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd., but less than 25 cu. yd., plus one set for each additional 50 cu. yd. or fraction thereof.
 2. Testing Frequency: Obtain at least one composite sample for each 100 cu. yd. or fraction thereof of each concrete mixture placed each day.
 - a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.

3. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
4. Air Content: ASTM C 231, pressure method, for normal-weight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
5. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F and below and when 80 deg F and above, and one test for each composite sample.
6. Unit Weight: ASTM C 138, fresh unit weight of structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
7. Compression Test Specimens: ASTM C 31/C 31M.
 - a. Cast and laboratory cure two sets of two standard cylinder specimens for each composite sample.
 - b. Cast and field cure two sets of two standard cylinder specimens for each composite sample.
8. Compressive-Strength Tests: ASTM C 39/C 39M; test one set of two laboratory-cured specimens at 7 days and one set of two specimens at 28 days.
 - a. Test one set of two field-cured specimens at 7 days and one set of two specimens at 28 days.
 - b. A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.
9. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.
10. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.
11. Test results shall be reported in writing to Engineer, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
12. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Engineer but will not be used as sole basis for approval or rejection of concrete.
13. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Engineer. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42/C 42M or by other methods as directed by Engineer.
14. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

15. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.

END OF SECTION 033000

**INDIANOLA MUNICIPAL UTILITIES
EAST IOWA CIRCUIT SWITCHER REPLACEMENT PROJECT - INSTALLATION**

SECTION 337210 –SUBSTATION STRUCTURAL STEEL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes methods and materials for substation steel structures.

1.3 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with UL 467 for grounding and bonding materials and equipment.
- C. Welders shall be experienced and certified in the methods for welding structural steel. Welder shall be certified by passing the tests described by the American Welding Society (AWS). Welders shall have been tested within the past twelve months. Submit one copy of the welder's qualification records to Engineer.

PART 2 - PRODUCTS

2.1 STEEL STRUCTURES

- A. Steel structures will be furnished by Contractor.
- B. Structure details provided on drawing E1091-S500.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Steel structures shall be assembled in accordance with manufacturer's detail and erection drawings with bolts, washers, and nuts furnished by the fabricator. Structure details provided on drawing E1091-S500.

- B. Steel structures shall not be installed on concrete foundations until the following conditions are met.
 - 1. Structure without overhead conductor attachments: Foundations at 70% of 28 day strength.
 - 2. Structure with overhead conductor attachments (dead ends and shield masts): Foundations at 70% of 28 day strength for setting of structures and 100% of 28 day strength before attachment of conductors.
- C. Slings or other equipment used for picking up members or portions of structures shall be of such material or protected in such a way as not to cut into corners or edges of the members, damage the finish, or distort or overstress members when heavy lifts are made. Members or portions of structures shall be raised in such a manner that no dragging on the ground or against portions of structures already erected will occur.
- D. When portions of structures are being ground assembled, such assembly shall be on surfaces or blocking which will provide support to prevent distortion or damage to structure steel. All bolts shall be installed in all connections of ground assembled portions of the structures before erection.
- E. Mud, dirt, oil, and other foreign matter shall be removed from the members before erection, with special attention given to cleaning the contact surfaces at joints before bolting up bolts and nuts.
- F. Switch and bus support stands shall be erected perfectly plumb. All other structures, including all vertical members thereof, shall be erected plumb within a tolerance of 1/8 inch in 10 feet. Horizontal members shall be level. Extreme care shall be taken to establish and maintain the true geometric shape of each portion of structure assembled.
- G. Repairs:
 - 1. Pieces bent in handling may be used if they can be straightened without structurally damaging the metal. If bent pieces cannot be repaired to the satisfaction of Engineer, they shall be replaced. Steel which Contractor has damaged shall be repaired or replaced at Contractor's expense.
 - 2. This shall include minor deficiencies in fabrication, shipping and handling damage, and areas or field drilling or modifications. Small areas shall be repaired with zinc-rich paint which when dry shall have a minimum of 94% zinc dust by weight. When directed by the Engineer, larger areas shall be repaired with zinc-rich solders using the method recommended by the manufacturer. For further details see ASTM A70-80 Standard Practice for Repair of Damaged Hot-dip Galvanizing Coatings.
 - 3. If blind or partially blind holes are encountered after members have been properly assembled and erected by approved methods, Owner shall be notified, and redrilling or other corrections shall be undertaken under his direction.
 - 4. Contractor shall notify Engineer of shop errors and damaged steel. Engineer will decide the manner in which corrections shall be made. Shop errors and damaged steel shall be corrected as determined by Engineer.

3.2 BOLTS

- A. Wedge washers, lock washers, and space washers shall be used as specified on the steel erection drawings washers, and nuts furnished by the fabricator.
- B. The correct length of bolts shall be used for all connections in accordance with the bolt assembly lists furnished on the drawings. Bolts shall be normally installed so that the nuts are on the inside or on the top of the structure members. Only wrenches of proper size which will not deform the nuts or damage the surface finish are to be used. Torque wrenches shall be used to tighten bolts. These wrenches shall be calibrated so as not to exceed the torque limits recommended by the steel supplier.
- C. After bolt tightening is completed on an erected structure, Engineer will make spot-checks on bolts. Contractor shall provide the calibrated torque wrenches and the necessary platforms, equipment, and personnel to conduct the random checks.

END OF SECTION 337210

INDIANOLA MUNICIPAL UTILITIES EAST IOWA CIRCUIT SWITCHER REPLACEMENT PROJECT - INSTALLATION

SECTION 337226 –SUBSTATION BUS AND EQUIPMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes methods and materials for the follow:
 - 1. Rigid and wire bus.
 - 2. Disconnect switches.
 - 3. Insulators.
 - 4. Equipment identification.

1.3 QUALITY ASSURANCE

- A. Welders shall be experienced and certified in the methods for welding structural steel. Welder shall be certified by passing the tests described by the American Welding Society (AWS). Welders shall have been tested within the past twelve months. Submit one copy of the welder's qualification records to Engineer.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. The following items will be furnished by the Owner or others. Furnish the following:
 - 1. Disconnect Switches
- B. Contractor will furnish the following:
 - 1. ACSR wire
 - 2. Insulators
 - 3. Surge arresters.
 - 4. Connectors for tubing and wire connections.
- C. Equipment Identification
 - 1. Furnish equipment identification numbers as indicated on the drawings.

2. Furnish all hardware including beam grips, pipe clamps for installation of the identification numbers. Mounting hardware shall be stainless steel or aluminum.

PART 3 - EXECUTION

3.1 RIGID BUS AND WIRE JUMPERS

A. Rigid Bus:

1. Contractor shall unpack, clean, and check for damage all aluminum bus tubing immediately upon receipt of material. Contractor shall remove all packaging materials which might damage the bus finish and store the bus in a manner that the finish will be protected. Contractor shall inform Engineer if there is any damage to the bus when it is received. Contractor will be responsible for cost of replacing any bus which is damaged after it is received.
2. The aluminum bus will usually be furnished in several lengths to accommodate assembly and erection operations and allow a minimum of cutting and jointing. Contractor shall plan his work to best facilitate the lengths of bus that are available, making every effort to minimize cutting and splicing of the bus.
3. Tubular bus bends shall be made using a hydraulic bender and shall be free of kinks or surface damage. Tubular bus bends shall be made with an inside radii of 5 to 7 times the nominal pipe size unless the drawings specify otherwise.
4. All bus tubing shall be carefully handled and erected to provide a bus system without dents, abrasions, discolorations or structural or surface damage. The completed bus installation shall be completely smooth to the touch.
5. Horizontal aluminum tubular buswork shall have ACSR or all aluminum cable installed inside them for the full length of the bus for vibration dampening. Dampening cable shall be installed in buses for lengths greater than 10'-0". Damping cable sizes to be used are shown on the drawings.
6. One-fourth (1/4)-inch drain holes shall be drilled in all bus risers, bends, A-frames, and horizontal runs at the lowest practical point to drain moisture accumulation. All holes shall be reamed to remove sharp edges.
7. End caps shall be installed in all open ends of tubing.
8. Splices shall be used only where shown on the drawings or as approved by Engineer.

B. Wire Cables:

1. Copper, all aluminum, and ACSR buswork and jumpers are to be installed as shown on the drawings.
2. Jumpers and buses shall be smoothly formed and adjacent runs shall be similarly and symmetrically shaped to provide a uniform and pleasing appearance throughout.
3. Stranded conductor shall be installed without twists or kinks and shall be handled to avoid abrasions or other damage.
4. No splices shall be allowed in jumpers of overhead stain buses.
5. All strain busses and incoming line conductors shall be sagged in accordance with the values supplied.

C. Bolted Connectors:

1. Connectors shall be installed in accordance with the manufacturer's instructions.
2. Torque wrenches shall be used to tighten all bolted current carrying joints. Wrenches shall be calibrated so as not to exceed the torque limits of the bolts as established by the fitting manufacturers. Bolts shall be tightened simultaneously throughout each connection, being careful to avoid ovaling or flattening of the tubing or wire conductor by overtightening.

D. Compression Connectors:

1. Connectors shall be installed in accordance with the manufacturer's instructions.
2. Install compression fittings with tools and dies recommended by the manufacture.
3. Electrical filler compound shall be used inside each barrel prior to being compressed. Compression fittings shall be pressed so that they are straight when installed.

E. Welded Connectors:

1. Connectors shall be installed in accordance with the manufacturer's instructions
2. All welds shall be performed by a welder qualified per AWS B-3.0 or AAQW-25.
3. Welding process shall utilize either the Tungsten Inert-Gas arc process (TIG) or Metal Inert-Gas process (MIG) for all aluminum welding.
4. All welding shall be done in strict conformance with the latest edition of the American Welding society and the Aluminum Association.
5. The shielding gas use for aluminum welding shall be commercially prepared and shall be certified as being welding grade and purity. The gas shall be one of one hundred percent (100%) argon or a mixture of seventy-five percent (75%) helium and twenty-five percent (25%) argon for MIG and one hundred percent (100%) argon for TIG.
6. Type ER4043 filler metal shall be used for all aluminum welding, except for those isolated cases where the base material is other than type 356, 6061 or 6063 normally used in the electrical power industry. Only the highest quality filler material shall be used. Filler material shall be stored in a dry, warm, uniform temperature storage area. The original carton shall not be opened until the filler material is actually needed for welding.
7. Filler rod for the TIG process shall be kept in a container that is kept closed except during rod removal.
8. Filler metal wire for the MIG process shall be uniform in diameter, of a suitable temper, free from slivers, scratches, inclusions; kinks, waves, or sharp bends, and spooled so that it is free to unwind without restrictions. Proper pitch and cast shall also be maintained to prevent wandering of the wire as it emerges from the electrode gun. Wire left on the machine overnight shall be sealed to prevent contamination. Wire left on the machine that is not scheduled for use in less than twenty-four (24) hours shall be returned to its original carton and tightly sealed.
9. All surfaces to be welded shall be thoroughly cleaned to remove all moisture, grease, oil, grit, and other foreign material prior to welding. Cleaning shall be performed as close to the actual welding time as possible while still allowing sufficient time for complete drying of cleaning solvents. Surface shall then be wiped just prior to welding with a clean cloth, dry cloth to remove solvent scum and any moisture that may be present.
10. The edges of the material to be welded together shall be prepared in conformance with the data tables and joint design drawings of the Welding Handbook RP69 of the American Welding Society.
11. If deemed necessary, the Owner shall select welds which shall be radiographically tested by a certified approved testing laboratory. The results, comments, and recommendations shall be sent to the Owner. All testing costs shall be borne by the Contractor.

F. Bolted Connections:

1. For aluminum to aluminum and aluminum to plated bronze connections coat contact surfaces with a liberal coat of Electrical Joint Compound (Burndy Pentrox A or approved equal). Vigorously clean all aluminum contact surfaces with a stiff stainless steel wire brush to remove oxides. Do not wire brush plated contact surfaces. Install bolting hardware finger tight.
2. For aluminum to bare bronze connections coat contact surfaces with a liberal coat of Electrical Joint Compound. Vigorously clean all contact surfaces with a stiff stainless steel wire brush to remove oxides. Install a bronze to aluminum bi-metallic transition plate between the surfaces. Install bolting hardware finger tight.
3. For bare bronze to bare bronze connections vigorously clean all contact surfaces with a stiff stainless steel wire brush to remove oxides.
4. Stainless steel hardware shall be installed for all aluminum to aluminum and aluminum to bronze connections. Bolted connections shall be made with the proper size and length hex head bolts, flat washer, lock washers, Belleville washers, and nuts as shown on the drawings. Stainless steel hardware shall be type 316.
5. Silicon bronze hardware shall be installed for all bronze to bronze connections. Bronze hardware shall be high strength silicon bronze.
6. Torque wrenches shall be used to tighten all bolted current carrying joints. Alternately (criss-cross) and evenly tighten bolts to proper torque. Only wrenches of proper size which will not deform the nuts, or damage the surface finish are to be used. These wrenches shall be calibrated to provide the torques indicated on the drawings. Bolts shall not extend beyond the nut more than one-half (1/2) bolt diameter.
7. After the bus installation is completed, Engineer may make spot-checks on bolts. Contractor shall provide the calibrated torque wrenches and the necessary platforms, equipment, and personnel to conduct the random checks. Contractor will be required to tighten bolts found not to be tight, and in case the number so found is 5 percent or greater of the total bolts checked, Contractor will be required to go over the entire bus system and check or tighten all bolts.

3.2 DISCONNECT SWITCHES

- A. Contractor shall uncrate, assemble, install and adjust all group operated switches and operating mechanisms in accordance with the manufacturer's instructions.
- B. Whenever possible, the switch poles are to be assembled on the ground and installed as a complete pole unit. Preliminary adjustments are to be made on the ground. Final adjustments shall be made after the pole units have been installed in their final location and after the buswork has been connected to the switch terminals.
- C. Group operated switches shall be installed such that the blades open and close simultaneously. Switches will be operated and adjusted until approved by the Owner.
- D. Switch operating handles and operating platforms shall be arranged and aligned to ensure proper switching from the platform.
- E. Install mechanical interlocks, electrical interlocks, or key interlocks as rewired by the drawings

- F. All switch operating mechanisms are to be assembled and installed as shown on the operating mechanism assembly drawings and as described in the manufacturer's instructions. The interphase bar between the pole units is to be installed and adjusted accurately. Any set screws and pins shall not be set until the final adjustment of the switch has been completed and approved by Owner.
- G. Install switch position auxiliary switches as required by the drawings.

3.3 INSULATORS

- A. Insulators shall be cleaned of oil, dirt, paper, tape, or other foreign materials. Any insulator having its surface glaze damaged in any way shall not be installed.
- B. Install all miscellaneous hardware including bus support fittings, bolts, nuts, lock washers, shackles, etc.

3.4 EQUIPMENT IDENTIFICATION

- A. Install equipment identification numbers. Location of the number shall not affect operation of the equipment.
- B. Identification numbers for switches, instrument transformers, and phase designations shall be mounted directly to the steel structures.
- C. Identification numbers for power transformers, circuit breakers, and other large devices shall be installed on the control cabinet door.
- D. Engineer will provide a list of devices and the identification numbers. Engineer will designate location of identification numbers for special devices.

END OF SECTION 337226

INDIANOLA MUNICIPAL UTILITIES EAST IOWA CIRCUIT SWITCHER REPLACEMENT PROJECT - INSTALLATION

SECTION 337233.13 – SUBSTATION RELAYS & CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Section 33 Substation Control Wiring.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Relays and control devices
 - 2. Communication devices.
 - 3. Special cables.
 - 4. Accessories.

1.3 DEFINITIONS

- A.

ANSI	American National Standards Institute
ASTM	American Society for the Testing of Materials
IEEE	Institute of Electrical and Electronics Engineers
NEMA	National Electric Manufacturers Association
NFPA	National Fire Protection Association
UL	Underwriters Laboratories

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.

PART 2 - PRODUCTS

2.1 RELAYS AND DEVICES

- A. No relays are scheduled for replacement.

2.2 ACCESSORIES

- A. Fuses Holder & Fuses: Provide manufacturer's slugs for neutral pole of heater AC supply as shown on drawings. Fuses are expected to be Mersen type OT (Class K5).
- B. Branch Circuit Breakers: AC and DC supply to circuit breakers will be supplied by branch breakers is existing panelboards. Existing branch circuit breakers are expected to be suitable for reuse. If circuit breakers are not suitable for reuse, replace with manufacturer, model number, and ratings shall be as indicated on the drawings.
- C. Terminal Blocks: Supply GE EB25B12 12 pole terminal blocks in locations shown on drawings.
- D. Device Labels: Device labels shall be adhesive labels and have 3/8" (minimum) black lettering on a white background.
- E. Required wiring accessories: Furnish accessories such as cleats, mounting straps, wire ties, insulated ring lugs and mounting hardware as required.

2.3 INSTRUCTION MANUALS

- A. All equipment instruction literature shall be bound in a heavy duty "D" ring binder. Additional binders, numbered consecutively, may be used if required. The front of each binder shall be labeled with the Owner, Contractor, and Project name. Each binder shall include a Table of Contents.

PART 3 - EXECUTION

3.1 GENERAL

- A. All work performed on the relay panels shall be performed by personnel experienced in working with energized utility style relay and control panels.
- B. The existing relay panels shall remain energized as much as possible subject to Contractor work procedures. When modifying the existing relay panels, Contractor shall take all necessary precautions to prevent inadvertent operation of relays or controls.
- C. All work performed on the relay panels shall be performed by personnel experienced in working with energized utility-style relay and control panels. Experience in utility transmission and distribution substations is required. Personnel must be fully capable of reading, interpreting, and completing wiring in accordance with prepared wiring diagrams.

3.2 NEW PANELS

- A. Mount panels as indicated on the drawings.
- B. Properly secure each panel to the building structure and to adjacent panels.

- C. Ground all panels.

3.3 EXISTING PANELS

- A. The existing relay panels shall remain energized as much as possible subject to Contractor work procedures. When modifying the existing relay panels, Contractor shall take all necessary precautions to prevent inadvertent operation of relays or controls
- B. All panel cuts and scratches shall be touched up with paint to match the existing panel finish.
- C. Blank Covers: Install blank cover plates over openings for future devices or removed.
- D. New devices shall be mounted parallel and perpendicular to existing devices
- E. All panel cuts and scratches shall be touched up with paint to match the existing panel finish.
- F. Contractor shall be responsible for maintaining an as-constructed set of drawings which will be provided to the Engineer at the completion of the project.
- G. At locations described on the drawings, Contractor shall install blank cover plates over openings that result from removal of some devices. Coverplates shall be constructed from 11-gauge steel and painted to match the existing panels.
- H. Required wiring accessories: Furnish accessories such as cleats, mounting straps, wire ties, insulated ring lugs and mounting hardware as required.

3.4 WIRING

- A. All wiring shall be 600 volt, crosslink polyethylene insulated, Type SIS, No. 12 (65 strand) switchboard wire.
- B. All wiring to Electroswitch rotary switches and lockout relays shall be spirally bundled around the switch to allow the switch to be "rolled" out of the panel for future wiring changes.
- C. All wires shall be kept as short as practical with no excess wire coiled up or looped in the wire ducts. All wiring shall be neatly and carefully installed by workmen skilled in such installation.
- D. Cables and wires shall be installed and terminated in accordance with Substation Control Wiring Requirements as noted on the drawings.
- E. All wires shall be kept as short as practical with no excess wire coiled up or looped in the wire ducts. All wiring shall be neatly and carefully installed by workmen skilled in such installation.
- F. Wires shall be terminated with insulated ring type insulated lugs, securely crimped. Ring lug terminals shall be Thomas & Betts or Burndy. NOTE: No slotted terminal connectors shall be used. Use of non-approved lugs may result in rejection of work and complete retermination of all wiring
- G. Sufficient care shall be exercised in the use of crimp-on terminal connectors to insure that each wire is firmly attached to the connector and that proper wire strip length, as determined by the

lug manufacturer, is followed. Conductor insulation shall be squarely and evenly cut and shall be continuous with the connector barrel.

- H. Only controlled-cycle compression tools supplied by the manufacturer of the ring lug being used are acceptable. Use of compression tools not supplied by the ring lug manufacturer may result in rejection of work and complete retermination of all wiring
- I. Install special cables as required.
- J. All wiring or cables that are disconnected shall be completely removed from wireways and wire looms. Disconnected wiring shall not be left in the relay panels.
- K. If large wire sizes require use of non-insulated lugs, cover lug barrel with 600V heat shrink tubing.

3.5 ACCESSORIES

- A. Device Nameplates: Assure a clean surface exists prior to adhering nameplates. Nameplates to be installed level.
- B. Device Labels: A device location label used to locate each device with respect to the point-to-point wiring diagrams shall be installed next to each device inside the panel. These adhesive labels shall have 3/8" black letters on a 3/4" x 1" white background.
- C. Wiring ducts shall be used as much as possible for all wire bundles. These plastic ducts shall be securely fastened to the panel and shall be completely independent of the relay cases and other equipment mounted on the panel.
- D. Required wiring accessories such as cleats, mounting straps, terminal connectors, fuse blocks, terminal boards, cartridge fuses of the ratings shown and the like, shall be provided by the Contractor.

END OF SECTION 337233.13

INDIANOLA MUNICIPAL UTILITIES EAST IOWA CIRCUIT SWITCHER REPLACEMENT PROJECT - INSTALLATION

SECTION 337233.19 – SUBSTATION TESTING & COMMISSIONING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Section 337243 Substation Control Wiring.

1.2 SUMMARY

- A. This Section includes the following: Testing and commissioning of substation equipment, auxiliary equipment, relays, circuits, and controls, etc.
- B. Equipment and systems to be tested include the following:
 - 1. Perform acceptance tests on new circuit breakers CK601 and CK602 including auxiliary systems, CTs, etc.
 - 2. CK601 trip and close circuits including wiring and functional tests.
 - 3. CK230 trip and close circuits including wiring and functional tests.
 - 4. CK602 trip and close circuits including wiring and functional tests.
 - 5. CK240 trip and close circuits including wiring and functional tests.
 - 6. Functional testing of all modified circuits.
 - 7. All circuits that will be modified must be traced prior to beginning work. All discrepancies between existing wiring and drawings must be resolved with Engineer prior to proceeding with modifications.
 - 8. Confirm phasing against measurements taken on the existing system prior to reenergizing transformers.
 - 9. Test newly installed equipment ground leads.
- C. The following tests will be performed by Others:
 - 1. Modifications to Owner's SCADA master station.

1.3 STANDARDS

- A. Testing shall adhere to the requirements and recommendations contained in the following standards:
 - 1. American National Standards Institute (ANSI):
 - C12.1 Code for Electricity Metering
 - C12.11 Instrument Transformers for Revenue Metering, 10 kV BIL through 350 kV BIL.
 - C12.13 Electronic Time-of-Use Registers for Electricity Meters.
 - C12.15 Electricity Metering - Solid-State Demand Registers for Electromechanical Watthour Meters

- C12.16 Solid-State Electricity Meters.
- C63.2 Electromagnetic Noise and Field-Strength Instrumentation, 10kHz to 40GHz.
- 2. American Society for Testing and Materials (ASTM):
 - D877 Test Method for Dielectric Breakdown Voltage of Insulating Liquids Using Disk Electrodes.
 - D1816 Test Method for Dielectric Breakdown Voltage of Insulating Oils of Petroleum Origin Using VDE Electrodes.
- 3. Institute of Electrical and Electronics Engineers (IEEE):
 - C2 National Electrical Safety Code.
 - C37.20.1 Metal-Enclosed Low-Voltage Power Circuit Breaker Switchgear.
 - C37.20.2 Metal-Clad and Station-Type Cubicle Switchgear.
 - C37.20.3 Metal-Enclosed Interrupter Switchgear.
 - C57.13 Requirements for Instrument Transformers.
 - C57.13.1 Guide for Field Testing of Relaying Current Transformers.
 - C57.13.2 Conformance Test Procedures for Instrument Transformers.
 - C57.13.3 Guide for Grounding of Instrument Transformer Secondary Circuits and Cases.
 - 450 Maintenance, Testing, and Replacement of Large Lead Storage Batteries for Generating Stations and Substations
- 4. National Fire Protection Association (NFPA)
 - 70 National Electrical Code.
- 5. National Electrical Manufacturers Association (NEMA) and Insulated Cable Engineers Association (ICEA):
 - WC 3/ICEA S-19-81 Rubber-Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy.
 - WC 5/ICEA S-61-402 Thermoplastic-Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy.
 - WC 7/ICEA S-66-524 Cross-Linked-Thermosetting-Polyethylene-Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy.
 - WC 8/ICEA S-68-516 Ethylene-Propylene-Rubber-Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy.
- 7. InterNational Electrical Testing Association (NETA)
 - ATS-2017 Standard for Acceptance Testing Specifications for Electrical Power Equipment and Systems
- 8. North American Electric Reliability Council (NERC)
 - PRC-005 Transmission and Generation Protection System Maintenance and Testing
 - PRC-008 Underfrequency Load Shedding Equipment Maintenance Programs
 - PRC-011 UVLS System Maintenance and Testing
 - PRC-017 Special Protection System Maintenance and Testing

1.4 TESTING SUBCONTRACTOR

- A. Testing shall be performed by a subcontractor routinely engaged in the setting and testing of utility grade power system equipment, relays, protection schemes, and associated devices.
- B. Detailed information concerning the proposed testing subcontractor's experience shall be provided. Documentation of subcontractor's experience shall include, at minimum, a list of

substation relay and control projects completed during the last year; detailed description of experience with electromechanical and Basler Electric Company devices; a listing of the subcontractor's testing equipment; names and resumes of personnel who will be assigned to the project; and utility references including names and phone numbers for the specific personnel and the subcontractor in general.

- C. Scott Steinmetz of Steinmetz Corporation has significant recent experience in the East Iowa Substation and is Owner's preferred testing contractor. Steinmetz Corporation's phone number is available upon request from Engineer. Proposed testing contractor must be submitted with the bid. Alternate testing contractors must be approved prior to beginning work.

1.5 PERSONNEL

- A. The lead testing technician shall have a minimum of 10 years experience testing utility protection and control equipment. Experience shall include a minimum of 5 years being in responsible charge of testing programs for substations of similar size and nature as this project and shall include the testing and commissioning of substations with similar types of relays and control schemes. Experience shall include a complete scope of testing such as is specified in these specifications. Lead testing technicians shall be certified in accordance with ANSI/NETA ETT-2000 and shall have a current Level III or higher certification.
- B. Additional testing technicians shall have a minimum of 5 years testing experience in utility testing. Experience shall include the testing and commissioning of substations with similar types of relays and control schemes and shall include a complete scope of testing such as is specified in these specifications. Testing technicians shall be certified in accordance with ANSI/NETA ETT-2000.
- C. Resumes of lead testing technician and all additional testing technicians that will be assigned to the project shall be provided to Owner at least 30 days prior to commencement of testing. Testing contractor shall replace any testing personnel that Owner does not deem qualified at any time before or during the testing process. Owner reserves absolute right to determine the necessity of such replacement.

1.6 TEST EQUIPMENT

- A. Test equipment listed below is the minimum required to perform the testing and checkout of the relay and control systems. Test technicians must be familiar with the use of this equipment and have a thorough understanding of the devices that are being tested.
- B. All test equipment shall have been tested, calibrated, and certified by the equipment manufacturer within 12 months prior to performing the tests. Copies of all certificates shall be provided to Owner prior to testing.
- C. Relay Test Set
 1. Voltage Source: Device(s) capable of supplying three independent voltage sources (1-250V) that are accurately variable both in magnitude and phase angle.
 2. Current Source: Device(s) capable of supplying three independent current sources (0-25A) that are accurately variable both in magnitude and phase angle.

3. Frequency source: Device that is capable of supplying two voltage sources (0-150V) with one of the sources capable of supplying accurately variable frequency. Frequency shall be variable from 55-65 Hz minimum with at least 0.1 degree resolution.
 4. Digital Timer: Device capable of timing contact or DC voltage transitions integral with the operation of the voltage and current sources. Timer resolution must be 0.0001 second or better.
 5. The accuracy of all sources shall be equal to or better than the following:
 - a. Magnitude: $\pm 0.5\%$
 - b. Phase Angle: ± 0.5 degrees
 - c. Frequency: $\pm 0.01\%$
 - d. Time Measurement: ± 0.0001 sec
 - e. The distortion of the sine wave sources must be less than 2 percent.
 6. Acceptable Devices:
 - a. Three (3) Doble F2350 series units
 - b. One (1) Doble F6000 series unit
 - c. AVO – Pulsar System with appropriate modules
 - d. Powertec – DFR
 - e. Omicron – CMC 156
- D. Transducer & Meter Calibrator
1. Acceptable Devices:
 - a. Scientific Columbus Model 6444 Transducer Calibrator
 - b. Powertec TTS Calpro
 - c. Combination System consisting of either Relay Test Set from above list with Arbiter Systems Model 931A Power System Analyzer (in RMS mode) connected between test set and transducer or meter or Relay Test Set from above list using external AC (True RMS) and DC voltmeters and current meters from acceptable meter list. Sufficient quantity of meters must be used to simultaneously monitor input voltage, current, and output current (if applicable).
 2. All devices must have at least 0.2% accuracy
- E. Voltmeter and Ammeter; Multimeters used during the calibration of meters, transducers and relays must be high accuracy digital meters that meet the following specifications:
1. 4 ½ digit or better resolution
 2. True RMS AC measurement
 3. Basic DC Accuracy: 0.05% of scale used
 4. Basic AC Accuracy: 0.2% of scale used
- F. Phase Angle Meter
1. An analog or digital phase angle meter shall be utilized during testing of the auto synchronizing system or sync check functions.
 2. Digital or analog phase angle meters are acceptable for recording voltage and current load and phase angle values. Clamp-on phase angle meters are not acceptable.
- G. CT Test Equipment: A device specifically designed to test CTs shall be used. Approved devices include:
1. AVO Current Transformer Excitation Test set, Model CTER-
 2. Appropriate Vanguard Instruments CT Excitation Test Set device

- H. Test Jack Devices: Where ABB FT-1 and FT-19R test switches are used, disconnection of internal wiring is discouraged and is to be performed only when absolutely necessary. To this end, it will be necessary to have sufficient quantities of the appropriate ABB test jacks to enable use of the test switches.
- I. Computer Terminal and Printer: A computer terminal and associated communications cables for communicating with the various relays is required. Special software to communicate with a) test equipment, b) substation integration devices, and/or intelligent equipment devices (i.e. relays, panel meters, transformer tap controllers, etc) will NOT be provided by Owner however Owner is expecting the special software to be used.
- J. Megohmmeter: A 2500-volt megohmmeter is required to test insulation. The meter shall have minimum accuracy of 5%.
- K. Infrared Scanning Equipment: Infrared scanning equipment shall provide a hard copy to record the thermal image, temperature of the object, ambient temperature, degrees temperature rise above ambient, and date of the recording. Manufacturer's information on the scanning equipment shall be submitted for review.
- L. Phase Rotation Meter
- M. AC High Potential Unit
 - 1. An AC high potential test set with an available test voltage of at least 36kV AC is required to test the vacuum interrupters in the vacuum circuit breakers.
 - 2. Acceptable devices
 - a. Hipotronics Model 860P
 - b. Hipotronics Model 880PL
 - c. Hipotronics Model 7BT 60
 - d. AVO - Biddle Catalog 222060
- N. Low Resistance Test Unit (Ductor)
 - 1. AVO
- O. High AC Current (Primary Injection) Test Set with minimum continuous current output capacity of 100 amps
 - 1. SMC Raptor MS

1.7 SCHEDULE

- A. Lead testing technician shall provide a testing program and schedule to indicate the sequence of the work and the time period during which it will be completed. The program/schedule shall be updated on a weekly basis. The program/schedule shall be provided to Owner on a weekly basis at a meeting scheduled mutually with Owner.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 GENERAL

- A. Existing relay panels shall remain energized at all times. When testing relay panels, Contractor shall take all necessary precautions to prevent inadvertent operation of relays or controls.
- B. Furnish qualified test personnel to initiate and manage the test program for this project. Provide qualified test technicians as necessary to perform all testing required under these specifications.
- C. Furnish all test equipment as specified or required to properly perform each specified or required test to completely verify the proper operation of all equipment and systems.

3.2 REQUIRED TESTING AND COMMISSIONING SERVICES

- A. Testing is to be as complete and as extensive as necessary to assure the proper operation of all equipment and protective systems for all equipment within the substation and for all equipment extending from the substation.
- B. Subcontractor shall provide a written test plan for the testing to be completed for this project. The plan shall be inclusive, indicating the tests that are to be completed, the equipment that will be tested, and the schemes that will be tested. The plan shall also include the interconnecting parties that require coordination for tests such as those required for the transmission lines. The test plan shall incorporate a schedule that indicates when item-specific testing will be performed. Owner may assign representatives to witness testing based upon this schedule. Contractor may be required to repeat testing in the presence of Owner's representative should performance of testing vary from the schedule without advance notice to Owner.
- C. Test and set all of the relays according to settings provided by Engineer.
- D. Function test all circuits installed for this project using primary or secondary current and voltage injection. Current and voltage values used to activate relays shall be based on values necessary to confirm the differing modes of operation for each relay, such as zone 1, zone 2, zone 3, overcurrent conditions, overvoltage conditions, undervoltage conditions, underfrequency conditions, and etc. This will include all AC potential and current circuits and all control circuits. This testing will be done in conjunction with the testing and checkout by Owner on the SCADA system. These values will be used to confirm the data connections to the communications processors, ethernet switch, SCADA RTU, and Control Center.
- E. Provide contact status change or signal inputs to RTU equipment to confirm proper operation of the equipment.
- F. Simulate in-service fault operation using current and voltage injection tests to trip protective equipment for all of the protective schemes.

- G. Perform all initial pre-energization tests or checks to confirm the readiness of equipment to be energized.
- H. Perform all load tests, checks or verification procedures to confirm the proper connection and operation of circuits, relays, protection schemes, etc. being placed in service. This includes satellite-controlled synchronous end-to-end tests on all transmission lines that utilize piloted protection schemes.
- I. Confirm the proper operation of all circuits installed or revised for the project. This will include using a set of substation control drawings and checking the proper operation of each contact opening/closure, switch opening/closure, operation of each coil, relay, etc. that is connected into the circuits. Each device confirmed for proper operation shall be "yellow lined" to indicate the device has been checked and found operating properly. If necessary, incidental corrections shall be coordinated with the Engineer, implemented, placed into service, and functionally tested. For the purpose of the contract, the testing contractor shall include a minimum of 200 conductor termination relocations and the addition of 200 wire jumpers, complete with terminations.
- J. Provide thermal infrared scans of power equipment, bus, control equipment, auxiliary equipment, etc under the maximum load conditions possible.

3.3 REQUIRED RELAY AND RELATED DEVICES TESTS

- A. Tests covered by this specification shall include but not be limited to the following:
- B. Megger Tests:
 - 1. Megger all power equipment for 1 minute at 2500V.
 - 2. Do not megger any protective relays, communication processors, lighted nameplates, or other equipment that contains electronic components.
- C. Current Transformer Tests (new breaker CTs only):
 - 1. Verify nameplate data with drawings and specifications.
 - 2. Verify grounding.
 - 3. Verify correct connections with system requirements.
 - 4. Verify bolted electrical connections with low resistance ohmmeter or calibrated torque wrench.
 - 5. Visually check polarity mark orientation on all CTs with the contract drawings and manufacturer's drawings.
 - 6. Perform CT polarity test per IEEE C57.13.1 or as follows:
 - a. Insert a milliammeter by test plug or jumpers to check that proper circuit continuity and polarity is present in each instrument, relay, switch, auxiliary equipment, etc., that should be connected to the CT being tested; repeat for every CT.
 - b. Attach the "negative" lead of a 12-volt automotive battery to the unmarked terminal of the CT primary.
 - c. Momentarily touch the "plus" lead of the battery to marked CT primary lead then release the battery positive lead. The milliammeter will read up scale to indicate the correct continuity and polarity.
 - d. When testing power transformer CTs, avoid touching the battery, battery leads, and transformer terminals during the test.

7. Ratio CTs at all taps using the voltage or current method per IEEE C57.13.1.
 8. Perform megger test on CT primary winding with CT secondary grounded.
 9. Perform demagnetization and excitation tests on CTs in accordance with ANSI C57.13 as the final test on each CT.
 10. Power factor tests.
 11. Verify that all CT secondary circuits are grounded at one and only one point as shown on drawings.
 12. All CTs are to remain shorted until it is determined in the course of the testing procedure the CT is properly loaded.
- D. Sudden Pressure Relay:
1. Pressure test the relay in accordance with the manufacturer's instructions to verify proper operation of device and electrical contacts.
 2. Megger contact to case.
- E. Alarm Sensor Testing:
1. Megger all leads of device to case. (Consult instruction book for voltage level to be used to assure no damage across open contacts.
 2. Induce the device to operate with proper input medium (heat, cooling, pressure, vacuum, voltage, current, etc.) and verify operation of the device at the correct input medium level by monitoring the output contacts with an ohmmeter.
- F. Annunciator Testing:
1. Check each unit of annunciators by closing or opening the trouble contact and observing operation of control board.
 2. Check all annunciator lamps, bell cutoff, and reset operation.
- G. Relay Switchboards:
1. Visually inspect all equipment, wiring, etc.
 2. Verify grounding.
 3. Instrument transformer tests.
 4. Alarm sensor testing.
 5. Annunciator testing.
 6. Molded-case circuit breaker trip testing.
 7. Relay testing
 8. Control and instrument switch testing.
 9. Instrument calibration.
 10. Verify correctness/completeness of engraved nameplates.
- H. Communications Processors:
1. Verify cabling between communications processors, SEL relays, and other devices.
 2. Install settings and functionally test communications processors.
 3. Adjust analog point scaling as required to provide correct analog quantities to SCADA systems.
 4. Verify grounding.
- I. Instrument Calibration:
1. Verify nameplate data.
 2. Visually inspect for damage.
- J. Protection and control scheme wire checks:

1. Testing shall include a thorough review of the schematic diagrams and checking each element to verify that it is functioning properly within the scheme. The drawing elements are to be yellow-lined when it is determined that part of the circuit is operating correctly. The circuits to be included for the review include:
2. Current transformer circuits
3. Potential transformer circuits
4. Control circuits
5. Auxiliary power circuits
6. Include all circuits to the yard equipment

K. Functional Tests:

1. Functional tests shall include a complete simulation of operation of the protection and control schemes by injecting current and voltage signals into the secondary or primary circuits to confirm proper operation of the circuits and controlled equipment. This testing is to be concluded prior to energization of any equipment associated with the protection and control scheme. This testing shall include the following:
 - a. Inject current and voltages into the secondary circuits to the relays, meters, and monitoring devices. Primary current injection may be used in lieu of secondary current injection.
 - b. Measure voltage, current, and phase angles into or out of all equipment on the circuit.
 - c. Increase values to actuate pickup of the relays for the different relay settings to demonstrate proper operation of the relays and the control circuits.
2. Perform the trip tests for the differing substation configurations that the station may experience during switching or operating conditions. All functions, including, but not limited to, pilot trip, non-pilot trip, reclosing, and breaker failure schemes with direct transfer trip shall be demonstrated.
3. Record all tests on forms provided by the tester.

3.4 EQUIPMENT TESTS

A. High Voltage Circuit Breaker Tests:

1. Verify nameplate data.
2. Verify grounding.
3. Inspect physical and mechanical condition.
4. Inspect operating mechanism and SF6 gas insulation system.
5. Test for SF6 leaks.
6. Verify operation of alarms and pressure switches for pneumatic, hydraulic, or SF6 gas pressure.
7. Perform mechanical operation tests on mechanism per manufacturer's documentation
8. Verify bolted connections with low resistance ohmmeter or calibrated torque wrench.
9. Perform time travel analysis.
10. Megger tests.
11. Ductor tests.
12. Functional tests.
13. Power factor tests.
14. High potential tests (not required for SF6 breakers.)
15. Verify cubicle heater operation.
16. Instrument transformer tests.

17. Verify correct operation of electrical close, electrical trip, trip-free and antipump functions.
18. Perform minimum pickup voltage tests on close and trip coils per manufacturer's documentation.
19. Check auxiliary switch connections, contacts, and operating linkages.
20. Check proper operation of heaters, motors, compressors (air, oil, SF6 gas), gauges, valves, and accessories.
21. Check to see if compressors, motors, or pumps run excessively.
22. Motor tests.
23. Record as-found and as-left counter readings.

B. Low Voltage (< 600V) Power Circuit Breaker Tests:

1. Molded-case circuit breaker trip tests.
 - a. Check for proper current rating to circuit connected.
 - b. Verify proper operation of ground detector on all GFI breakers.
 - c. Adjust and test pickup settings using primary current injection.

C. Supervisory Remote Terminal:

1. Contractor will test all changes to cables and wires and check terminations to the supervisory remote terminal.
2. Verify grounding.
3. Contractor will assist the owner or manufacturer's field representative in functional and operational tests of the supervisory remote terminal unit to assure correctness of control, status point, and analog metering operation.

D. Outdoor Bus

1. Compare bus arrangement and phasing cuts with drawings and specifications.
2. Check bolted connections with a low resistance ohmmeter or with a calibrated torque wrench.
3. Megger tests.
4. Verify grounding.

E. Miscellaneous Equipment Tests:

1. Test all miscellaneous equipment furnished by equipment manufacturer as recommended by manufacturer. Perform other tests recommended by the manufacturer or ANSI/NETA ATS-2009 to assure correctness of operation of equipment within the substation.

3.5 EQUIPMENT ENERGIZATION

A. Planning

1. A meeting will be held between responsible parties approximately two (2) weeks ahead of equipment outages and equipment energizations to review the work to be accomplished.
2. The schedule for the work, including the tasks to be accomplished, the time periods for the tasks, intermediate testing and check points, etc. will be reviewed.
3. During any scheduled outage, a weekly meeting, or more often as site conditions dictate, will be held to review progress, status, and site conditions that may affect the progress of the work.
4. Review phasing prior to beginning work. Measurements shall be used later after the transformers are reenergized.

B. Transformer Outages

1. Transformer outages will not take place until all practical prior work has been completed such that the outage duration is minimized.
2. The scheduling and release of a transformer outage will be completely at the discretion of the IMU and will not be unreasonably withheld.
3. The installation and testing of the equipment, circuits, and schemes shall be planned and sequenced to minimize the amount of outage time required, and as much as is practicable, allow the equipment to be re-energized when not required for construction or testing.

C. Equipment energization:

1. A coordination meeting shall be held approximately 1 day in advance of the scheduled energization.
2. Responsibilities of Testing Technician during the pre-energization and energization tasks.
 - a. Witness initial energization of equipment.
 - b. Assure that the initial energization sequence is followed as determined in the initial coordination meeting.
 - c. Perform all testing and checks necessary to confirm the equipment, relays, etc. are operating properly, seeing the proper voltage, currents, phase angles, or other properties as required for proper operation.
 - d. Record all tests and checks on forms provided by the testing technician.
 - e. Coordinate with test technicians (including test technicians with other company affiliations) at other locations remote from the substation to assure proper operation of the facilities being placed in service.
 - f. Provide notification to other responsible personnel when tests have proven the equipment is operating satisfactorily and he is ready to proceed with additional energization of equipment.
3. Testing Technician shall provide testing personnel during initial energization of each circuit breaker as may be required during the energization sequence.
 - a. Perform the following insulation tests prior to energizing high voltage equipment.
 - b. Megger each HV piece of equipment, bus, etc. just before energization or after construction work is completed. Megger phase to phase and phase to ground for each phase. Disconnect and reconnect transformer neutrals as necessary to isolate grounds on system for the testing.
 - c. Investigate and resolve improper results of the tests before continuing with the energization.
 - d. Verify phasing of the bus and incoming lines to the substation.
 - e. Responsible parties shall agree that the substation is ready for energization prior to commencing the Energization sequence.
4. Energization
 - a. Perform the energization of equipment in accordance with the energization schedule previously established.
 - b. Perform the necessary tests and checks including comparing phasing prior to supplying load from the reenergized transformer.
 - c. Continue with the next step of the energization procedure when and only when responsible parties agree the tests and checks are complete and the equipment is operating properly.

3.6 POST ENERGIZATION TESTS AND FOLLOWUP

- A. Immediately after the initial energization of new equipment, the testing technician shall complete load tests and checks to include the following:
 - 1. Measure currents, voltages, and phase angles at the inputs or outputs of all relays, meters, monitoring equipment, etc. Confirm the proper inputs to all equipment due to external equipment measurements.
 - 2. Record all measurements on forms provided by the testing technician.
 - 3. Confirm with responsible parties when all post-energizing testing is completed and the equipment or sub-sections thereof are ready for commercial operation.
- B. Complete marks, comments to record drawings and submit to Engineer for revision of drawings.
- C. Test technician shall submit final copies of all test reports to Engineer.
- D. Contractor shall provide an event record, in electronic format, from each microprocessor-based relay set or reset under this project to Engineer. Event shall be generated by a trigger command to the relay. The trigger shall be initiated after final settings have been placed on the relay. Events shall be emailed to Engineer no later than 24 hours after the line terminal is commissioned and placed into service.

3.7 GROUND TESTING

- A. If possible, perform ground tests prior to static wire attachment to line dead-end towers, or disconnect static jumpers for insulated static wire installations. Supplemental ground wires that extend outside the substation fence shall be disconnected before testing. Testing shall be performed before underground cable shields and concentric neutrals are connected to the ground grid. If the grounding system includes counterpoises, they shall remain connected during testing.
- B. Perform the following tests on portions of the ground grid that are modified:
 - 1. Verify ground system is in compliance with drawings and specifications and, where applicable, the NFPA 70 National Electrical Code Article 250.
 - 2. Inspect physical and mechanical condition
 - 3. Test bolted electrical connections with low-resistance ohmmeter and investigate values greater than 50 percent higher than the lowest resistance value obtained.
 - 4. Verify tightness of bolted connections with calibrated torque wrench in accordance with manufacturer's published data.
 - 5. Perform high-current ground grid injection tests on all new grounding leads connected to the ground grid system:
 - a. Document test locations by marking up a copy of the ground grid plan. Number all test points and enter numbers on test report.
 - b. Use all necessary safety precautions prior to performing this testing, especially in an energized substation. On all ground conductors, current flow is likely even when no fault exists. During fault conditions, extremely high fault current can flow through the station ground grid, resulting in extremely high voltages. Due to the long cable lengths and the possibility of high step potential, all personnel working with or in contact of the test leads must wear low-voltage rubber gloves.

- c. The reference connection shall normally be the transformer neutral. In large stations, the reference connection may need to be moved. Begin a new test report for each reference connection. Describe reference connection point on test report.
 - d. Test leads must not be coiled at any time during testing.
 - e. If equipment or structures have two ground leads, lift one when possible before injecting current. Multiple leads provide multiple paths to the grid, making interpretation of results very difficult.
 - f. Inject a minimum of 100 amps on each new ground lead that extends above the substation surface.
 - g. Enter test point number, amps injected, volts measured on test form.
 - h. Calculate total test impedance by dividing volts by amps and enter on test report.
 - i. Measure tare impedance of test leads and enter on test report.
 - j. Subtract tare impedance from total test impedance to determine actual impedance and enter on test report.
6. Obtain point-to-point resistance measurements between the ground grid and all major new electrical equipment frames, structures, buildings, etc.
- a. Investigate all point-to-point resistance values that exceed 0.5 ohms.
 - b. Record results and notify Engineer if any reading exceeds 1 ohm.

3.8 DOCUMENTATION

- A. A written log shall be maintained of the testing performed noting the date, time and personnel performing the tests. Contractor shall develop and maintain test forms for each device or system tested. The form shall include all pertinent nameplate data including model and serial numbers, the date and time of the test and the person performing the tests.
- B. A written log shall be maintained of the testing performed noting the date, time and personnel performing the tests. Contractor shall develop and maintain test forms for each device or system tested. The form shall include all pertinent nameplate data including model and serial numbers, the date and time of the test and the person performing the test.
- C. The testing logs and test forms shall be available on-site for viewing by Owner or his representatives at all times. At the completion of the project, two copies of the testing log and the testing forms shall be delivered to Owner for his records.
- D. Testing Documentation. Testing contractor shall provide test data forms and record all tests. Tests shall be recorded on the actual forms. Recording test data on backup data sheets and transposing the data at a later date is not acceptable. Completed test forms shall be signed and dated on the date they are completed. Two copies of completed test forms shall be submitted to OWNER on a weekly basis. Testing technician shall maintain two sets of full size drawings. One set shall be used to yellow line circuits/schemes indicating that the testing has been completed and schemes have been proven correct. The second set shall be used to mark any changes, revisions, etc. to the drawings. Both sets shall be submitted to the Engineer at the completion of the project.
- E. Maintenance Records. Record all inspections and maintenance data for each piece of equipment. A separate form shall be used for each individual piece of equipment. Equipment ID numbers will be used to identify the equipment whenever available. Record the following information on the forms: date, time, inspected by, readings and status, conditions found, test results, and any maintenance or corrective work performed. Completed inspection and

maintenance forms shall be delivered to Owner after the completion of the Work. All forms used for inspections and maintenance shall be pre-approved, in writing, by Owner before testing can begin.

- F. Maintain an as-constructed set of drawings during the construction of the Work. Deliver the as-constructed drawings to Engineer at the completion of the Work.
- G. Test reports shall at minimum include the following:
 - 1. Summary of project.
 - 2. Description of equipment tested.
 - 3. Description of tests.
 - 4. Test data.
 - 5. Analysis and recommendations.
- H. Test data records shall at minimum include the following:
 - 1. Identification of the testing contractor.
 - 2. Equipment identification.
 - 3. Humidity, temperature, and other conditions that may affect test results.
 - 4. Date of inspections, maintenance, tests, or calibrations.
 - 5. Identification of the testing technician.
 - 6. Indication of inspections, tests, maintenance, and/or calibrations to be performed and recorded.
 - 7. Indication of the expected results when calibrations are to be performed.
 - 8. Indication of as-found and as-left results, as applicable.
 - 9. Sufficient spaces to allow all results and comments to be included.
- I. Documentation of test procedures, test results, and test equipment certifications shall be provided for all systems and equipment as required in applicable NERC standards. Documentation shall be in a format acceptable to demonstrate compliance with NERC standards in effect at the time the testing is completed. Testing Contractor shall assist the Owner with the initial NERC compliance audit following commissioning of the project by providing any additional documentation or certification necessary to assure compliance with NERC standards that apply to protection system testing.

END OF SECTION 337233.19

**INDIANOLA MUNICIPAL UTILITIES
EAST IOWA CIRCUIT SWITCHER REPLACEMENT PROJECT - INSTALLATION**

SECTION 337233.33 - RACEWAY AND BOXES FOR SUBSTATIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Conduit, ducts, and duct accessories for direct-buried and concrete-encased duct banks, and in single duct runs.
 - 2. Raceways, fittings, boxes, enclosures, and cabinets for substation electrical wiring.

1.3 DEFINITIONS

- A. EMT: Electrical metallic tubing.
- B. IMC: Intermediate metal conduit.
- C. RMC: Rigid metallic conduit.
- D. FMC: Flexible metal conduit.
- E. LFMC: Liquidtight flexible metal conduit.
- F. LFNC: Liquidtight flexible nonmetallic conduit.
- G. ENT: Electrical nonmetallic tubing.
- H. RNC: Rigid nonmetallic conduit.

1.4 SUBMITTALS

- A. Product Data: For duct bank materials, surface raceways, wireways and fittings, handholes, hinged-cover enclosures, and cabinets.
- B. Shop Drawings: For the following raceway components. Include plans, elevations, sections, details, and attachments to other work.
 - 1. Custom enclosures and cabinets.

1.5 QUALITY ASSURANCE

- A. Comply with ANSI C2, National Electrical Safety Code
- B. Comply with NFPA 70, National Electrical Code.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver conduits to Project site with ends capped. Store nonmetallic ducts with supports to prevent bending, warping, and deforming.
- B. Store precast concrete and other factory-fabricated underground utility structures at Project site as recommended by manufacturer to prevent physical damage. Arrange so identification markings are visible.
- C. Lift and support precast concrete units only at designated lifting or supporting points.

1.7 COORDINATION

- A. Coordinate layout and installation of ducts, manholes, handholes, and boxes with final arrangement of other utilities, site grading, and surface features as determined in the field.
- B. Coordinate elevations of ducts and duct-bank entrances into manholes, handholes, and boxes with final locations and profiles of ducts and duct banks as determined by coordination with other utilities, underground obstructions, and surface features. Revise locations and elevations from those indicated as required to suit field conditions and to ensure that duct runs drain to manholes and handholes, and as approved by Engineer.

PART 2 - PRODUCTS

2.1 METAL CONDUIT AND TUBING

- A. RMC - Rigid Metal Conduit: ANSI C80.1.
- B. IMC – Intermediate Metal Conduit: ANSI C80.6.
- C. EMT – Electrical Metal Tubing: ANSI C80.3.
- D. LFMC – Liquid tight Flexible Metal Conduit: Flexible steel conduit with PVC jacket.
- E. RNC – Rigid Nonmetallic Conduit
- F. Fittings for Conduit (Including all Types and Flexible and Liquidtight), EMT, and Cable: NEMA FB 1; listed for type and size raceway with which used, and for application and environment in which installed.
 - 1. Conduit Fittings for Hazardous (Classified) Locations: Comply with UL 886.
 - 2. Fittings for EMT: Steel or die-cast, compression type.

3. Coating for Fittings for PVC-Coated Conduit: Minimum thickness, 0.040 inch, with overlapping sleeves protecting threaded joints.
- G. Joint Compound for Rigid Steel Conduit or IMC: Listed for use in cable connector assemblies, and compounded for use to lubricate and protect threaded raceway joints from corrosion and enhance their conductivity.

2.2 NONMETALLIC CONDUIT AND TUBING (PVC)

- A. RNC: NEMA TC 2, Type EPC-40-PVC, UL 651, with matching fittings by same manufacturer as the conduit, complying with NEMA TC 3 and UL 514B.
- B. Duct Accessories:
 1. Duct Separators: Factory-fabricated rigid PVC interlocking spacers, sized for type and sizes of ducts with which used, and selected to provide minimum duct spacings indicated while supporting ducts during concreting or backfilling.
 2. Warning Tape: Underground-line warning tape specified in Division 33 Section "Electrical Identification."

2.3 OPTICAL FIBER/COMMUNICATIONS CABLE RACEWAY AND FITTINGS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 1. Arnco Corporation.
 2. Carlon Electrical Products.
 3. Or approved equivalent.
- C. Description: Comply with UL 2024; flexible type, approved for general-use installation.

2.4 METAL WIREWAYS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 1. Cooper B-Line, Inc.
 2. Hoffman.
 3. Square D.
 4. Or approve equivalent.

- C. Description: Sheet metal sized and shaped as indicated, NEMA 250, Type 1, unless otherwise indicated.
- D. Fittings and Accessories: Include couplings, offsets, elbows, expansion joints, adapters, hold-down straps, end caps, and other fittings to match and mate with wireways as required for complete system.
- E. Wireway Covers: Hinged type.
- F. Finish: Manufacturer's standard enamel finish.

2.5 BOXES, ENCLOSURES, AND CABINETS

- A. Sheet Metal Outlet and Device Boxes: NEMA OS 1.
- B. Cast-Metal Outlet and Device Boxes: NEMA FB 1, ferrous alloy, Type FD, with gasketed cover.
- C. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.
- D. Cast-Metal Access, Pull, and Junction Boxes: NEMA FB 1, galvanized, cast iron with gasketed cover.
- E. Cabinets:
 - 1. Indoor: NEMA 250, Type 1, galvanized-steel box with removable interior panel and removable front, finished inside and out with manufacturer's standard enamel.
 - 2. Outdoor: NEMA 250, Type 3R, stainless steel or aluminum box with removable interior back panel.
 - 3. Metal barriers to separate wiring of different systems and voltage.
 - 4. Accessory feet where required for freestanding equipment.
 - 5. Hinged door in front cover with latch and concealed hinge.
 - 6. Additional accessories as indicated on the drawings.

2.6 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

- A. Steel Slotted Support Systems: Comply with MFMA-4, factory-fabricated components for field assembly.
 - 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Cooper B-Line, Inc.; a division of Cooper Industries.
 - b. Thomas & Betts Corporation.
 - c. Unistrut; Tyco International, Ltd.
 - 2. Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-4.

3. Channel Dimensions: Selected for applicable load criteria.
- B. Raceway and Cable Supports: As described in NECA 1 and NECA 101.
- C. Conduit and Cable Support Devices: Steel and malleable-iron hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.
- D. Structural Steel for Fabricated Supports and Restraints: ASTM A 36/A 36M, steel plates, shapes, and bars; galvanized.
- E. Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include the following:
 1. Mechanical-Expansion Anchors: Insert-wedge-type, zinc-coated steel, for use in hardened portland cement concrete with tension, shear, and pullout capacities appropriate for supported loads and building materials in which used.
 2. Concrete Inserts: Steel or malleable-iron, slotted support system units similar to MSS Type 18; complying with MFMA-4 or MSS SP-58.
 3. Clamps for Attachment to Steel Structural Elements: MSS SP-58, type suitable for attached structural element.
 4. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM A 325.
 5. Toggle Bolts: All-steel springhead type.
 6. Hanger Rods: Threaded steel.

PART 3 - EXECUTION

3.1 RACEWAY APPLICATION

- A. Outdoor Control Raceway: Apply raceway products as specified below, unless otherwise indicated:
 1. Exposed Conduit: Rigid steel conduit.
 2. Underground Conduit: RNC, Type EPC-40-PVC, with Schedule 40 fittings, direct buried.
 3. ~~Boxes and Enclosures, Aboveground: NEMA 250, Type 3R.~~
 4. ~~Pull Boxes: Precast concrete.~~
 5. ~~Application of Handholes and Boxes for Underground Wiring:~~
 - a. ~~Handholes and Pull Boxes in Driveway, Parking Lot, and Off Roadway Locations, Subject to Occasional, Nondeliberate Loading by Heavy Vehicles: [Polymer concrete] [Fiberglass enclosures with polymer concrete frame and cover] [Fiberglass reinforced polyester resin], SCTE 77, Tier 15 structural load rating.~~
 - b. ~~Handholes and Pull Boxes in Sidewalk and Similar Applications with a Safety Factor for Nondeliberate Loading by Vehicles: [Polymer concrete units] [Heavy duty fiberglass units with polymer concrete frame and cover], SCTE 77, Tier 8 structural load rating.~~

~~c. Handholes and Pull Boxes Subject to Light Duty Pedestrian Traffic Only:
Fiberglass reinforced polyester resin, structurally tested according to SCTE 77
with 3000 lbf vertical loading.~~

- B. Indoor Control Raceway: Apply raceway products as specified below, unless otherwise indicated:
 - 1. Exposed, Not Subject to Physical Damage: EMT.
 - 2. Exposed and Subject to Severe Physical Damage: IMC or RMC. Includes raceways as indicated on the drawings.
 - 3. Connection to Vibrating Equipment (Including Transformers, Electric Solenoid, or Motor-Driven Equipment): FMC, except use LFMC in damp or wet locations.
 - 4. Boxes and Enclosures: NEMA 250, Type 1, except use NEMA 250, Type 4, stainless steel or aluminum in damp or wet locations.
- C. Outdoor Collector or Feeder Raceway (Medium Voltage): Apply raceway products as specified below, unless otherwise indicated:
 - 1. Exposed Conduit: RMC.
 - 2. Underground Conduit: RNC, Type EPC-40-PVC, with Schedule 80 fittings, concrete encased.
 - 3. Pull Boxes and Manholes: Precast concrete
- D. Minimum Raceway Size: 1/2-inch trade size for indoor and 1-inch trade size for outdoor.
- E. Raceway Fittings: Compatible with raceways and suitable for use and location.
 - 1. Rigid and Intermediate Steel Conduit: Use threaded rigid steel conduit fittings.
 - 2. EMT Conduit: Use steel or die-cast compression fittings.

3.2 INSTALLATION

- A. Comply with NECA 1 for installation requirements applicable to products specified in Part 2 except where requirements on Drawings or in this Article are stricter.
- B. Complete raceway installation before starting conductor installation.
- C. Arrange stub-ups so curved portions of bends are not visible above the finished slab.
- D. Install no more than the equivalent of four 90-degree bends in any conduit run except for communications conduits, for which fewer bends are allowed.
- E. Raceways Embedded in Slabs:
 - 1. Run conduit parallel or at right angles to main reinforcement. Where at right angles to reinforcement, place conduit close to slab support.
 - 2. Change from ENT to RNC, Type EPC-40-PVC, rigid steel conduit, or IMC before rising above the floor.

- F. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound to threads of raceway and fittings before making up joints. Follow compound manufacturer's written instructions.
- G. Install pull wires in empty raceways. Use polypropylene or monofilament plastic line with not less than 200-lb tensile strength. Leave at least 12 inches of slack at each end of pull wire.
- H. Raceways for Optical Fiber and Communications Cable: Install raceways, metallic and nonmetallic, rigid and flexible, as follows:
 - 1. 3/4-Inch Trade Size and Smaller: Install raceways in maximum lengths of 50 feet.
 - 2. 1-Inch Trade Size and Larger: Install raceways in maximum lengths of 75 feet.
 - 3. Install with a maximum of two 90-degree bends or equivalent for each length of raceway unless Drawings show stricter requirements. Separate lengths with pull or junction boxes or terminations at distribution frames or cabinets where necessary to comply with these requirements.
- I. Flexible Conduit Connections: Use maximum of 48 inches of flexible conduit for equipment subject to vibration, noise transmission, or movement; and for transformers and motors.
 - 1. Use LFMC or LFNC in damp or wet locations not subject to severe physical damage.

3.3 SUPPORT AND ATTACHMENT

- A. Comply with NECA 1 and NECA 101 for application and installation of hangers and supports for electrical equipment and systems except if requirements in this Section are stricter.
- B. Maximum Support Spacing and Minimum Hanger Rod Size for Raceway: Space supports for EMT, IMC, and RMC as scheduled in NECA 1, where its Table 1 lists maximum spacings less than stated in NFPA 70. Minimum rod size shall be 1/4 inch in diameter.
- C. Multiple Raceways or Cables: Install trapeze-type supports fabricated with steel slotted support system, sized so capacity can be increased by at least 25 percent in future without exceeding specified design load limits. Secure raceways to these supports with conduit clamps.
- D. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to structural elements by the following methods unless otherwise indicated by code:
 - 1. To Wood: Fasten with lag screws or through bolts.
 - 2. To New Concrete: Bolt to concrete inserts.
 - 3. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
 - 4. To Existing Concrete: Expansion anchor fasteners.
 - 5. To Steel: Beam clamps.
 - 6. To Light Steel: Sheet metal screws.

3.4 INSTALLATION OF UNDERGROUND CONDUIT

A. Direct-Buried Conduit:

1. Excavate trench bottom to provide firm and uniform support for conduit. Prepare trench bottom as specified in Division 31 Section "Earth Moving" for pipe less than 6 inches in nominal diameter.
2. Install backfill as specified in Division 31 Section "Earth Moving."
3. After installing conduit, backfill and compact. Start at tie-in point, and work toward end of conduit run, leaving conduit at end of run free to move with expansion and contraction as temperature changes during this process. Firmly hand tamp backfill around conduit to provide maximum supporting strength. After placing controlled backfill to within 12 inches of finished grade, make final conduit connection at end of run and complete backfilling with normal compaction as specified in Division 31 Section "Earth Moving."
4. Install manufactured duct elbows for stub-ups at poles and equipment and at building entrances through the floor, unless otherwise indicated. Encase elbows for stub-up ducts throughout the length of the elbow.
5. Install manufactured rigid steel conduit elbows for stub-ups at poles and equipment and at building entrances through the floor.
 - a. Couple steel conduits to ducts with adapters designed for this purpose, and encase coupling with 3 inches of concrete.
 - b. For stub-ups at equipment mounted on outdoor concrete bases, extend steel conduit horizontally a minimum of 60 inches from edge of equipment pad or foundation. Install insulated grounding bushings on terminations at equipment.

3.5 EARTHWORK

- A. Excavation and Backfill: Comply with Division 31 Section "Earthwork," but do not use heavy-duty, hydraulic-operated, compaction equipment.
- B. Restore surface features at areas disturbed by excavation and reestablish original grades, unless otherwise indicated. Replace removed sod immediately after backfilling is completed.
- C. Restore areas disturbed by trenching, storing of dirt, cable laying, and other work. Restore vegetation and include necessary topsoiling, fertilizing, liming, seeding, sodding, sprigging, and mulching.

3.6 DUCT INSTALLATION

- A. Slope: Pitch ducts a minimum slope of 1:300 down toward manholes and handholes and away from buildings and equipment. Slope ducts from a high point in runs between two manholes to drain in both directions.
- B. Curves and Bends: Use 5-degree angle couplings for small changes in direction. Use manufactured long sweep bends with a minimum radius as noted on the drawings, both horizontally and vertically, at other locations, unless otherwise indicated.

- C. Joints: Use solvent-cemented joints in ducts and fittings and make watertight according to manufacturer's written instructions. Stagger couplings so those of adjacent ducts do not lie in same plane.
- D. Duct Entrances to Manholes and Concrete and Polymer Concrete Handholes: Use end bells, spaced as required for each duct size.
 - 1. Begin change from regular spacing to end-bell spacing 10 feet from the end bell without reducing duct line slope and without forming a trap in the line.
 - 2. Grout end bells into structure walls from both sides to provide watertight entrances.
- E. Sealing: Provide temporary closure at terminations of ducts that have cables pulled. Seal spare ducts at terminations.
- F. Pulling Cord: Install 100-lbf-test nylon cord in all ducts, including spares.
- ~~G. Concrete Encased Ducts: Support ducts on duct separators.~~
 - ~~1. Separator Installation: Space separators close enough to prevent sagging and deforming of ducts, with not less than 4 spacers per 20 feet of duct. Secure separators to earth and to ducts to prevent floating during concreting. Stagger separators approximately 6 inches between tiers. Tie entire assembly together using fabric straps; do not use tie wires or reinforcing steel that may form conductive or magnetic loops around ducts or duct groups.~~
 - ~~2. Concreting Sequence: Pour each run of envelope between manholes or other terminations in one continuous operation.~~
 - ~~a. Start at one end and finish at the other, allowing for expansion and contraction of ducts as their temperature changes during and after the pour. Use expansion fittings installed according to manufacturer's written recommendations, or use other specific measures to prevent expansion-contraction damage.~~
 - ~~b. If more than one pour is necessary, terminate each pour in a vertical plane and install 3/4-inch reinforcing rod dowels extending 18 inches into concrete on both sides of joint near corners of envelope.~~
 - ~~3. Pouring Concrete: Spade concrete carefully during pours to prevent voids under and between conduits and at exterior surface of envelope. Do not allow a heavy mass of concrete to fall directly onto ducts. Use a plank to direct concrete down sides of bank assembly to trench bottom. Allow concrete to flow to center of bank and rise up in middle, uniformly filling all open spaces. Do not use power-driven agitating equipment unless specifically designed for duct bank application.~~
 - ~~4. Reinforcement: Reinforce concrete encased duct banks where they cross disturbed earth and where indicated. Arrange reinforcing rods and ties without forming conductive or magnetic loops around ducts or duct groups.~~
 - ~~5. Forms: Use walls of trench to form side walls of duct bank where soil is self-supporting and concrete envelope can be poured without soil inclusions; otherwise, use forms.~~
 - ~~6. Minimum Space between Ducts: 3 inches between ducts and exterior envelope wall, 2 inches between ducts for like services, and 4 inches between power and signal ducts.~~
 - ~~7. Depth: Install top of duct bank at least 24 inches below finished grade in areas not subject to deliberate traffic, and at least 30 inches below finished grade in deliberate traffic paths for vehicles, unless otherwise indicated.~~

- ~~8. Stub Ups: Use manufactured duct elbows for stub ups at poles and equipment and at building entrances through the floor, unless otherwise indicated. Extend concrete encasement throughout the length of the elbow.~~
- ~~9. Stub Ups: Use manufactured rigid steel conduit elbows for stub ups at poles and equipment and at building entrances through the floor.~~
 - ~~a. Couple steel conduits to ducts with adapters designed for this purpose, and encase coupling with 3 inches of concrete.~~
 - ~~b. Stub Ups to Equipment: For equipment mounted on outdoor concrete bases, extend steel conduit horizontally a minimum of 60 inches from edge of base. Install insulated grounding bushings on terminations at equipment.~~
- ~~10. Warning Tape: Bury warning tape approximately 12 inches above all concrete-encased ducts and duct banks. Align tape parallel to and within 3 inches of the centerline of duct bank. Provide an additional warning tape for each 12-inch increment of duct bank width over a nominal 18 inches. Space additional tapes 12 inches apart, horizontally.~~

~~H. Direct Buried Duct Banks:~~

- ~~1. Support ducts on duct separators coordinated with duct size, duct spacing, and outdoor temperature.~~
- ~~2. Space separators close enough to prevent sagging and deforming of ducts, with not less than 4 spacers per 20 feet of duct. Secure separators to earth and to ducts to prevent displacement during backfill and yet permit linear duct movement due to expansion and contraction as temperature changes. Stagger spacers approximately 6 inches between tiers.~~
- ~~3. Excavate trench bottom to provide firm and uniform support for duct bank. Prepare trench bottoms as specified in Division 2 Section "Earthwork" for pipes less than 6 inches in nominal diameter.~~
- ~~4. Install backfill as specified in Division 2 Section "Earthwork."~~
- ~~5. After installing first tier of ducts, backfill and compact. Start at tie-in point and work toward end of duct run, leaving ducts at end of run free to move with expansion and contraction as temperature changes during this process. Repeat procedure after placing each tier. After placing last tier, hand place backfill to 4 inches over ducts and hand tamp. Firmly tamp backfill around ducts to provide maximum supporting strength. Use hand tamper only. After placing controlled backfill over final tier, make final duct connections at end of run and complete backfilling with normal compaction as specified in Division 2 Section "Earthwork."~~
- ~~6. Install ducts with a minimum of 3 inches between ducts for like services and 6 inches between power and signal ducts.~~
- ~~7. Depth: Install top of duct bank at least 36 inches (below finished grade, unless otherwise indicated.~~
- ~~8. Set elevation of bottom of duct bank below the frost line.~~
- ~~9. Install manufactured duct elbows for stub ups at poles and equipment and at building entrances through the floor, unless otherwise indicated. Encase elbows for stub-up ducts throughout the length of the elbow.~~
- ~~10. Install manufactured rigid steel conduit elbows for stub ups at poles and equipment and at building entrances through the floor.~~
 - ~~a. Couple steel conduits to ducts with adapters designed for this purpose, and encase coupling with 3 inches of concrete.~~

- b. ~~For equipment mounted on outdoor concrete bases, extend steel conduit horizontally a minimum of 60 inches from edge of equipment pad or foundation. Install insulated grounding bushings on terminations at equipment.~~

3.7 ~~INSTALLATION OF CONCRETE MANHOLES, HANDHOLES, AND BOXES~~

A. ~~Cast in Place Manhole Installation:~~

- 1. ~~Finish interior surfaces with a smooth troweled finish.~~
- 2. ~~Windows for Future Duct Connections: Form and pour concrete knockout panels 1 1/2 to 2 inches thick, arranged as indicated.~~
- 3. ~~Cast in place concrete, formwork, and reinforcement are specified in Division 3 Section "Cast in Place Concrete."~~

B. ~~Precast Concrete Handhole and Manhole Installation:~~

- 1. ~~Comply with ASTM C 891, unless otherwise indicated.~~
- 2. ~~Install units level and plumb and with orientation and depth coordinated with connecting ducts to minimize bends and deflections required for proper entrances.~~
- 3. ~~Unless otherwise indicated, support units on a level bed of crushed stone or gravel, graded from 1 inch sieve to No. 4 sieve and compacted to same density as adjacent undisturbed earth.~~

C. ~~Elevations:~~

- 1. ~~Manhole Roof: Install with rooftop at elevation indicated on drawings.~~
- 2. ~~Handhole Covers: In paved areas and trafficways, set surface flush with finished grade. Set covers of other handholes 1 inch above finished grade.~~

D. ~~Drainage: Install drains in bottom of manholes where indicated. Coordinate with drainage provisions indicated.~~

E. ~~Waterproofing: Apply waterproofing to exterior surfaces of manholes **and handholes** after concrete has cured at least three days. Waterproofing materials and installation are specified in Division 7 Section "[Elastomeric Sheet Waterproofing]" **[Thermoplastic Sheet Waterproofing]**. After ducts have been connected and grouted, and before backfilling, waterproof joints and connections and touch up abrasions and scars. Waterproof exterior of manhole chimneys after mortar has cured at least three days.~~

F. ~~Dampproofing: Apply dampproofing to exterior surfaces of manholes **and handholes** after concrete has cured at least three days. Dampproofing materials and installation are specified in Division 7 Section "Bituminous Dampproofing." After ducts have been connected and grouted, and before backfilling, dampproof joints and connections and touch up abrasions and scars. Dampproof exterior of manhole chimneys after mortar has cured at least three days.~~

G. ~~Hardware: Install removable hardware, including pulling eyes, cable stanchions, and cable arms, as required for installation and support of cables and conductors and as indicated.~~

- ~~H. Field Installed Bolting Anchors in Manholes and Concrete Handholes: Do not drill deeper than 3 7/8 inches for manholes and 2 inches for handholes, for anchor bolts installed in the field. Use a minimum of two anchors for each cable stanchion.~~
- ~~I. Warning Sign: Install "Confined Space Hazard" warning sign on the inside surface of each manhole cover.~~

~~3.8 INSTALLATION OF HANDHOLES AND BOXES OTHER THAN PRECAST CONCRETE~~

- ~~A. Install handholes and boxes level and plumb and with orientation and depth coordinated with connecting ducts to minimize bends and deflections required for proper entrances. Use box extension if required to match depths of ducts, and seal joint between box and extension as recommended by the manufacturer.~~
- ~~B. Unless otherwise indicated, support units on a level bed of crushed stone or gravel and compacted to same density as adjacent undisturbed earth.~~
- ~~C. Elevation: In paved areas and trafficways, set so cover surface will be flush with finished grade. Set covers of other handholes 1 inch above finished grade.~~
- ~~D. Install removable hardware, including pulling eyes, cable stanchions, cable arms, and insulators, as required for installation and support of cables and conductors and as indicated. Select arm lengths to be long enough to provide spare space for future cables, but short enough to preserve adequate working clearances in the enclosure.~~
- ~~E. Field cut openings for ducts and conduits according to enclosure manufacturer's written instructions. Cut wall of enclosure with a tool designed for material to be cut. Size holes for terminating fittings to be used, and seal around penetrations after fittings are installed.~~

~~3.9 INSTALLATION OF UNDERGROUND HANDHOLES AND BOXES~~

- ~~A. Install handholes and boxes level and plumb and with orientation and depth coordinated with connecting conduits to minimize bends and deflections required for proper entrances.~~
- ~~B. Unless otherwise indicated, support units on a level bed of crushed stone or gravel, graded from 1/2-inch sieve to No. 4 sieve and compacted to same density as adjacent undisturbed earth.~~
- ~~C. Elevation: In paved areas, set so cover surface will be flush with finished grade. Set covers of other enclosures 1 inch above finished grade.~~
- ~~D. Field cut openings for conduits according to enclosure manufacturer's written instructions. Cut wall of enclosure with a tool designed for material to be cut. Size holes for terminating fittings to be used, and seal around penetrations after fittings are installed.~~

3.10 PROTECTION

- A. Provide final protection and maintain conditions that ensure coatings, finishes, and cabinets are without damage or deterioration at time of Substantial Completion.

1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
2. Repair damage to paint finishes with matching touchup coating recommended by manufacturer.

3.11 GROUNDING

- A. Ground underground ducts and utility structures according to Division 33 Section "Substation Grounding."

3.12 FIELD QUALITY CONTROL

- A. Perform the following tests and inspections and prepare test reports:
 1. Pull aluminum or wood test mandrel through duct to prove joint integrity and test for out-of-round duct. Provide mandrel equal to 80 percent fill of duct. If obstructions are indicated, remove obstructions and retest.
- B. Correct deficiencies and retest as specified above to demonstrate compliance.

3.13 CLEANING

- A. Pull leather-washer-type duct cleaner, with graduated washer sizes, through full length of ducts. Follow with rubber duct swab for final cleaning and to assist in spreading lubricant throughout ducts.
- B. Clean internal surfaces of manholes, including sump. Remove foreign material.

END OF SECTION 337233.33

**INDIANOLA MUNICIPAL UTILITIES
EAST IOWA CIRCUIT SWITCHER REPLACEMENT PROJECT – INSTALLATION**

SECTION 337243 – SUBSTATION CONTROL CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Control wires and cables.

1.3 DEFINITIONS

- A.

ANSI	American National Standards Institute.
ASTM	American Society for the Testing of Materials
ICEA	Insulated Cable Engineers Association
IEEE	Institute of Electrical and Electronics Engineers
NEMA	National Electric Manufacturers Association
NFPA	National Fire Protection Association
UL	Underwriters Laboratories

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.

1.5 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 CONDUCTORS AND CABLES

- A. Copper Conductor: Stranded, bare (per ASTM B3) or tinned (per ASTM B33) copper. Stranding shall be per ASTM B8 class B (7 strand) or class C (19 strand).
- B. Multi-conductor Control Cable:
1. Service Conditions: Designed for service at a maximum continuous operating temperature of 90 degrees C in dry and damp locations or 75 degrees C in wet locations. All control cables shall be suitable for installation in conduits, ducts, trays, or direct buried. Cables shall be resistant to damage from heat, flame, moisture, oil, sunlight, and mechanical abrasion which can occur in an electrical substation environment.
 2. Multi-conductor Control Cable: Rated 600 volt, Type TC, and meet the requirements of ICEA S-73-532. Individual conductors shall be stranded copper with a minimum of 30 mils of cross-linked polyethylene flame-retardant insulation. The insulated conductors shall have an overall jacket. The jacket shall be black in color and a minimum of 60 mils of a flame retardant material. When required, the cable shall include a 5 mil corrugated copper tape shield, applied longitudinally.
 3. Multi-conductor Color Code: Per ICEA Method 1, Table K-2. Color codes shall be as follows for control circuits and DC supply circuits:

4 and 12 Conductor Cables

<u>Conductor Number</u>	<u>Base Color</u>	<u>Tracer Color</u>
1	Black	
2	Red	
3	Blue	
4	Orange	
5	Yellow	
6	Brown	
7	Red	Black
8	Blue	Black
9	Orange	Black
10	Yellow	Black
11	Brown	Black
12	Black	Red

2 Conductor Cables

<u>Conductor Number</u>	<u>Base Color</u>
1	Black
2	Red

4. Multi-conductor Color Code: Per ICEA Method 1, Table K-2. Color codes shall be as follows for AC supply circuits:

4 Conductor Cables

<u>Conductor Number</u>	<u>Base Color</u>
1	Black
2	White
3	Red
4	Green

- C. Twisted Pair Control Cable (where required): Rated 300 volts, Type PLTC. Individual conductors shall be stranded copper with a polyvinyl chloride or cross-linked polyethylene flame-retardant insulation. The insulated conductor assembly shall be covered with a shield and have an overall jacket. The jacket shall be flame retardant.
- D. Internal Panel or Equipment Wiring For Field Installation: 600 volt, #12 AWG, 65 strand, copper wire with cross-linked polyethylene, type SIS insulation. Color to be gray unless noted otherwise on the drawings.

2.2 ACCESSORIES

- A. Lugs: Non-Insulated ring type insulated lugs. Ring lug terminals shall be Thomas & Betts or Burndy. NOTE: No slotted (spade type) terminal connectors shall be used.
- B. Cable Identification Tags: Panduit part no. SSM2S-C, SSM2S-D or approved equal. Tags shall be hand lettered using an ultrafine point, black ink, permanent marking pen as manufactured by Sharpie or approved equal.
- C. Cable Ties: Black plastic, weather and ultraviolet resistant, Panduit type PLT or approved equal.
- D. Wire Labels: All wires shall be labeled at both ends with heat shrink machine-printed markers. Each marker shall clearly indicate the exact individual wire designation as shown on the cable connection diagrams. Non-heat shrink markers may be permitted on a case-by-case basis upon request. Markers shall face out and will be labeled to be read with minimal effort.
- E. Cable Shield Bond Connections: Tyco Electronics Termi-Foil terminals and splices for aluminum or copper foil or strip, catalog no. 329254, with barrel for #10-#12 AWG wire. Install Termi-Foil connectors with Tyco Electronics Termi-Foil Hand Crimping Tool, catalog no. 68026.
- F. Terminations on Phoenix Terminal Blocks: When required by the manufacturer, use ferrules manufactured by Phoenix Contact, correctly sized for the conductor to be landed on that terminal.

PART 3 - EXECUTION

3.1 INSTALLATION OF CONTROL CABLES

- A. All wiring between the various pieces of equipment shall be installed as shown on the plans. All wiring shall be enclosed in raceway, cable trays, or wireways of the size specified on the plans or as approved by Engineer.
- B. The Cable Schedule, which is included in the drawings, lists power, control, and communications cables necessary for this installation. The Schedule shows the endpoints of each circuit, the number of conductors, size of the conductors, and the approximate lengths. The lengths are not cutting lengths, but are included only as an aid in laying out the circuits.
- C. Cable jackets shall be removed using the appropriate cable tool which has a settable cutter adjusted so as not to damage the conductor insulation. Conductor insulation shall be removed using the appropriate stripping tool adjusted so as not to damage the wire strands. Knives shall not be used on any cables. Any cables or wire damaged during installation shall be replaced at Contractor's expense.
- D. No cable shall be installed until the conduits for the particular cable runs have been completely installed, thoroughly cleaned and mandreled.
- E. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway. Cable lubricants recommended by the cable manufacturer may be used as an aid to the pulling of cable. Grease or other materials harmful to cable insulation shall not be allowed.
- F. All cables in each conduit shall be pulled simultaneously, using cable grips and swivels or other devices subject to the approval Engineer. Cable tension shall not exceed the maximum tension recommended by the cable manufacturer. Cables shall always be protected from mechanical injury and from moisture at the unprotected ends.
- G. Conductors shall be continuous from terminal to terminal. No splices will be permitted.
- H. Care must be taken not to have the conductors pulled tight or kinked in the conduits or boxes. Where control wires from more than one conduit pass through a common pull box, the group of wires from each conduit shall be bound together with tie wraps spaced at six inch intervals.
- I. All cable and wire shall be installed in a workmanlike manner. Cables shall be neatly trained, without interlacing, in all trays and boxes. Sufficient lengths of cable shall be pulled into equipment panels, boxes, etc., to permit a neat arrangement. Groups of control wires carried in the same conduit to a terminal block or like termination point shall, after leaving the conduit, be formed and firmly, but not tightly, tied with cable tie wraps.
- J. Cable forming shall be done in a manner that will not permit sharp bends over conduit bushings. The bending radius in any cable shall not be less than the minimum bending radius recommended by the cable manufacturer. Damaged or out-of-place cable shall be replaced at the Contractor's expense.

- K. Multi-conductor cable jackets shall be removed as required to train and terminate the conductors. In control cabinets, the cable jacket shall be left on the cable, as far as possible, to the point of the first conductor branch. At relay panels the cable jackets shall be removed to within 3 inches of the entrance to the panel or, in the case of existing substations, removed in a manner similar to existing cable jackets. Cables shall be clamped or secured in a manner to avoid tension on individual conductors or terminals. Spare conductors shall be left long enough to reach any terminal.
- L. Insulated conductors from which the jacket is removed shall be neatly trained in bundles and the bundle firmly but not tightly tied, using cable tie wraps made for this purpose. The individual conductors, including all spare conductors, of the cables shall be unlaced prior to tying in bundles.
- M. Identify all cables at terminations and in all pull boxes. Cable tags shall bear the corresponding cable number shown on the Cable Schedule. Cable numbers shall be written legibly with a permanent marker.
- N. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.
- O. Arrange cables in parallel and fasten each cable in place as required to maintain cables in parallel runs.
- P. Install all jumpers as shown on wiring and connection diagrams.
- Q. Bundle cables in the cable tray where the cables pass from the tray to relay panels so that they can pass through one opening in the tray at each side of the relay panel.
- R. Install dropout fittings to protect communications cables at exits from communication cable tray to relay panels.
- S. All communication cables that extend from relay panel to relay panel or from a relay panel to equipment located elsewhere within the control building shall be installed in the overhead communication cable tray.

3.2 WIRE TERMINATIONS

- A. Extra care shall be exercised in the use of crimp-on terminal connectors to make certain that each wire is firmly attached to the connector. Use only controlled cycle compression tools supplied by the manufacturer of the ring lug being used (Thomas & Betts or Burndy). Conductor insulation shall be squarely and evenly cut and it shall be continuous with the connector barrel.
- B. Cable shields, when present, shall be terminated by connecting the drain wire or corrugated copper tape shield to a ground bus with a compression terminal. Approved termination methods for corrugated tape shields include Tyco Electronics Termini-foil terminals (installed with controlled-cycle compression tools manufactured expressly for that purpose) and the BSW Floating Bond manufactured by Electric Motion Company, Inc. Cable shields may be

terminated at one or both ends depending on the application and on the substation design. The proper method will be noted on the drawings or defined in the Special Conditions.

- C. Solderless ring-type terminal lugs shall be used to connect all wires #8 AWG and smaller to studs.
- D. Terminations on larger conductors shall have at least two indentations.
- E. Wires terminated on Phoenix terminal blocks shall have the correct size of Phoenix ferrule installed to prevent individual strands from straying and making contact with adjacent wires and terminals.
- F. Wire sizes larger than #8 AWG terminating on 30A (GE EB25 type) terminal blocks, will require a Burndy narrow tongue lug. Where large wire sizes require use of non-insulated lugs, cover lug barrel with 600V heat shrink tubing. Strand shaving is not acceptable.

3.3 ACCESSORIES

- A. Identify all cables at terminations and in all pull boxes. Cable tags shall bear the corresponding cable number shown on the Cable Schedule. Cable numbers shall be written legibly with a permanent marker.

3.4 REMOVALS

- A. All cables and wires that are disconnected and not reused shall be completely removed from panels, wireways, and wire looms.

END OF SECTION 337243

INDIANOLA MUNICIPAL UTILITIES EAST IOWA CIRCUIT SWITCHER REPLACEMENT PROJECT - INSTALLATION

SECTION 337300 – MAJOR EQUIPMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes methods and materials for the following:
 - 1. SF6 Circuit Breakers

PART 2 - PRODUCTS

2.1 MATERIALS

- A. The following items will be furnished by the Owner.
 - 1. SF6 Circuit Breakers
- B. Equipment Identification
 - 1. Furnish equipment identification numbers as indicated on the drawings.
 - 2. Furnish all hardware including beam grips, pipe clamps for installation of the identification numbers. Mounting hardware shall be stainless steel or aluminum.

PART 3 - EXECUTION

3.1 SF6 CIRCUIT BREAKER

- A. Contractor shall unload and inspect the circuit breaker.
- B. Contractor shall completely install the circuit breakers according to the drawings. This installation shall include, but not be limited to, the following: placing breaker on the foundation, ground connections, connections between the breaker bushings and the station bus work, control duct connections, and control and power cables.
- C. The manufacturer will furnish the SF6 gas. Contractor shall fill the breakers to the proper pressure.

- D. All work on the circuit breakers shall be done according to the manufacturer's instructions.
- E. Contractor shall not connect the jumpers to the high voltage bushings until the testing of the breaker has been completed.

END OF SECTION 337300

INDIANOLA MUNICIPAL UTILITIES EAST IOWA CIRCUIT SWITCHER REPLACEMENT PROJECT - INSTALLATION

SECTION 337923 – UTILITY SUBSTATION GROUNDING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Division 33 Section Substation Testing and Commissioning.

1.2 SUMMARY

- A. This Section includes methods and materials for grounding systems and equipment.

1.3 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with UL 467 for grounding and bonding materials and equipment.

PART 2 - PRODUCTS

2.1 CONDUCTORS

- A. Conductors: Install solid conductor for No. 6 AWG and smaller, and stranded conductors for No. 4 AWG and larger, unless otherwise indicated
- B. Bare Copper Conductors:
 - 1. Solid Conductors: ASTM B 3.
 - 2. Stranded Conductors: ASTM B 8.
 - 3. Tinned Conductors: ASTM B 33.

2.2 CONNECTORS

- A. Above Grade Bolted Connectors for Conductors: Copper or copper alloy, bolted pressure-type, with silicon bronze hardware .

- B. Bolted Connectors for Fence: Copper or copper alloy, bolted pressure-type, with silicon bronze or galvanized hardware.
- C. Above Grade Compression Connectors: Copper compression, “C” or “H” style and compression terminals.
- D. Installation Hardware: Silicon bronze bolts, nuts, and spring type washers..
- E. Exothermic Welds: Materials by Cadweld or Thermoweld. Molds and powder cartridges shall be as recommended by manufacturer of the molds used.
- F. Below Grade Compression: Burndy HyGround irreversible compression connections.

2.3 GROUND RODS

- A. Copper weld, section type.
- B. Diameters and lengths as indicated on drawings.

PART 3 - EXECUTION

3.1 APPLICATIONS

- A. Ground Rods: Install ground rods vertically in locations as indicted on drawings. Drive rods to depth indicated.
- B. Underground Grounding Conductors: Install bare copper conductor, size as indicted on the drawings.
 - 1. Bury at depth below grade as indicate don the drawings (before application of surface rock).
 - 2. Duct-Bank Grounding Conductor: Bury 12 inches above duct bank when indicated as part of duct-bank installation.
 - 3. Route conductors as indicted on drawings. Install using as few joints as possible.
- C. Conductor Terminations and Connections:
 - 1. Equipment Grounding Conductor Terminations: Bolted connectors.
 - 2. Grounding Conductor Connections to Structural Steel: Bolted connectors.
 - 3. Underground Connections: **Exothermic welded connectors or irreversible compression connectors approved for below grade installation.**

3.2 EQUIPMENT GROUNDING

- A. Install insulated equipment grounding conductors with all feeders and branch circuits.
- B. Install insulated equipment grounding conductors with the following items, in addition to those required by NFPA 70:

3.3 INSTALLATION

- A. Below Grade Grounding Conductors
 - 1. Route along shortest and straightest paths. Conductor shall be free from kinks, breaks, or other damage after installation.
 - 2. Conductor shall be thoroughly cleaned prior to making connections. Follow connector manufacturer's instructions.
 - 3. All junctions and splices shall be made at ground rod locations whenever reasonably possible.
- B. Above Grade Grounding Conductors
 - 1. Ground fence and gates as indicated on the drawings.
 - 2. Ground all steel structures and equipment as indicated on the drawings. Equipment includes but is not limited to panels, junction boxes, and auxiliary equipment.
 - 3. Paint, rust, or other non-conducting material shall be removed from the contact surfaces and these surfaces shall be coated with oxide-inhibiting compound prior to making ground connections.
 - 4. Ground bars in panels shall be solidly grounded to the ground grid with #6 solid or larger copper wire.
 - 5. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.
- C. Cable Trench Grounding Conductors
 - 1. Install ground conductor in cables trench.
 - 2. Use ground clips furnished with the cable trench for installing the conductor.
- D. Conduit & Cable Sheath Grounding
 - 1. All metallic conduit shall be effectively grounded at terminations in conformance with the National Electrical Code.
 - 2. All metallic cable shielding and sheath shall be grounded at terminations.

3.4 FIELD QUALITY CONTROL

- A. All below grade grounding cables and connections shall be inspected by Owner before they are covered with earth.
- B. Perform testing of ground grid. Comply with requirements in Division 33 Substation Testing and Commissioning Section.

END OF SECTION 337923

MEMORANDUM

To: IMU Board of Trustees of the Electric, Water and Communications Utilities

From:

Date: February 23, 2026

Subject: Resolution approving the plans, specifications, form of contract and estimate of cost for East Iowa Circuit Switcher Replacement Project- Installation.

Recommendation: Agenda document is the resolution approving the plans, specifications, form of contract and estimate of cost for East Iowa Circuit Switcher Replacement Project- Installation. Board action is to approve this resolution by roll call vote.

Attachments: 1. Res 2026 Approving the Plans, Specifications, Form of Contract and Estimate of Cost for the East Iowa Circuit Switcher Replacement Project- Installati

Indianola Municipal Utilities

RESOLUTION APPROVING THE FINAL PLANS, SPECIFICATIONS, FORM OF CONTRACT, AND ESTIMATED COST FOR THE EAST IOWA CIRCUIT SWITCHER REPLACEMENT PROJECT- INSTALLATION

WHEREAS, the Indianola Municipal Utilities Board Of Trustees has authorized the preparation of the proposed plans, specifications, contract documents, and an estimate of cost for the East Iowa Circuit Switcher Replacement Project- Installation; and

WHEREAS, the Indianola Municipal Utilities Board of Trustees has deemed it necessary and desirable to undertake the construction of the Project; and

WHEREAS, IMU has provided notice for a public hearing and notice to bidders regarding the proposed plans, specifications, and form of contract for the Project, and the acceptance of bids; and

WHEREAS, a public hearing has been held regarding objections to the proposed plans, specifications, form of contract, and the cost of the Project, and no objections were raised.

NOW, THEREFORE, BE IT RESOLVED by the Indianola Municipal Utilities Board Of Trustees that the plans, specifications, and form of contract, and estimate of cost referred to in the preamble hereof be and the same are hereby approved, and the aforementioned public improvement to be constructed in accordance with the plans, specifications and form of contract is necessary and desirable.

PASSED AND APPROVED this 23rd day of February 2026.

Dom Selgrade, Chairperson

ATTEST:

Monica Thompson, Board Secretary

MEMORANDUM

To: IMU Board of Trustees of the Electric, Water and Communications Utilities

From:

Date: February 23, 2026

Subject: Resolution awarding and approving a contract to Harold K. Scholz Co. for the East Iowa Circuit Switcher Replacement Project- Installation.

Recommendation: Agenda document is the resolution awarding a contract to {contractor} for East Iowa Circuit Switcher Replacement Project- Installation.
Board action is to approve this resolution by roll call vote.

Attachments:

1. Res 2026 Awarding and Approving Contract for East Iowa Circuit Switcher Replacement Project- Installation
2. Bid Tabulation 2026-02-03
3. Contract Recommendation 2026-02-03

Indianola Municipal Utilities
RESOLUTION NO 2026

**RESOLUTION AWARDING AND APPROVING CONTRACT FOR EAST IOWA CIRCUIT SWITCHER
REPLACEMENT PROJECT- INSTALLATION**

BE IT RESOLVED BY THE BOARD OF TRUSTEES OF THE INDIANOLA MUNICIPAL UTILITIES:

Section 1. The bid from Harold K. Scholz Co. in the amount of \$181,200.00 for the East Iowa Circuit Switcher Replacement Project- Installation for Indianola Municipal Utilities, Indianola, Iowa, described in the plans and specifications previously adopted by this Board on the 29th day of December 2025, is accepted, it being the lowest and most responsible bids for the project.

Section 2. The IMU General Manager is hereby authorized to execute a contract with the contractor for the construction of the public improvement, the contract not to be binding on the Board of Trustees until approved by the Board.

PASSED AND APPROVED this 23rd day of February, 2026.

Dom Selgrade, Chairperson

ATTEST:

Monica Thompson, Board Secretary

	Bid Tabulation				
	Indianola Municipal Utilities				
	East Iowa Circuit Switcher Replacement Project				
	Bid Opening 2:00 PM January 30, 2026				
	Installation Labor				
	Bidder	Satisfactory Bid Bond	Ack Addendum 1	Ack Addendum 2	Bid Price
1	Burns Electric	X	X	X	\$231,202.65
2	HK Scholz	X	X	X	\$181,200.00
	Estimate of probable cost				\$155,000.00

February 3, 2026

Mr. Mike Metcalf
Indianola Municipal Utilities
210 West 2nd Ave
Indianola, Iowa 50125

Re: Bids for East Iowa Circuit Switcher Replacement Project Installation Contract

Dear Mike,

Bids were received at 2:00 PM on January 30th for the installation contract for the East Iowa Circuit Switcher Replacement Project. Two bids were received and are summarized below.

Bidder	Bid Amount
Burns Electric	\$231,202.65
Harold K. Scholz Co.	\$181,200.00

Both bidders attached bid bonds and acknowledged receipt of both addendums. The lump sum bid price covers all material and labor necessary to replace both circuit switchers except for the circuit breakers and disconnect switches that were purchased separately by IMU. My initial estimate was \$246,000 (in 2024) but this included some relay replacements that were ultimately not included. My revised estimate was \$155,000. The bid from HK Scholz is 17% greater than my estimated cost.

HK Scholz is located in the Omaha area and manufactures switchgear and relay panels and also works as a substation electrical contractor. HK Scholz has worked for IMU in the past including some of the original construction of the East Iowa Substations. HK Scholz has also worked for other P&E clients over the years. We have been satisfied with their work and performance. I have spoken with Michael Clark of HK Scholz. He has assured me that they understand the scope of work and are comfortable with their bid amount.

HK Scholz can start procuring material as soon as the contract is approved. There are a handful of connectors that have a lead time of a couple of months. HK Scholz is checking with alternate suppliers to find the most favorable lead times. (Burns Electric noted similar concerns.)

February 3, 2026
Mr. Mike Metcalf
Page 2 of 2

I recommend that IMU accept the bid from HK Scholz and enter into a contract with them for this project.

If the Board accepts this recommendation, I will prepare a Notice of Award and send it to HK Scholz, and request that they provide the required bonds and insurance certificates. I will also send them two copies of the Contract ready for signatures. After the bonds, insurance certificates, and signed contracts are received and approved and IMU has countersigned the contracts, I will issue the Notice to Proceed.

Please let me know if you have any questions concerning this recommendation.

Sincerely,

A handwritten signature in blue ink that reads "Jared Kline". The signature is written in a cursive, flowing style.

Jared Kline, P.E.

MEMORANDUM

To: IMU Board of Trustees of the Electric, Water and Communications Utilities

From:

Date: February 23, 2026

Subject: Public hearing regarding the plans, specifications, form of contract and estimate of cost for N. 6th Street Place Water Main Improvements Project.

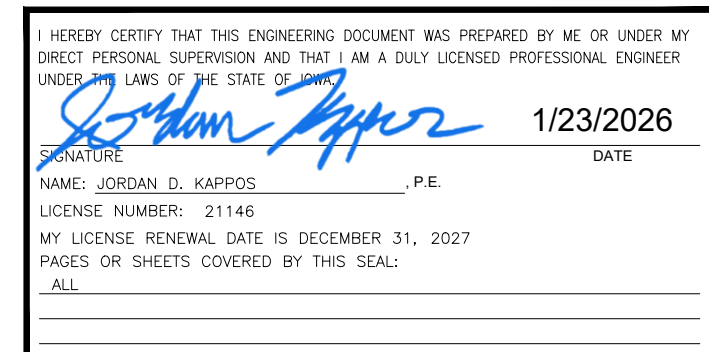
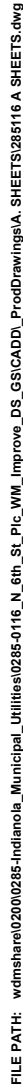
Recommendation: Agenda document is the plans, specifications, form of contract and estimate of cost.

The board action is to open the public hearing, take any public or staff comment, and then to close the public hearing.

Attachments:

1. 285116 PLANS
2. 285116 SPECS
3. 285116_N 6th St Plc WM_Cost Estimate
4. 285116 Addendum No. 1

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Page 174 of 353

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GENERAL LEGEND

	SURVEY LINE & STATION INDICATOR		CULVERT; SIZE AND TYPE
	CONCRETE SURFACE		FLARED END SECTION
	ASPHALT SURFACE		RAILROAD
	CONCRETE W/ASPHALT OVERLAY		MAILBOX
	LOW GRADE ASPHALT SURFACE		FENCE (MISC.)
	GRANULAR SURFACE		SECURITY FENCE
	DIRT SURFACE		WOOD FENCE
	BRICK SURFACE		SILT FENCE
	SURFACING REMOVAL/REPLACEMENT		CHAIN LINK FENCE
	EARTH SECTION		PROPERTY LINE
	EXISTING SANITARY SEWER AND SIZE		FOUND PROPERTY PIN
	EXISTING STORM SEWER AND SIZE		FOUND SECTION CORNER
	EXISTING WATER MAIN AND SIZE		SET PROPERTY PIN
	EXISTING FORCE MAIN AND SIZE		SET SECTION CORNER
	GAS MAIN AND SIZE		PLAT BOUNDARY
	UNDERGROUND POWER LINE		BUILDING
	OVERHEAD POWER LINE		ELEVATION MARKER
	UNDERGROUND TELEPHONE LINE		CENTERLINE
	CABLE TELEVISION LINE		DIAMETER
	FIBER OPTICS		ELEVATION
	DRAINAGE COURSE		POLYVINYLCHLORIDE PIPE
	NEW CURB INTAKE		CAST IRON PIPE
	NEW AREA OR BEEHIVE INTAKE		DUCTILE IRON PIPE
	NEW STORM/MANHOLE		CORRUGATED METAL PIPE
	NEW SANITARY/MANHOLE		VITRIFIED CLAY PIPE
	NEW FORCE MAIN		REINFORCED CONCRETE PIPE
	NEW HYDRANT		REINFORCED CONCRETE ARCH PIPE
	NEW WATER VALVE		LINED REINFORCED CONCRETE PIPE
	NEW WATER MAIN		LINED CONCRETE PRESSURE PIPE
	EXISTING SANITARY MANHOLE		STATION
	EXISTING STORM WATER MANHOLE		BENCH MARK AND NUMBER
	EXISTING ELECTRIC MANHOLE		RIGHT-OF-WAY
	EXISTING TELEPHONE MANHOLE		POINT OF INTERSECTION
	EXISTING WATER MANHOLE		POINT ON TANGENT
	EXISTING HYDRANT		LINEAR FEET
	EXISTING WATER VALVE		SOIL BORING AND NUMBER
	GAS VALVE		POINT OF VERTICAL CURVATURE
	UTILITY POLE		POINT OF VERTICAL TANGENCY
	GUY ANCHOR		VERTICAL CURVE
	STREET LIGHT		POINT OF CURVATURE
	SIGN		POINT OF TANGENCY
	COMMUNICATION JUNCTION BOX		MIDDLE ORDINATE
	TRAFFIC SIGNALS		DRAWING
	TRAFFIC CONTROLLER		CONTROL POINT AND NUMBER
	PEDESTRIAN BUTTON		TYPICAL
	RAILROAD SIGNAL		HIGH PRESSURE GAS
	UTILITY ACCESS COVER		INVERT
	PARKING METER		EACH WAY, EACH FACE
	TREE		AT
	EVERGREEN		DRAWING NUMBER
	STUMP		
	BUSH, SHRUB OR HEDGE		

NOTE: THIS IS A GENERAL LEGEND. ITEMS MAY OR MAY NOT APPEAR ON DRAWINGS.

GENERAL NOTES

- ALL ELEVATIONS ARE TO NAVD 88 DATUM.
- ALL NORTHING AND EASTING COORDINATES ARE TO NAD 83, IOWA STATE PLANE COORDINATE SYSTEMS - SOUTH ZONE (1402) / NORTH ZONE (1401).
- REMOVE AND REPLACE ALL STREET SIGNS AS DIRECTED BY ENGINEER. COST IS INCIDENTAL TO CONSTRUCTION.
- SHAPE ALL DITCHES TO DRAIN AFTER CONSTRUCTION.
- CONFIRM LOCATION AND DEPTH OF ALL EXISTING UNDERGROUND UTILITIES AS REQUIRED TO ELIMINATE CONFLICTS PRIOR TO CONSTRUCTION. ALLOW UTILITY PERSONNEL TO RELOCATE UTILITIES WHERE CONFLICTS OCCUR.
- DO NOT INTERRUPT EXISTING UTILITIES OR INDIVIDUAL SERVICES UNLESS DIRECTED BY ENGINEER.
- LOCATIONS OF CONSTRUCTION LIMIT LINES SHOWN ON PLANS ARE APPROXIMATE. ENGINEER WILL LOCATE CONSTRUCTION LIMITS IN FIELD. CONFINE ALL CONSTRUCTION OPERATIONS, INCLUDING ACCESS TO WORK, TO CONSTRUCTION LIMITS.
- SET MANHOLE COVERS, VALVE BOXES AND STRUCTURES FLUSH WITH PROPOSED GRADES UNLESS OTHERWISE NOTED.
- STATIONING IS ALONG CENTER LINE OF WATER MAIN, UNLESS OTHERWISE NOTED.
- PROTECT UTILITY POLES, LINES AND APPURTENANCES NOT SHOWN FOR RELOCATION.
- RESET ALL PROPERTY PINS DISTURBED BY CONSTRUCTION; PINS RESET BY REGISTERED LAND SURVEYOR; COST IS INCIDENTAL TO CONSTRUCTION.
- PROTECT ALL SURFACING, NOT INDICATED BY SHADING FOR REMOVAL AND REPLACEMENT FROM DAMAGE DURING CONSTRUCTION.
- REPLACE WATER SERVICES IN DIRECT CONFLICT WITH NEW PIPE WITH NEW SERVICES FROM MAIN TO CURB STOP. PLUG EXISTING SERVICE AT MAIN; CONSTRUCT STORM SEWER UNDER EXISTING SERVICES WITH ADEQUATE CLEARANCE.
- CONTRACTOR RESPONSIBLE FOR PRESERVING MAILBOXES DURING CONSTRUCTION. ANY DAMAGED MAILBOXES ARE TO BE REPLACED TO ORIGINAL CONDITION, COORDINATE WITH OWNER AND ENGINEER TO DETERMINE REMEDIATION MEASURES AND FINAL LOCATION. COST IS INCIDENTAL TO CONSTRUCTION.

PROTECTION OF VEGETATION

TREES AND OTHER VEGETATION WHICH MAY BE REMOVED ARE MARKED WITH AN "X" OVER THE APPROPRIATE SYMBOL. FOR EXAMPLE 12" INDICATES THE REMOVAL OF A 12" TREE. REPLACEMENT, BY CONTRACTOR, OF THESE ITEMS IS NOT REQUIRED. TUNNEL, INSTALL TIGHT SHEETING, HAND EXCAVATE OR EMPLOY OTHER MEANS APPROVED BY ENGINEER TO PROTECT EXPOSED PORTIONS AND ROOT SYSTEMS OF TREES AND OTHER VEGETATION NOT SCHEDULED FOR REMOVAL. IF TREES AND OTHER VEGETATION NOT SCHEDULED FOR REMOVAL ARE DAMAGED DURING CONSTRUCTION, REPLACE IN KIND AND SIZE AT NO COST TO CITY OR PROPERTY OWNER.

Subsurface Utility Quality Levels	
Level	Description
QL A	Process of designating and locating using non-destructive vacuum excavation techniques. This is the most accurate level of measurement and yields good 3D positions of subsurface utilities.
QL B	Obtained through the application of appropriate surface geophysical methods to determine the existence and approximate horizontal position of subsurface utilities.
QL C	Uses on surface features to predict the utility location obtained by surveying and plotting visible above-ground utility features and by using professional judgement in correlating this information to Quality Level D.
QL D	Obtained by integrating existing records, atlases, or oral recollections of the locations of existing subsurface utilities. This is the least reliable method of utility location and is often inaccurate and not up to date.
ASE is capable and experienced in all Quality Levels of SUE	

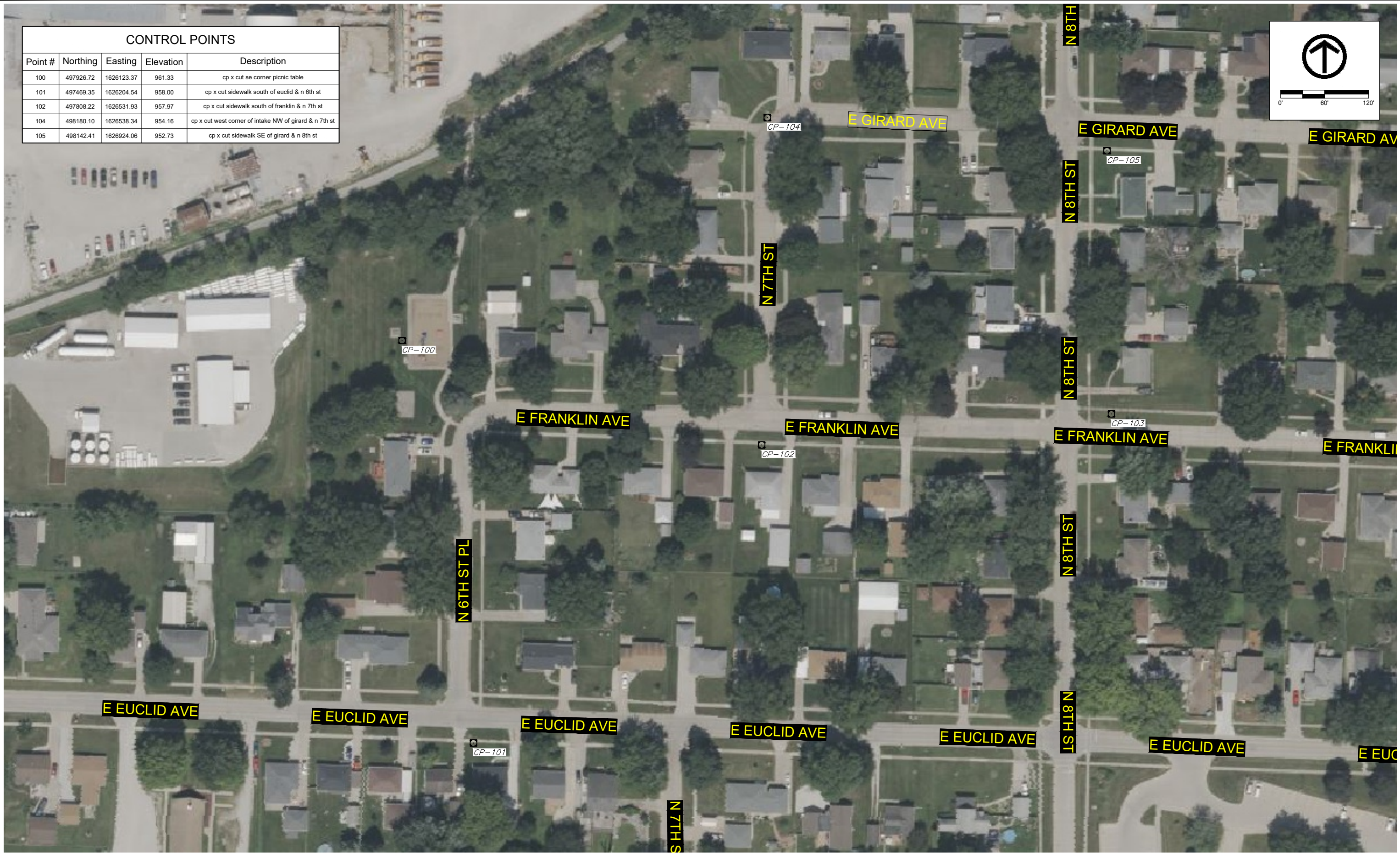
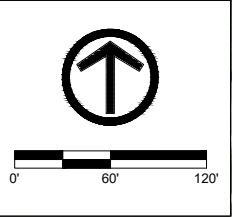
DATE	REVISIONS	SCALE	AS NOTED	N 6TH STREET PLACE WATER MAIN IMPROVEMENTS INDIANOLA MUNICIPAL UTILITIES		GENERAL NOTES AND LEGEND		SHEET NO.
		DRAWN	C. VOTE					A.2
		CHECKED	V. DRISCOLL	6775 Vista Drive • West Des Moines, Iowa 50266-9305 515-225-8000 • 515-255-7848(FAX) • 1-800-241-8000				PROJECT 285116
		APPROVED	J. KAPPOS					
		DATE	1-23-26					
		ISSUED FOR	BIDDING					



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CONTROL POINTS				
Point #	Northing	Easting	Elevation	Description
100	497926.72	1626123.37	961.33	cp x cut se corner picnic table
101	497469.35	1626204.54	958.00	cp x cut sidewalk south of euclid & n 6th st
102	497808.22	1626531.93	957.97	cp x cut sidewalk south of franklin & n 7th st
104	498180.10	1626538.34	954.16	cp x cut west corner of intake NW of girard & n 7th st
105	498142.41	1626924.06	952.73	cp x cut sidewalk SE of girard & n 8th st



DATE	REVISIONS	SCALE	AS NOTED
		DRAWN	C. VOTE
		CHECKED	V. DRISCOLL
		APPROVED	J. KAPPOS
		DATE	1-23-26
		ISSUED FOR	BIDDING

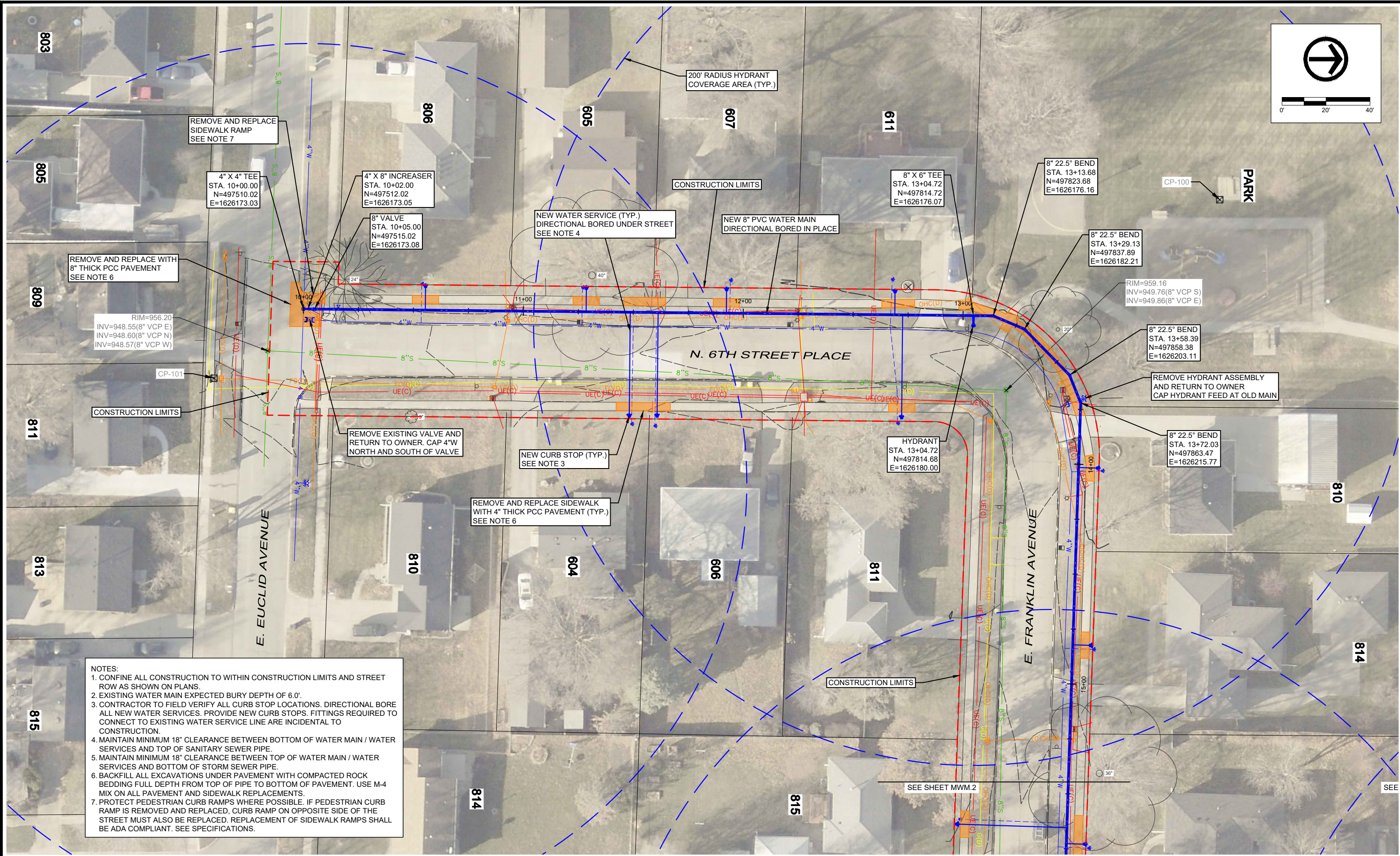


N 6TH STREET PLACE WATER MAIN IMPROVEMENTS INDIANOLA MUNICIPAL UTILITIES	
6775 Vista Drive 515-225-8000	• West Des Moines, Iowa 50266-9305 • 515-255-7848(FAX) • 1-800-241-8000

CONTROL SHEET	
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SHEET NO.	
G.1	
PROJECT	285116

X:\REFS: 285116 TOPO & 285116 TOPO & wc_parcels4-2-25adjusted
FILE PATH: w:\mshare\0200\0285-Indianola_Municipal_Utillies\0285-0116_N_6th_St_Plc_WM_Improve_DS_GSCADD_ProdDrawings\MWM_SHEETS\285116-PLAN-WTR.dwg
PLOTTED: Friday, January 23, 2026 3:57:25 PM



- NOTES:
1. CONFINE ALL CONSTRUCTION TO WITHIN CONSTRUCTION LIMITS AND STREET ROW AS SHOWN ON PLANS.
 2. EXISTING WATER MAIN EXPECTED BURY DEPTH OF 6.0'.
 3. CONTRACTOR TO FIELD VERIFY ALL CURB STOP LOCATIONS. DIRECTIONAL BORE ALL NEW WATER SERVICES. PROVIDE NEW CURB STOPS. FITTINGS REQUIRED TO CONNECT TO EXISTING WATER SERVICE LINE ARE INCIDENTAL TO CONSTRUCTION.
 4. MAINTAIN MINIMUM 18" CLEARANCE BETWEEN BOTTOM OF WATER MAIN / WATER SERVICES AND TOP OF SANITARY SEWER PIPE.
 5. MAINTAIN MINIMUM 18" CLEARANCE BETWEEN TOP OF WATER MAIN / WATER SERVICES AND BOTTOM OF STORM SEWER PIPE.
 6. BACKFILL ALL EXCAVATIONS UNDER PAVEMENT WITH COMPACTED ROCK BEDDING FULL DEPTH FROM TOP OF PIPE TO BOTTOM OF PAVEMENT. USE M-4 MIX ON ALL PAVEMENT AND SIDEWALK REPLACEMENTS.
 7. PROTECT PEDESTRIAN CURB RAMPS WHERE POSSIBLE. IF PEDESTRIAN CURB RAMP IS REMOVED AND REPLACED, CURB RAMP ON OPPOSITE SIDE OF THE STREET MUST ALSO BE REPLACED. REPLACEMENT OF SIDEWALK RAMPS SHALL BE ADA COMPLIANT. SEE SPECIFICATIONS.

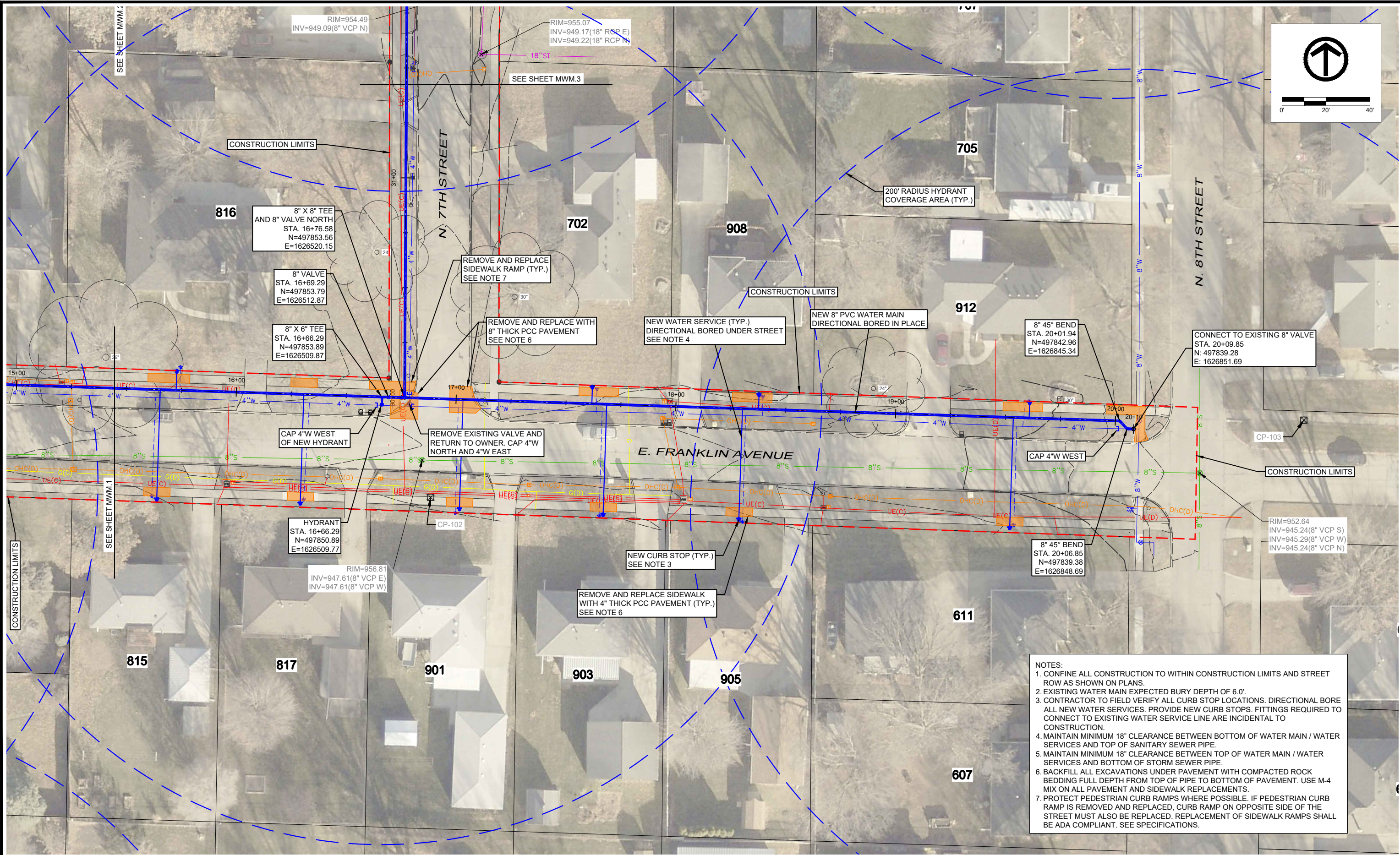
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		DRAWN	C. VOTE
		CHECKED	V. DRISCOLL
		APPROVED	J. KAPPOS
		DATE	1-23-26
		ISSUED FOR	BIDDING



N 6TH STREET PLACE WATER MAIN IMPROVEMENTS	
INDIANOLA MUNICIPAL UTILITIES	
6775 Vista Drive	West Des Moines, Iowa 50266-9305
515-225-8000	515-255-7848(FAX) • 1-800-241-8000

WATER MAIN PLAN	
MWM.1	
PROJECT	285116

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PLOTTED: Friday, January 23, 2026 3:37:27 PM



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		APPROVED	J. KAPPOS
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		ISSUED FOR	BIDDING



N 6TH STREET PLACE WATER MAIN IMPROVEMENTS

INDIANOLA MUNICIPAL UTILITIES

6775 Vista Drive

515-225-8000

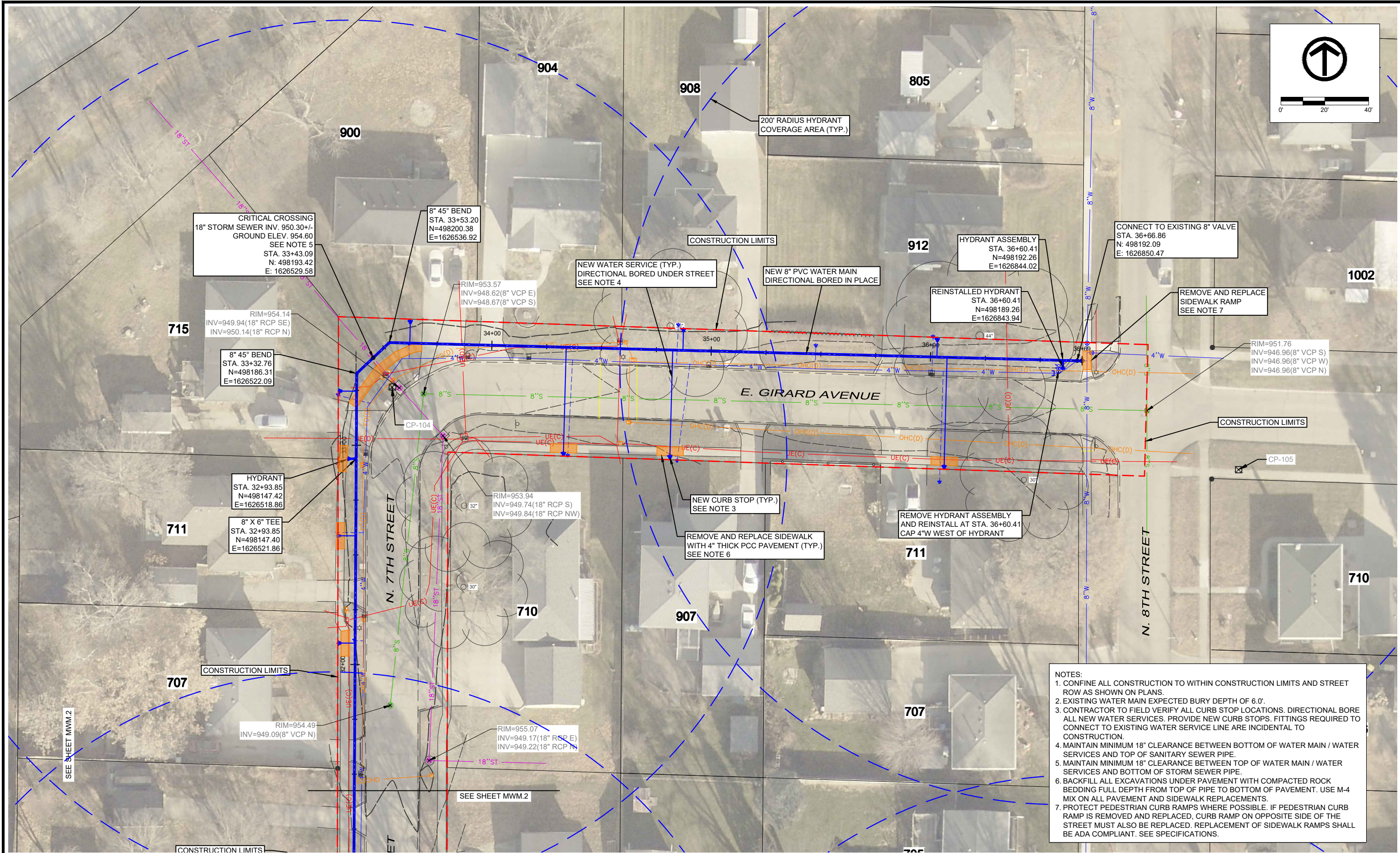
West Des Moines, Iowa 50266-9305

515-255-7848(FAX)

1-800-241-8000

SHEET NO.
MWM.2
PROJECT 285116

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 PLOTTED: Friday, January 23, 2026 3:57:29 PM



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DATE	REVISIONS	SCALE	AS NOTED	 VEENSTRA & KIMM INC. A Kleinfelder Company	N 6TH STREET PLACE WATER MAIN IMPROVEMENTS INDIANOLA MUNICIPAL UTILITIES	WATER MAIN PLAN	SHEET NO.
		DRAWN	C. VOTE				MWM.3
		CHECKED	V. DRISCOLL				
		APPROVED	J. KAPPOS				
		DATE	1-23-26				
		ISSUED FOR	BIDDING		6775 Vista Drive • West Des Moines, Iowa 50266-9305 515-225-8000 • 515-255-7848(FAX) • 1-800-241-8000	PROJECT 285116	



SPECIFICATIONS

FOR

NORTH 6TH STREET PLACE WATER MAIN IMPROVEMENTS

***INDIANOLA MUNICIPAL UTILITIES
INDIANOLA, IOWA***



SPECIFICATIONS
FOR
NORTH 6TH STREET PLACE WATER MAIN IMPROVEMENTS
INDIANOLA MUNICIPAL UTILITIES
INDIANOLA, IOWA

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signed:

Date:



1/23/2026

Jordan D. Kappos

Iowa License No. 21146

My license renewal date is December 31, 2025

Detailed parts covered by this seal:

All



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

INDEX

NORTH 6TH STREET PLACE WATER MAIN IMPROVEMENTS
INDIANOLA MUNICIPAL UTILITIES
INDIANOLA, IOWA

<u>SECTION</u>	<u>TITLE</u>	<u>PAGE</u>
DIVISION 0 - BIDDING AND CONTRACT DOCUMENTS		
NOTICE OF PUBLIC HEARING		NPH-1
NOTICE TO BIDDERS		NB-1
INSTRUCTIONS TO BIDDERS		IB-1
PROPOSAL		P-1
BIDDER STATUS FORM		
BID BOND		BB-1
CONTRACT		C-1
BOND		B-1
GENERAL CONDITIONS		GC-1
SPECIAL CONDITIONS		SC-1
PLANS LIST		PL-1
<u>DETAILED SPECIFICATIONS</u>		
PART 1	GENERAL REQUIREMENTS	1-1
PART 2	SPECIAL CONSTRUCTION	2-1
PART 3	EXCAVATION AND BACKFILL	3-1
PART 4	WATER MAINS AND APPURTENANCES	4-1
PART 5	CONCRETE	5-1
PART 6	REINFORCING STEEL	6-1
PART 7	EARTHWORK AND INCIDENTALS FOR PAVEMENT	7-1
PART 8	PORTLAND CEMENT CONCRETE PAVEMENT	8-1

NOTICE OF PUBLIC HEARING

NOTICE OF PUBLIC HEARING ON PLANS AND SPECIFICATIONS, PROPOSED FORM OF CONTRACT AND ESTIMATE OF COST FOR CONSTRUCTION OF THE NORTH 6TH STREET PLACE WATER MAIN IMPROVEMENTS FOR THE INDIANOLA MUNICIPAL UTILITIES, INDIANOLA, IOWA.

At 5:30 P.M. on the 9th day of February, 2026, the Board of Trustees of said Utilities will, in said Board Room, hold a hearing and said Board proposes to adopt plans, specifications, form of contract and estimate of cost and, at the time, date and place specified above, or at such time, date and place as then may be fixed, to act upon proposals and enter into a contract for the construction of the following improvements:

NORTH 6TH STREET PLACE WATER MAIN IMPROVEMENTS

Construct North 6th Street Place Water Main Improvements including all labor, materials and equipment necessary for approximately 1,700 linear feet of 8-inch directionally bored water main, water services, hydrants, valves, surface restoration and miscellaneous associated work, including cleanup.

The project is located North of E. Euclid Avenue and West of N. 8 Street, on N. 6th Street Place, E. Franklin Avenue, N. 7th Street, and E. Girard Avenue.

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

This notice is given by order of the Board of Trustees of Indianola Municipal Utilities, Indianola, Iowa.

BOARD OF TRUSTEES
INDIANOLA MUNICIPAL UTILITIES
INDIANOLA, IOWA

Dom Selgrade, Chairperson

Attest:

Monica Thompson, Board of Trustees Secretary

NPH-1

285116

NOTICE TO BIDDERS

NOTICE OF TAKING BIDS FOR THE CONSTRUCTION OF THE NORTH 6TH STREET PLACE WATER MAIN IMPROVEMENTS FOR THE INDIANOLA MUNICIPAL UTILITIES, INDIANOLA, IOWA.

Sealed proposals shall be filed with the Clerk of the Indianola Municipal Utilities in the Board Room of the Indianola Municipal Building, 210 W. 2nd Avenue, Indianola, Iowa before 2:00 P.M. local time on the 3rd day of February, 2026 for the construction of the North 6th Street Place Water Main Improvements, and work incidental thereto, as described in the plans and specifications therefor, now on file in the office of the Clerk. Proposals will be opened and the amount of the bids announced in said Board Room by the Clerk at the time and date specified above.

Proposals will be acted upon by the Board of Trustees of Indianola Municipal Utilities at 5:30 P.M. on the 9th day of February, 2026, or at such later time and place as then may be fixed.

The work to be done is as follows:

NORTH 6TH STREET PLACE WATER MAIN IMPROVEMENTS

Construct North 6th Street Place Water Main Improvements including all labor, materials and equipment necessary for approximately 1,700 linear feet of 8-inch directionally bored water main, water services, hydrants, valves, surface restoration and miscellaneous associated work, including cleanup.

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

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

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

NB-1

285116

Notice to Bidders

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

In accordance with Iowa statutes, a resident bidder shall be allowed a preference as against a nonresident bidder from a state or foreign country if that state or foreign country gives or requires any preference to bidders from that state or foreign country, including but not limited to any preference to bidders, the imposition of any type of labor force preference, or any other form of preferential treatment to bidders or laborers from that state or foreign country. The preference allowed shall be equal to the preference given or required by the state or foreign country in which the nonresident bidder is a resident. In the instance of a resident labor force preference, a nonresident bidder shall apply the same resident labor force preference to a public improvement in this state as would be required in the construction of a public improvement by the state or foreign country in which the nonresident bidder is a resident.

Failure to submit a fully completed Bidder Status Form with the bid may result in the bid being deemed nonresponsive and rejected.

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

The Board reserves the right to defer acceptance of any proposal for a period not to exceed thirty (30) calendar days from the deadline for submission of proposals.

The successful bidder will be required to furnish a bond in an amount equal to one hundred percent (100%) of the contract price, said bond to be issued by responsible surety approved by the Board and shall guarantee the faithful performance of the contract and the terms and conditions therein contained, and shall guarantee the prompt payment for all materials and labor and protect and save harmless the Board from claims and damages of any kind caused by the operations of the Contractor, and shall guarantee the work against faulty workmanship and materials for a period of four (4) years after its completion and acceptance by the Board of Trustees.

The work will commence within ten (10) calendar days after the date set forth in written Notice to Proceed and shall be completed by October 31, 2026.

NB-2

285116

Liquidated damages in the amount of Five Hundred Dollars (\$500.00) per consecutive calendar day will be assessed for each day that the project is not completed after October 31, 2026.

A sales tax exemption certificate will be available for all material purchased for incorporation in the project.

Payment for said improvements will be made in cash from sale of general obligation bonds or notes, water revenue bonds or notes, or from such funds as are legally available for said purposes. Any combination of the above methods of payment may be used at the discretion of the Board of Trustees.

Payment to the Contractor will be on the basis of monthly estimates equivalent to ninety-seven percent (97%) of the contract value of the work completed and payments made to material suppliers for materials ordered specifically for the project and delivered to the site during the preceding calendar month. Estimates will be prepared each month by the Contractor, subject to the approval of the Engineer, who will certify to the Board for payment each approved estimate on or before the tenth (10th) day of the following month. Such monthly payments shall in no way be construed as an act of acceptance for any part of the work partially or totally completed. Upon completion of the work and its acceptance by the Board, the Contractor will be paid an amount which, together with previous payments, will equal ninety-seven percent (97%) of the contract price of the contract. Final payment of the remaining three percent (3%) will be made not less than thirty-one (31) days after completion and acceptance by resolution of the Board of Trustees of the completed contract, subject to the conditions and in accordance with the provisions of Chapter 573 of the Code of Iowa. No such partial or final payments will be due until the Contractor has certified to the Clerk that the materials, labor and services involved in each estimate have been paid for in accordance with the requirements stated in the specifications.

Plans and specifications governing the construction of the proposed improvements, and also the prior proceedings of the Board of Trustees referring to and defining said proposed improvements are hereby made a part of this notice and the proposed contract by reference and the proposed contract shall be executed in compliance therewith.

Copies of said plans and specifications and form of contract are now on file in the office of the Clerk. Copies may be obtained from VEENSTRA & KIMM, INC., 6775 Vista Drive, West Des Moines, Iowa 50266, at no charge.

Notice to Bidders

This notice is given by order of the Board of Trustees of the Indianola Municipal Utilities,
Indianola, Iowa.

BOARD OF TRUSTEES
INDIANOLA MUNICIPAL UTILITIES
INDIANOLA, IOWA

Dom Selgrade, Chairperson

Attest:

Monica Thompson, Board of Trustees Secretary

NB-4

285116

INSTRUCTIONS TO BIDDERS

NORTH 6TH STREET PLACE WATER MAIN IMPROVEMENTS INDIANOLA MUNICIPAL UTILITIES INDIANOLA, IOWA

INDEX

1. DEFINITION OF TERMS
2. CONTRACT DOCUMENTS
3. METHOD OF BIDDING
4. QUALIFICATIONS OF BIDDERS
5. SUBMISSION OF BIDS
6. EVALUATION OF BIDS
7. WITHDRAWAL OF BIDS
8. BID SECURITY
9. EXAMINATION OF WORK
10. EXECUTION OF CONTRACT
11. CONTRACT TERMINATION
12. TAXES
13. PREFERENCE FOR LABOR AND MATERIALS
14. PAYMENT
15. APPROVAL OF MATERIALS
16. SOIL BORINGS
17. PERIOD OF GUARANTEE AND BOND
18. BIDDER STATUS FORM

1. DEFINITION OF TERMS

- 1.1 "Owner", "Water Works", or "Utility" shall mean the Indianola Municipal Utilities, Indianola, Iowa, acting through the Board of Trustees or an authorized representative of Board of Trustees.
- 1.2 "Person" shall mean any individual partnership, society, association, joint stock company, corporation, estate, receiver, trustee, assignee or referee, whether appointed by a court or otherwise, and any combination of individuals.
- 1.3 "Bidder" shall mean any person who submits a proposal to furnish the work described in the Contract Documents.

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285116

- 1.4 "Contractor" shall mean the person with whom the Owner may enter into contract for the execution of the work specified.
- 1.5 "Subcontractor" shall mean the person supplying materials, labor, equipment and appurtenances for the work, such person having contractual relations with the Contractor, but not with the Owner.
- 1.6 "Engineer" shall mean Veenstra & Kimm, Inc., West Des Moines, Iowa.
- 1.7 "Standard Drawings" shall mean construction detail drawings bound with these specifications.
- 1.8 "Work" shall mean the work to be done and the equipment, supplies and materials to be furnished under the contract, unless some other meaning is indicated by the context.
- 1.9 "Or Equal" shall follow manufacturers' names used to establish standards and, if not stated, is implied.

2. CONTRACT DOCUMENTS

- 2.1 The Contract Documents, sometimes referred to as the "plans and specifications," shall mean and include the following parts as used herein:
 - 2.1.1 Notice to Bidders
 - 2.1.2 Instructions to Bidders
 - 2.1.3 Proposal
 - 2.1.4 Contract
 - 2.1.5 Bond
 - 2.1.6 General Conditions
 - 2.1.7 Special Conditions
 - 2.1.8 Plans List
 - 2.1.9 Plans listed in the Specifications
 - 2.1.10 Addenda issued to the foregoing.

3. METHOD OF BIDDING

- 3.1 Bidders shall submit unit and lump sum prices for the work covered by the plans and specifications. Prices shall cover complete work and include all costs incidental thereto, unless indicated otherwise.
- 3.2 Bids will be computed using quantities shown in proposal. Unit price quantities are approximate and only for comparison of bids. Engineer retains right to change location, quantities and combination of units as may be required during progress of construction. Compensation due Contractor will be computed on basis of final quantities of completed work.
 - 3.2.1 In the event of discrepancies between unit prices and unit price extensions listed in bidder's proposal, unit prices shall govern and unit price extensions and total bid shall be corrected, as necessary, for agreement with unit prices. The total price will be determined on the basis of corrected extensions of the unit prices.
 - 3.2.2 In the case of an obvious and serious clerical or entry error in the Proposal where the Owner is able to clearly determine the bidder's intent from the Proposal the Owner may waive irregularities that are in the best interest of the Owner as long as the integrity of the bidding process is not affected by waiving the clerical or entry irregularity.
- 3.3 Unit prices for payment items included in the specifications, but not listed in the PROPOSAL, will be negotiated, if needed.

4. QUALIFICATIONS OF BIDDERS

- 4.1 Bidders shall be prepared to satisfy Owner as to integrity, experience, adequacy of equipment, personnel and financial ability to perform work specified.
- 4.2 If successful bidder is a non-Iowa corporation, it shall submit proof to Owner prior to execution of contract that it has been authorized by Secretary of State to do business in Iowa.

5. SUBMISSION OF BIDS

- 5.1 Bidders shall submit the Proposal stamped "Official Bid". The Proposal stamped "Official Bid" is considered the original Proposal and shall be used for bidding. Submit in a sealed envelope. Envelope shall bear return address of the bidder and shall be addressed as follows:

To:
Board of Trustees
Indianola Municipal Utilities
210 W. 2nd Avenue
Indianola, Iowa 50125

Proposal for:
North 6th Street Place
Water Main Improvements

- 5.2 Bids shall be signed by a legally authorized representative of bidder.
- 5.3 Bidders shall submit with Proposal the following documents:
- 5.3.1 Bid Bond.
- 5.3.2 Bidder Status Form.

6. EVALUATION OF BIDS

- 6.1 Award of contract will be made to the lowest responsive, responsible bidder. The Board of Trustees reserves the right to reject any and all bids and to waive informalities and technicalities and to enter into such contract as it shall deem for the best interest of the Indianola Municipal Utilities.

7. WITHDRAWAL OF BIDS

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

8. BID SECURITY

- 8.1 Each bid shall be accompanied by bid security in the form and amount as set out in the Notice to Bidders.

- 8.2 Bid security shall be enclosed in the sealed envelope with the bid, or in a separate sealed envelope.
- 8.3 The bid security shall be forfeited and become the property of the Owner in case the bidder fails or refuses to enter into contract and to furnish bond within 10 calendar days after his proposal shall have been accepted.
- 8.4 Bid security of the unsuccessful bidders will be returned as soon as the successful bidder is determined and has entered into a contract; bid security of successful bidder will be returned upon execution of contract and furnishing of bond.
- 8.5 Bidders shall use bid bond form included with specifications.

9. EXAMINATION OF WORK

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

10. EXECUTION OF CONTRACT

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

11. CONTRACT TERMINATION

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

12. TAXES

12.1 The Owner will issue a sales tax exemption certificate for all materials purchased on the project. The Owner will issue the appropriate tax exemption certificates and authorization letters to the Contractor and all subcontractors completing work on the project. Tax exemption certificates are applicable only for the specific project for which the tax exemption certificate is issued.

12.2 Contractor shall provide a listing to the Owner identifying all appropriate subcontractors qualified for use of the tax exemption certificate. Contractor and subcontractors may make copies of the certificate and provide, to each supplier providing construction material, a copy of the tax exemption certificate.

12.3 Income tax:

12.3.1 Successful bidder is subject to payment of Iowa income tax on income from this work in amounts prescribed by law.

12.3.2 If successful bidder is a non-Iowa partnership, individual or association, he shall furnish evidence prior to execution of contract, that bond or securities have been posted with the Iowa Department of Revenue in the amount required by law.

13. PREFERENCE FOR LABOR AND MATERIALS

13.1 By virtue of statutory authority, preference will be given to products and provisions grown and coal produced within the State of Iowa, and to Iowa domestic labor, to the extent lawfully required under Iowa Statutes; provided that the award of contract will be made to the lowest responsible bidder submitting the lowest responsive bid.

14. PAYMENT

14.1 Payment will be made as set forth in Notice to Bidders.

14.2 Payment will be made on the basis of estimates prepared by Contractor and approved by Engineer, solely for the purpose of payment; approval by Engineer shall not be deemed approval of workmanship or materials.

15. APPROVAL OF MATERIALS

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

16. SOIL BORINGS

16.1 Soil borings have not been made along proposed route of work.

16.2 Obtain permission of Owner to make soil borings along proposed route of proposed work. Bidders are responsible for obtaining utility locates and for any utilities damaged by soil boring activities.

17. PERIOD OF GUARANTEE AND BOND

17.1 Contractor shall guarantee work for a period of four (4) years from date of final acceptance. Surety bond furnished by Contractor shall run for a like period.

18. BIDDER STATUS FORM

18.1 In accordance with the requirements of the Iowa Department of Labor all Bidders must submit a fully completed Bidder Status Form. The Bidder Status Form must be included with and is considered an essential attachment to the Proposal. Any Proposal that does not include a fully completed Bidder Status Form may result in the Proposal being determined non-responsive.

PROPOSAL

NORTH 6TH STREET PLACE WATER MAIN IMPROVEMENTS
INDIANOLA MUNICIPAL UTILITIES
INDIANOLA, IOWA

Name of Bidder _____

Address of Bidder _____

To: Board of Trustees
Indianola Municipal Utilities
210 West 2nd Avenue
Indianola, Iowa 50125

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

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

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

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

Bidder _____

By _____

Title _____

P-1

285116

PROPOSAL SCHEDULE

NORTH 6TH STREET PLACE WATER MAIN IMPROVEMENTS

1. Construct North 6th Street Place Water Main Improvements for the following unit and lump sum prices:

<u>Item No.</u>	<u>Description</u>	<u>Unit</u>	<u>Estimated Quantity</u>	<u>Unit Price</u>	<u>Extended Price</u>
1.1	Mobilization	LS	xxxxx	_____	\$ _____
1.2	Traffic Control	LS	xxxxx	_____	_____
1.3	Construction Staking	LS	xxxxx	_____	_____
1.4	Water Main Directional Bored, PVC, 8"	LF	1,700	_____	_____
1.5	Gate Valve, 8"	EA	1	_____	_____
1.6	Hydrant Assembly	EA	3	_____	_____
1.7	Water Service Connections	EA	29	_____	_____
1.8	Curb Stop and Box	EA	29	_____	_____
1.9	Water Service Pipe	LF	850	_____	_____
1.10	TEE, 4"x4" & Valve, 8"	EA	1	_____	_____
1.11	Pavement, PCC, Remove & Replace, 8"	SY	75	_____	_____
1.12	Pavement, PCC, Remove & Replace, 4"	SY	225	_____	_____
1.13	Detectable Warning Panels	SF	80	_____	_____

				<u>Proposal</u>	
<u>Item No.</u>	<u>Description</u>	<u>Unit</u>	<u>Estimated Quantity</u>	<u>Unit Price</u>	<u>Extended Price</u>
1.14	Salvage Existing Fire Hydrant	EA	1	_____	_____
1.15	Reinstall Existing Fire Hydrant	EA	1	_____	_____
1.16	Abandon Existing 4" Water Main	EA	5	_____	_____
1.17	Sod	SQ	50	_____	_____
TOTAL BID					
(Items 1.1 - 1.17) \$				_____	

2. The work will commence within ten (10) calendar days after the date set forth in written Notice to Proceed and shall be completed by October 31, 2026.
3. Liquidated damages in the amount of Five Hundred Dollars (\$500.00) per consecutive calendar day will be assessed for each day that the project is not completed after October 31, 2026.
4. Required attachment:
 - Bidder Status Form
 - Bid Bond

Bidder Status Form

To be completed by all bidders

Part A

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

☐ Yes ☐ No

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

☐ Yes ☐ No

My company has an office to transact business in Iowa.

☐ Yes ☐ No

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

☐ Yes ☐ No

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

☐ Yes ☐ No

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

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

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

To be completed by resident bidders

Part B

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

Dates: _____ / _____ / _____ to _____ / _____ / _____

Address: _____

City, State, Zip: _____

Dates: _____ / _____ / _____ to _____ / _____ / _____

Address: _____

City, State, Zip: _____

Dates: _____ / _____ / _____ to _____ / _____ / _____

Address: _____

City, State, Zip: _____

You may attach additional sheet(s) if needed.

To be completed by non-resident bidders

Part C

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

2. Does your company's home state or foreign country offer preferences to resident bidders, resident labor force preferences or any other type of preference to bidders or laborers?

☐ Yes ☐ No

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

You may attach additional sheet(s) if needed.

To be completed by all bidders

Part D

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

Signed Name: _____

Signature: _____

Firm Name: _____

Date: _____

Email Address: _____

Phone Number: _____

Worksheet: Authorization to Transact Business

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

☐ Yes ☐ No

My business is currently registered as a contractor with the Iowa Division of Labor.

☐ Yes ☐ No

My business is a sole proprietorship and I am an Iowa resident for Iowa income tax purposes.

☐ Yes ☐ No

My business is a general partnership or joint venture. More than 50 percent of the general partners or joint venture parties are residents of Iowa for Iowa income tax purposes.

☐ Yes ☐ No

My business is an active corporation with the Iowa Secretary of State and has paid all fees required by the Secretary of State, has filed its most recent biennial report, and has not filed articles of dissolution.

☐ Yes ☐ No

My business is a corporation whose articles of incorporation are filed in a state other than Iowa, the corporation has received a certificate of authority from the Iowa secretary of state, has filed its most recent biennial report with the secretary of state, and has neither received a certificate of withdrawal from the secretary of state nor had its authority revoked.

☐ Yes ☐ No

My business is a limited liability partnership which has filed a statement of qualification in this state and the statement has not been canceled.

☐ Yes ☐ No

My business is a limited liability partnership which has filed a statement of qualification in a state other than Iowa, has filed a statement of foreign qualification in Iowa and a statement of cancellation has not been filed.

☐ Yes ☐ No

My business is a limited partnership or limited liability limited partnership which has filed a certificate of limited partnership in this state, and has not filed a statement of termination.

☐ Yes ☐ No

My business is a limited partnership or a limited liability limited partnership whose certificate of limited partnership is filed in a state other than Iowa, the limited partnership or limited liability limited partnership has received notification from the Iowa secretary of state that the application for certificate of authority has been approved and no notice of cancellation has been filed by the limited partnership or the limited liability limited partnership.

☐ Yes ☐ No

My business is a limited liability company whose certificate of organization is filed in Iowa and has not filed a statement of termination.

☐ Yes ☐ No

My business is a limited liability company whose certificate of organization is filed in a state other than Iowa, has received a certificate of authority to transact business in Iowa and the certificate has not been revoked or canceled.

BID BOND

KNOW ALL MEN BY THESE PRESENTS: That we, _____

_____, of, _____,

as Principal, and _____

of _____,
as Surety, are held and firmly bound unto the Indianola Municipal Utilities, Indianola, Iowa,
hereinafter defined as Obligee, in the penal sum of five percent (5%) of the total amount of the
bid (\$_____), for which payment said Principal and Surety bind
themselves, their heirs, executors, administrators, successors, and assigns jointly and severally,
firmly by these presents.

The condition of the above obligation is such that whereas the Principal has submitted to the
Indianola Municipal Utilities, Indianola, Iowa, a certain bid, in a sealed envelope, and hereby
made a part hereof to enter into a contract in writing, for: North 6th Street Place Water Main
Improvements.

NOW THEREFORE, if the said bid by said Principal be accepted, and the Principal shall enter into
a contract with the Obligee in accordance with the terms of such bid, and give such bond as
may be specified in the contract documents with good and sufficient surety for the faithful
performance of such contract, for the prompt payment of labor and material furnished in the
prosecution thereof, and for the maintenance of said improvements as may be required
therein, then this obligation shall become null and void or in the event of the failure of the
Principal to enter such contract and give such bond, the Principal shall pay to the Obligee the
full amount of the bid bond, together with court costs, attorney's fees, and any other expense
of recovery.

Signed and sealed this _____ day of _____, 2025.

Principal

By _____
Contractor's Signature

Surety

By _____
Attorney-in-Fact

BB-1

285116

CONTRACT

THIS AGREEMENT, made and entered into this _____ day of _____, 2025, by and between the Indianola Municipal Utilities, Indianola, Iowa, party of the first part, hereinafter referred to as the "Owner", and _____, party of the second part, hereinafter referred to as the "Contractor".

WITNESSETH: THAT WHEREAS, the Owner has heretofore caused to be prepared certain plans, specifications and proposal blanks, dated the _____ day of _____, 2025, for the North 6th Street Place Water Main Improvements under the terms and conditions therein fully stated and set forth, and,

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

NOW, THEREFORE, IT IS AGREED:

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

NORTH 6TH STREET PLACE WATER MAIN IMPROVEMENTS

Construct North 6th Street Place Water Main Improvements including all labor, materials and equipment necessary for approximately 400 linear feet of 8-inch directionally bored water main, water services, hydrants, valves, surface restoration and miscellaneous associated work, including cleanup for the sum of _____ based on the unit and lump sum prices as shown on the Proposal.

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

2.1 Contract Documents, including:

- 2.1.1 Notice to Bidders
- 2.1.2 Instructions to Bidders
- 2.1.3 Proposal
- 2.1.4 Contract
- 2.1.5 Bond
- 2.1.6 General Conditions
- 2.1.7 Special Conditions
- 2.1.8 Plans List
- 2.1.9 Plans listed in the Specifications

2.2 This Instrument.

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

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

4. That this contract is executed in triplicate.

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

CONTRACTOR:

INDIANOLA MUNICIPAL UTILITIES
INDIANOLA, IOWA

By _____
Chairperson, Board of Trustees

By _____

Title _____

ATTEST:

ATTEST:

Secretary

Title _____

C-2

285116

BOND

KNOW ALL MEN: That we, _____,
of _____, hereinafter called the Principal, and
_____,
hereinafter called the Surety, are held and firmly bound unto the Indianola Municipal Utilities,
Indianola, Iowa, hereinafter called the Owner, in the sum of

Dollars (\$_____), for the payment whereof the Principal and the Surety bind
themselves, their heirs, executors, administrators, successors and assigns, jointly and severally,
firmly, by these presents.

WHEREAS, the Principal has, by means of a written Agreement dated _____,
2025, entered into a Contract with the Owner for the North 6th Street Place Water Main
Improvements, which Agreement includes a guarantee of all work against defective
workmanship and materials for a period of four (4) years from the date of final acceptance of
the work by the Owner, a copy of which Agreement is by reference made a part hereof;

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

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

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

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

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

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

The Surety on this Bond shall be deemed and held, any contract to the contrary not
withstanding, to consent without notice:

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

The Bond is executed in triplicate.

Signed and Sealed this _____ day of _____, 2025.

PRINCIPAL:

Contractor

Signature

Title

SURETY:

Surety Company

Signature, Attorney-in-Fact

Name of Attorney-in-Fact

Company Name

Company Address (Including Zip Code)

Company Telephone Number

GENERAL CONDITIONS

INDEX

- | | |
|---|---|
| 1. CONTRACT DOCUMENTS | 18. TESTS |
| 2. SURETY BOND | 19. TIME |
| 3. CONTRACTOR'S RESPONSIBILITY | 20. DELAYS |
| 4. SUBCONTRACTS | 21. CHANGES |
| 5. CONTRACTOR'S EMPLOYEES | 22. EXTRA WORK |
| 6. PERMITS AND REGULATIONS | 23. OWNERSHIP OF MATERIALS |
| 7. PATENTS | 24. OTHER CONTRACTS |
| 8. GUARANTEE | 25. OWNER'S RIGHT TO DO WORK |
| 9. SHOP DRAWINGS | 26. OWNER'S RIGHT TO TERMINATE CONTRACT |
| 10. THE ENGINEER | 27. CONTRACTOR'S RIGHT TO STOP WORK OR TERMINATE CONTRACT |
| 11. PLANS AND SPECIFICATIONS | 28. PAYMENTS WITHHELD |
| 12. INTERPRETATION OF PLANS AND SPECIFICATIONS | 29. ACCEPTANCE AND FINAL PAYMENT |
| 13. LINE AND GRADE | 30. SUSPENSION OF WORK |
| 14. DECISIONS BY ENGINEER | 31. CLEANING UP |
| 15. WORKMANSHIP AND MATERIALS | 32. HAZARDOUS MATERIALS |
| 16. ON-SITE REVIEW OR OBSERVATION | 33. IOWA HAZARDOUS CHEMICAL RISKS RIGHT-TO-KNOW LAW |
| 17. RESIDENT ENGINEER AND/OR ENGINEER TECHNICIANS | |

1. CONTRACT DOCUMENTS

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

2. SURETY BOND

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

3. CONTRACTOR'S RESPONSIBILITY

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

4. SUBCONTRACTS

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

5. CONTRACTOR'S EMPLOYEES

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

6. PERMITS AND REGULATIONS

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

7. PATENTS

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

8. GUARANTEE

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

9. SHOP DRAWINGS

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

10. THE ENGINEER

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

11. PLANS AND SPECIFICATIONS

- 11.1 Engineer shall provide Contractor with five sets of plans and specifications after execution of contract. If additional plans and specifications are required, Contractor shall compensate Engineer for costs of printing.

11.2 Engineer shall provide Contractor with additional and supplemental plans as may be required to show details of construction after approval of manufacturers' drawings and data on materials and equipment.

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

12. INTERPRETATION OF PLANS AND SPECIFICATIONS

12.1 Plans and specifications shall be interpreted by Engineer. Its decision shall be final and binding on all parties concerned.

12.2 Contractor will not be allowed to take advantage of errors or omissions in plans and specifications. Engineer will provide full instructions when errors or omissions are discovered.

13. LINE AND GRADE

13.1 Engineer shall provide stakes showing line and grade from bench marks, base lines and other reference points. Contractor shall provide competent men and tools, stakes and other materials as required to establish temporary or permanent reference marks in connection with the work. Contractor shall perform such detailed measurements and transfer elevations as required to properly lay out and construct work.

13.2 Contractor shall carefully preserve all stakes and reference points against destruction and shall promptly notify Engineer of any stakes which have been disturbed. In case of willful or careless destruction, Contractor will be charged for expense and damage from such destruction.

14. DECISIONS BY ENGINEER

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

15. WORKMANSHIP AND MATERIALS

- 15.1 All work done and all materials and equipment furnished by Contractor shall conform to plans and specifications. Competent laborers and tradespersons shall be used on all work. Experienced manufacturers' representatives shall be used to supervise installation of equipment.
- 15.2 In absence of detailed specifications in other sections, all materials shall conform to standards of American Society for Testing Materials.
- 15.3 Wherever items of materials or equipment are specified by a manufacturer's name and type, or equal, it is the intent that materials or equipment of other manufacturers, equal in quality and performance, may be substituted. Such substitution may be made only with written authorization of Engineer.
- 15.4 Wherever items of materials or equipment are specified by a manufacturer's name and type, or equal, and additional features of items are specifically required by specifications, additional features specified shall be provided whether or not they are normally included in standard manufacturer's items listed.
- 15.5 Wherever items of materials or equipment are specified by a manufacturer's name and type, or equal, and specified items are or become obsolete and no longer available, Contractor shall provide acceptable equal items which are currently available at no change in contract price.
- 15.6 When proposing "or equal" items or substitutions, Contractor shall furnish general arrangement drawings, full descriptive data, manufacturer's specifications and such performance data as required to satisfy Engineer that materials or equipment proposed are equal to that specified. Burden of proof of equality shall be responsibility of Contractor.
- 15.7 Whenever items of materials or equipment are specified by a manufacturer's name and type and "or equal" is not listed, Contractor shall provide specified equipment without substitution, unless prior approval of Engineer is obtained for any substitution.
- 15.8 Contractor shall abide by Engineer's decision when proposed substitutes of material or equipment are deemed to be unacceptable and in such an event Contractor shall furnish items of equipment or materials specified.

- 15.9 Engineer reserves right to consider such factors as overall project arrangement, overall project cost, and similar factors in determining whether proposed substitutions will be acceptable.

16. ON-SITE REVIEW OR OBSERVATION

- 16.1 All materials used and all work done by Contractor shall be subject at all times to review, observation, tests and approval by Engineer. Contractor shall furnish samples of materials for observation and tests as requested by Engineer. Contractor shall furnish any information required concerning nature or source of any proposed materials or equipment.
- 16.2 Construction, fabrication and manufacture of equipment or materials specified herein may be observed by Engineer at plant or factory.
- 16.3 Materials, equipment or work which do not satisfactorily meet specifications may be condemned by Engineer by written notice to Contractor. Condemned materials, equipment or work shall be promptly removed and replaced.
- 16.4 Defective materials, equipment or work may be rejected by Engineer at any time prior to final acceptance by Owner even though said defective items may have been previously overlooked.

17. RESIDENT ENGINEER AND/OR ENGINEER TECHNICIANS

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

18. TESTS

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

19. TIME

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

20. DELAYS

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

21. CHANGES

- 21.1 Engineer shall have the right to make changes in location and quantities of work as may be deemed advisable with consent of Owner and without notice to sureties on Contractor's bond.

- 21.2 No change shall be made under this paragraph which will increase or decrease total contract amount more than twenty percent (20%) of original contract price and no changes shall be made in plan of improvement that would necessitate additional or different construction processes and equipment.
- 21.3 Amount due Contractor shall be adjusted for changes in following manner:
 - 21.3.1 Where unit prices have been bid, these unit prices shall be used to compute adjustment in compensation.
 - 21.3.2 Where no such unit prices have been bid, Engineer and Contractor shall negotiate a reasonable adjustment in Contractor's compensation. Limitations on compensation in 22.2 of "22. EXTRA WORK" shall apply to changes where compensation is negotiated.
 - 21.3.3 No changes shall be authorized unless they are shown on revised plans or in written instructions of Engineer.
 - 21.3.4 Authorized changes which require additional time to complete shall entitle Contractor to proportionate extension of time to completion which shall be determined by Engineer.

22. EXTRA WORK

- 22.1 Required extra work not specified under this contract shall be done at an agreed price satisfactory to Contractor and Owner, or on basis of actual cost of work plus not more than fifteen percent (15%) for Contractor's overhead and profit. Actual cost shall include expense for equipment, materials, and labor and shall include no overhead items or profit. Where extra work is done by a subcontractor, with approval of Owner, there may be included in Contractor's actual cost, ten percent (10%) for subcontractor's profit.
- 22.2 The term "extra work" as used herein shall not be construed to apply to changes described in "21. CHANGES".
- 22.3 No compensation shall be allowed Contractor for extra work unless such work has been authorized in writing by Engineer and approved by Owner.
- 22.4 Contractor shall submit a statement of costs to Engineer for approval when extra work is performed on an actual cost plus basis. After such a statement is approved, Engineer shall certify its correctness to Owner.

23. OWNERSHIP OF MATERIALS

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

24. OTHER CONTRACTS

24.1 Owner reserves right to let other contracts in connection with this work. Contractor shall afford other contractors reasonable opportunity for introduction and storage of their materials and execution of their work, and shall properly connect and coordinate its work with theirs.

24.2 When proper execution of Contractor's work depends upon work of another contractor, it shall inspect other work and report any defects to Engineer. Contractor's failure to inspect and report shall constitute an acceptance of other contractor's work except for defects which may develop in work after completion.

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

25. OWNER'S RIGHT TO DO WORK

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

26. OWNER'S RIGHT TO TERMINATE CONTRACT

26.1 Owner, upon certification of Engineer that there is sufficient cause to justify termination of contract, may, without prejudice to any other right or remedy, and after giving Contractor seven (7) days' notice may terminate employment of Contractor for any of following reasons:

- 26.1.1 Contractor makes a general assignment for benefit of its creditors, or if adjudged a bankrupt.
 - 26.1.2 Receiver is appointed on account of Contractor's insolvency.
 - 26.1.3 Contractor persistently or repeatedly fails or refuses, except when extension of time to complete is granted, to provide enough skilled workmen or proper materials.
 - 26.1.4 Contractor fails to make prompt payment to subcontractors for material or labor.
 - 26.1.5 Contractor persistently disregards laws and ordinances or instructions of Engineer.
 - 26.1.6 Contractor violates a provision of contract.
 - 26.2 If Owner terminates employment of Contractor, it shall take possession of premises and all materials, tools and appliances thereon. It shall finish work by whatever method it may deem expedient. In such case Contractor shall not be entitled to receive any further payment until work is finished.
 - 26.3 If unpaid balance of contract price exceeds expense of finishing the work including compensation for additional managerial and administrative services, excess shall be paid to Contractor. If expense exceeds unpaid balance, Contractor shall pay difference to Owner. Expense incurred by Owner as herein provided, and damage incurred through Contractor's default, shall be certified by Engineer.
27. CONTRACTOR'S RIGHT TO STOP WORK OR TERMINATE CONTRACT
- 27.1 If Engineer fails to issue any certificate for payment within fifteen (15) days after it is due, or if Owner fails to pay to Contractor within thirty (30) days of its maturity and presentation, any sum certified by Engineer, then Contractor may, upon seven (7) days simultaneous written notice to Owner and Engineer, stop work or terminate this contract. If Contractor elects to stop work by written notice, work shall be resumed promptly upon payment by Owner. If Contractor elects to terminate this contract by written notice it shall recover from Owner payment for all work executed to date of notice and any loss sustained upon any plant or materials plus a reasonable profit.

28. PAYMENTS WITHHELD

28.1 Engineer may withhold or nullify the whole or a part of payment certificate, on account of subsequently discovered evidence, to such extent as may be necessary to protect Owner from loss on account of:

28.1.1 Defective work not remedied.

28.1.2 Claims filed or reasonable evidence indicating probable filing of claims.

28.1.3 Failure of Contractor to make payments properly to subcontractors or for materials or labor.

28.1.4 A reasonable doubt that contract can be completed for balance then unpaid.

28.1.5 Damage to another contractor.

28.1.6 Claims of Owner for liquidated damages.

28.2 Payments shall be made for amounts withheld when above grounds are removed.

29. ACCEPTANCE AND FINAL PAYMENT

29.1 When work has been satisfactorily completed, Engineer will certify Contractor's final estimate stating that work has been completed in accordance with terms and conditions thereof with qualifications, if any, as stated. Balance found to be due Contractor according to the terms of payment shall be paid by Owner as provided in contract, provided, however, that any state laws which designate manner of final payment shall be followed in lieu of manner of final payment outlined above. Prior to receipt of final payment, Contractor shall file with Owner a receipt in full from each manufacturer, subcontractor, and dealer for all equipment and materials used on the work and a complete release of all liens, including tax liens, which may have arisen from this contract and required statements from Contractor and all subcontractors of sales and use tax paid. In lieu thereof, Owner, at its option, may accept from Contractor a statement showing balance due on all accounts.

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

GC-12

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30. SUSPENSION OF WORK

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

31. CLEANING UP

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

32. HAZARDOUS MATERIALS

- 32.1 The use of Asbestos Construction Building Materials (ACBM) is specifically prohibited. The Contractor, suppliers, and subcontractors shall warrant that all products used are asbestos free. In the event that a specified product contains asbestos, it shall be the responsibility of the Contractor to notify the Owner so that an appropriate substitution can be made in a timely manner so as not to delay the project.
- 32.2 The Contractor shall provide the Owner a certificate that warrants that no materials, products, items or equipment contains any asbestos upon completion of the work of this Contract. If asbestos is found to exist in any of the materials, products, items or equipment provided as part of this Contract, the Contractor shall be financially responsible for all costs resulting from removal in accordance with an Owner approved method and replacement of an asbestos free condition to finished drawings and specifications. The financial responsibility of the Contractor shall not terminate with the end of the surety maintenance bond period, but shall continue through the life of the facility.

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

33.1 Owner's responsibility:

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

33.2 Contractor's responsibility:

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

SPECIAL CONDITIONS

NORTH 6TH STREET PLACE WATER MAIN IMPROVEMENTS INDIANOLA MUNICIPAL UTILITIES INDIANOLA, IOWA

INDEX

- | | |
|---------------------------------------|--|
| 1. INTENT | 8. CONSTRUCTION FACILITIES BY CONTRACTOR |
| 2. LOCATION | 9. INSURANCE BY CONTRACTOR |
| 3. RIGHT-OF-WAY | 10. CONTRACTOR'S RESPONSIBILITY |
| 4. ORDER OF CONSTRUCTION | 11. POSITION, LINE AND GRADE |
| 5. INTERRUPTIONS TO SERVICE | 12. EMPLOYMENT PRACTICES |
| 6. SERVICE FACILITIES | 13. HISTORICAL/ARCHEOLOGICAL FINDS |
| 7. STORAGE OF MATERIALS AND EQUIPMENT | |

1. INTENT

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

2. LOCATION

- 2.1 Work is located in public right-of-way and City owned properties in the City of Indianola, Iowa.

- 2.2 Transportation facilities:

2.2.1 Iowa Highway 92.

2.2.2 U.S. Highway 65/69.

3. RIGHT-OF-WAY

- 3.1 Confine movements of equipment and personnel, storage of materials, excavation, spoil banks, and all other construction operations within the rights-of-way provided.
- 3.2 Contractor will be held liable by City and adjacent property owners for damages outside rights-of-way and easements; failure of Engineer to warn Contractor about incidence of trespassing does not relieve liability.

SC-1

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4. ORDER OF CONSTRUCTION

- 4.1 Provide Engineer with proposed schedule of construction showing dates of starting and completing various portions of work.
- 4.2 Coordinate work with Owner and Engineer to assure orderly and expeditious progress of the work.
- 4.3 Contractor shall establish schedule of working hours for construction, subject to approval of Engineer.
- 4.4 Schedule construction to minimize use of street barricades and detours; clean up each portion of work as it is completed; schedule work to allow vehicular access for residents within 1 block of any closed street due to construction.

5. INTERRUPTIONS TO SERVICE

- 5.1 Existing utilities shall remain in substantially continuous operation during construction.

6. SERVICE FACILITIES

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

7. STORAGE OF MATERIALS AND EQUIPMENT

- 7.1 Storage areas shall be subject to approval of Engineer.
- 7.2 Store materials and equipment in manner which will preserve their quality and fitness.

8. CONSTRUCTION FACILITIES BY CONTRACTOR

- 8.1 Provide telephone at which Contractor can be reached by Owner or Engineer at all times during the working day; provide liaison between telephone and construction personnel for expeditious handling of messages.
 - 8.1.1 Provide Owner and Engineer with at least 2 telephone numbers where Contractor's representative can be reached evenings, weekends and holidays in event of emergency.

- 8.2 Location of all construction facilities, including project construction plant and yard, subject to approval by Engineer; remove all construction facilities upon completion of work.
- 8.3 Provide and maintain suitable sanitary facilities for construction personnel for duration of work; remove upon completion of work.
- 8.4 Provide fence, barricades, and/or watchmen to prevent access of unauthorized persons to site where work is in progress.

9. INSURANCE BY CONTRACTOR

- 9.1 Provide and maintain insurance throughout construction period in the following minimum amounts:
 - 9.1.1 Workmen's compensation and occupational disease insurance in accordance with the laws of the State of Iowa covering all employees who perform any obligations assumed under the contract.
 - 9.1.2 Public liability and property damage liability insurance covering all operations under the contract; limits of bodily injury or death not less than \$500,000 for one person and \$1,000,000 for each accident; for property damage, not less than \$250,000 for each accident and \$500,000 aggregate for accidents during the policy period.
 - 9.1.3 Automobile liability insurance on all self-propelled vehicles used in connection with the contract, whether owned, non-owned, or hired; public liability limits of not less than \$500,000 for one person and \$1,000,000 for each accident; property damage limit of \$500,000 for each accident.
 - 9.1.4 Umbrella liability (applying directly in excess above liability coverages); \$1,000,000 combined single limit; \$1,000,000 aggregate.
 - 9.1.5 Name the Indianola Municipal Utilities as an additional insured under all policies.
- 9.2 Owner reserves right to approve insurance company.

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

10. CONTRACTOR'S RESPONSIBILITY

- 10.1 There shall be no liability upon public officials, Engineer or his authorized assistants, either personally or as an official of the Owner, it being understood that in such matters he acts as an agent and representative of the Owner in carrying out any of the provisions of the contract or in exercising any power or authority granted him thereby.
- 10.2 Contractor agrees to hold harmless and indemnify the Owner and Engineer and their employees or agents against any liability sustained by reason of the work or the handling or storing of materials therefor when such liability arises out of negligent acts, errors or omissions of the Contractor, its employees or agents; failing to do so, any judgment against or settlements resulting therefrom shall become a lien against any funds due Contractor.
- 10.3 In the event any provisions in the contract are violated by the Contractor or any of its subcontractors, the Owner may serve written notice upon the Contractor and its surety of their intention to terminate such contract. Such notice shall contain a statement of the reasons for such action and unless within 10 days after the serving of such notice upon the Contractor such violation shall cease and satisfactory arrangements for correcting be made, the contract shall, upon expiration of said 10 days cease and terminate.

10.3.1 In the event of such termination, the Owner shall immediately serve notice thereof upon the surety and Contractor and the surety shall have the right to take over and perform the contract, provided, however, that if the surety does not commence the performance thereof within 30 days, the Owner may take over the work and prosecute the same to completion by contract for the account and at the expenses of the Contractor and the Contractor and its surety shall be liable to the Owner for any excess cost occasioned the Owner thereby; in such event, the Owner may take possession of and utilize such materials and appliances as may be on the site of the project and necessary in completing the work.

10.4 If suit is brought by the Owner for the breach of any provisions of this contract, the Contractor agrees to pay all costs in connection with suit, including reasonable attorney fees, whether or not the suit proceeds to judgment.

11. POSITION, LINE AND GRADE

11.1 Construct to lines and grades shown on plans or as specified hereinafter.

11.2 Contractor shall perform detailed survey and staking for location, elevation and grade of construction.

11.3 Contractor shall provide, without extra compensation, all men and necessary tools to make all test holes and exploration, at any time, for purpose of determining location of existing structures beneath ground surface which might conflict with work of Contractor.

11.4 Contractor shall preserve all monuments, reference points, stakes and bench marks set by Engineer. In case of destruction by Contractor's negligence or carelessness, he will be charged with resulting expense of replacement, and responsibility for any mistakes or loss of time caused thereby.

11.5 These conditions supersede conflicting provisions of GENERAL CONDITIONS.

12. EMPLOYMENT PRACTICES

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

13. HISTORICAL/ARCHAEOLOGICAL FINDS

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

PLANS LIST

NORTH 6TH STREET PLACE WATER MAIN IMPROVEMENTS
INDIANOLA MUNICIPAL UTILITIES
INDIANOLA, IOWA

1. PLANS

- 1.1 The work shall conform to the following drawings, which constitute the "Plans" and are an integral part of the Contract Documents:

<u>No.</u>	<u>Title</u>	<u>Revision Number</u>
A.01	INDEX AND TITLE SHEET	
A.02	GENERAL NOTES AND LEGEND	
MWM.01	WATER MAIN PLAN	
MWM.02	WATER MAIN PLAN	
MWM.03	WATER MAIN PLAN	
<u>IDOT STANDARD DRAWINGS</u>		
SW-104	PRESSURE PIPE TRENCH BEDDING	3
WM-101	THRUST BLOCKS, SHEETS 1-2	1
WM-102	TRACER SYSTEM	1
WM-201	FIRE HYDRANT ASSEMBLY	3
<u>IDOT STANDARD ROAD PLANS</u>		
TC-211	LANE CLOSURE ON LOW VOLUME ROADWAY	3
TC-212	SPOT LOCATION LANE CLOSURE WITH FLAGGERS	7
TC-252	ROUTES CLOSED TO TRAFFIC	6
<u>SUDAS STANDARD SPECIFICATIONS, SECTION 7030 FIGURES</u>		
7030.204	GENERAL FEATURES OF AN ACCESSIBLE SIDEWALK	3
7030.205	GENERAL SIDEWALK AND CURB RAMP DETAILS	1
7030.210	DETECTABLE WARNING PLACEMENT	0

PL-1

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DETAILED SPECIFICATIONS

NORTH 6TH STREET PLACE WATER MAIN IMPROVEMENTS INDIANOLA MUNICIPAL UTILITIES INDIANOLA, IOWA

PART 1 - GENERAL REQUIREMENTS

INDEX

- | | |
|-----------------------------|---------------------------|
| 1. FORM | 9. STANDARDS AND CODES |
| 2. INTENT | 10. MATERIALS TESTS |
| 3. INTERPRETATION | 11. RESPONSIBILITY OF |
| 4. WORK INCLUDED | CONTRACTOR |
| 5. STARTING AND COMPLETION | 12. TEMPORARY WORK |
| TIME | 13. BARRICADES AND LIGHTS |
| 6. INFORMATION FOR ENGINEER | 14. FINAL REVIEW AND |
| 7. SHOP DRAWINGS | ACCEPTANCE |
| 8. PLANS AND SPECIFICATIONS | 15. PAYMENT |

1. FORM

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

2. INTENT

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

3. INTERPRETATION

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

4. WORK INCLUDED

- 4.1 Furnish all materials, labor and equipment to construct East 3rd Avenue Water Main Improvements as set out in the Notice to Bidders.

5. STARTING AND COMPLETION TIME

- 5.1 Commence work within 10 calendar days after date set forth in written Notice to Proceed. Complete work within time set out in Notice to Bidders.

6. INFORMATION FOR ENGINEER

- 6.1 After award of contract submit minimum 5 copies of following information and drawings for Engineer's review:
- 6.1.1 Manufacturer's specifications and catalog data for pipe, castings and such other data as requested by Engineer.
 - 6.1.2 All materials test reports.
 - 6.1.3 Portland and asphaltic cement concrete mix design; submit 8 days before proposed mix is to be used.
 - 6.1.3.1 Include certified gradation of aggregates to be used.
 - 6.1.4 Such other information for all materials supplied to job site.
- 6.2 Within 15 days after award of contract, provide construction schedule showing dates of starting and completing various portions of work.

7. SHOP DRAWINGS

- 7.1 Intent of Engineer's review: to assist Contractor in interpreting plans and specifications.
- 7.2 Contractor's responsibility: to check drawings prior to submission for coordination and conformance with contract; do not submit without checking.
- 7.3 Engineer's review is only for general conformance with design concept of project and general compliance with information given in contract documents; any action shown is subject to requirements of plans and specifications; Contractor responsible for dimensions which must be confirmed and correlated at job site; fabrication processes and techniques of construction; coordination of work with that of all other trades and satisfactory performance of work.
- 7.4 Prior to submission of shop drawings and catalog data to Engineer: affix Contractor's stamp with signature of responsible person to show material submitted has been checked and approved by Contractor; shop drawings submitted without appropriate stamp and signature will be returned without Engineer's review.

8. PLANS AND SPECIFICATIONS

- 8.1 Engineer will furnish up to 5 sets of plans and specifications after award of contract; Contractor shall compensate Engineer for printing costs for additional copies required.
- 8.2 Subcontractors and suppliers will be furnished copies only at request of Contractor; Engineer will be compensated for printing costs.
- 8.3 Provide 1 set of plans and specifications for each foreman or superintendent in charge of each crew on job.

9. STANDARDS AND CODES

- 9.1 Do work in accordance with best present-day installation and construction practices.
- 9.2 Conform to and test materials in accordance with applicable sections of latest revisions or tentative revisions of following codes and standards unless specifically noted to contrary:
 - 9.2.1 American Association of State Highway and Transportation Officials (AASHTO).

General Requirements

- 9.2.2 American Concrete Institute (ACI).
- 9.2.3 American Institute of Steel Construction (AISC).
- 9.2.4 American National Standards Institute (ANSI).
- 9.2.5 American Society for Testing and Materials (ASTM).
- 9.2.6 American Water Works Association (AWWA).
- 9.2.7 American Welding Society (AWS).
- 9.2.8 Iowa Department of Transportation (IDOT); latest edition of standard specifications and addenda.
- 9.2.9 Federal Specifications (FS).
- 9.2.10 Manual of Accident Prevention in Construction by Associated General Contractors of America, Inc., (AGC).
- 9.2.11 Occupational Safety and Health Act of 1970 (Public Law 91-596) (OSHA).
- 9.2.12 Iowa Occupational Safety and Health Act of 1972 (Chapter 88, Code of Iowa 2024) (IOSHA).
- 9.2.13 Current Iowa Manual on Uniform Traffic Control Devices (MUTCD).
- 9.2.14 National Institute for Occupational Safety and Health (NIOSH).
- 9.2.15 National Safety Council (NSC).
- 9.2.16 Recommend Standards for Water Works (Ten States Standards).
- 9.2.17 Standards and codes of the State of Iowa and applicable local standards, codes and ordinances of the City of Indianola.
- 9.2.18 Other standards and codes which may be applicable to acceptable standards of the industry for equipment, materials and installation under the contract.

10. MATERIALS TESTS

- 10.1 Submit to Engineer duplicate copies of reports by an independent testing laboratory showing compliance of construction materials with specifications; selection of testing laboratory subject to approval by Engineer.
- 10.2 Pay cost of all tests including transportation charges on samples.
- 10.3 Provide samples of materials and forms for preparing concrete compression cylinders required for laboratory tests; sampling of materials at site and preparation of concrete compression cylinders shall be performed by Contractor with approval of procedures by Engineer.
- 10.4 Ship no materials to the job until laboratory tests have been furnished and approved which show compliance of materials with the specifications.
- 10.5 All materials subject to sampling, testing, inspection, and rejection at site by Engineer.
- 10.6 Independent laboratory tests for work specified herein include the following:
 - 10.6.1 Portland cement: car, truck, or sealed bin samples for total requirements; ASTM C150.
 - 10.6.2 Concrete aggregates: 1 sample of each, ASTM C33.
 - 10.6.3 Portland cement and aggregates for concrete pavement: certify that sources are IDOT approved; provide analysis of materials used.
 - 10.6.4 Concrete mix: meet approval of Engineer before start of construction.
 - 10.6.5 Provide 2 concrete compression cylinders from trial batch for proposed mixes; ASTM C39; provide 7-day and 28-day tests.
 - 10.6.6 Structural concrete: 2 concrete compression cylinders each day concrete is poured; provide 7-day and 28-day tests in accordance with ASTM C39.
 - 10.6.7 Concrete pavement: 2 concrete compression cylinders for each 50 CY placed; provide at least 2 cylinders each day concrete is poured; provide 7-day and 28-day tests in accordance with ASTM C39; pavement includes curb and gutter, driveways and sidewalk.

General Requirements

- 10.6.8 Contractor responsible for providing cylinder forms, making cylinders, storing, curing, transporting and testing cylinders by independent testing lab.
- 10.6.9 If concrete compression cylinder tests for pavement fail, take two cores for each failing test; locate one core on each side of the test location within the next paving panel and test compressive strength; Contractor shall pay all costs for coring and retesting required due to failing tests on concrete compression cylinders.
- 10.6.10 Concrete slump and air tests: Contractor to provide 1 test per structural and pavement pours.
- 10.6.11 See PORTLAND CEMENT PAVEMENT for additional tests.
- 10.6.12 Pavement subgrade: test moisture and density; provide tests at locations selected by Owner or Engineer; ASTM D698; make tests necessary to determine optimum moisture-density relationships and the suitability of materials for compaction.
- 10.6.13 Make soil tests necessary to determine optimum moisture-density relationships and the suitability of materials for compaction.
- 10.6.14 Compaction tests on pipe trench or structure backfill: ASTM D698; obtain tests every 100 LF of pipe trench; at 2' vertical increments from top of pipe to surface.
- 10.6.15 Retest any pipe trench or structure backfill or subgrade area that fails, tests at no additional cost to Owner.
- 10.6.16 Reinforced concrete pipe: test 1 piece of each diameter of each class furnished; check reinforcing size and placement; ASTM C76.
- 10.6.17 Polyvinylchloride pipe (pvc): certify that pipe conforms to ASTM 3034 and AWWA C900 where applicable.
- 10.6.18 Other pipe: certify that pipe conforms to applicable specifications.
- 10.6.19 Reinforcing steel: certify that steel conforms to ASTM A615 for grades specified.

11. RESPONSIBILITY OF CONTRACTOR

- 11.1 Protection of work.
- 11.2 Protection of all property from injury or loss resulting from his operations.
- 11.3 Replace or repair objects sustaining any such damage, injury or loss to satisfaction of Owner and Engineer.
- 11.4 Without limiting GENERAL REQUIREMENTS of Contract Documents, protect flag poles, sidewalks, streets, pavements, fences, pipe, conduit, utilities, trees and shrubs and structures not shown for removal.
- 11.5 Cooperate with Owner, Engineer and representative of utilities in locating underground utility lines and structures; incorrect, inaccurate or inadequate information concerning location of utilities or structures shall not relieve Contractor of responsibility for damage thereto caused by his operations.
- 11.6 Keep cleanup current with construction operations.
- 11.7 Comply with all federal, state and City of Indianola laws and ordinances.

12. TEMPORARY WORK

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

13. BARRICADES AND LIGHTS

- 13.1 Erect and maintain barricades and lights and/or provide guards in conformance with Standard Road Plan Dwg. No. TC-252 of the Iowa Department of Transportation (IDOT) and current Manual of Uniform Traffic Control Devices (MUTCD), for protection and warning of pedestrians and vehicles; all barricades, lights and/or guards at expense of Contractor.
- 13.2 Engineer will not allow work to proceed until all signs, barricades and lights are in place; requirements for type of signs and number of signs will be strictly enforced; improper signing during construction will constitute "improper work" and Engineer will cause Contractor to suspend work.

General Requirements

- 13.3 All signs, barricades, and other traffic control devices used on the project shall be furnished, installed and maintained by Contractor; all traffic control devices shall be maintained in a state of good repair and shall be cleaned and washed periodically as needed.
- 13.4 Certain sections of public streets and sidewalks can be closed with the following restrictions:
 - 13.4.1 Adequate protection shall be provided for pedestrians. If a section of sidewalk is closed, appropriate signing and barricading shall be utilized; signing and barricading shall remain in place until sidewalk is reopened for pedestrian use.
 - 13.4.2 No portion of public street shall be reopened to use by vehicular traffic other than local traffic until excavated area has been restored to a hard surface condition or granular surfacing has been placed as directed by Engineer; provide sign for local traffic "Enter at Own Risk".
 - 13.4.3 Notify City 7 days prior to closing street.

14. FINAL REVIEW AND ACCEPTANCE

- 14.1 Notify Engineer when project is considered to be complete and ready for final review.
- 14.2 Owner will accept work and make final payment to Contractor:
 - 14.2.1 When Engineer has certified that work of Contractor is complete and in conformance with the plans and specifications.
 - 14.2.2 When Contractor has filed with Owner or Engineer documents called for in specifications.

15. PAYMENT

- 15.1 No separate payment will be made for work covered under this part of the specifications. Include all costs in appropriate unit prices.

PART 2 - SPECIAL CONSTRUCTION

INDEX

- | | |
|----------------------------|--|
| 1. GENERAL | 6. CONTINUITY OF EXISTING UTILITY SYSTEM |
| 2. COOPERATION WITH OTHERS | 7. TRAFFIC CONTROL |
| 3. SURVEY MARKERS | 8. WEATHER LIMITATIONS |
| 4. CONTAMINATED SOIL FINDS | 9. CONSTRUCTION STAKING |
| 5. UNSTABLE SOILS | 10. PAYMENT |

1. GENERAL

- 1.1 Procedures outlined below are not intended to fully cover all special procedures or emergencies which may arise during construction but are offered as an aid to Contractor in planning work; Contractor will cooperate with City and Engineer to minimize inconvenience and construction delays.
- 1.2 Determine location of underground utilities and piping before starting work; locations of underground appurtenances are approximate and not guaranteed by City or Engineer.
- 1.3 Remove and replace storm and sanitary sewers as required for construction; if additional pipe is damaged, replace in kind with new at no cost to Owner except where replacement is shown on plans; remove and replace all signs and other appurtenances which interfere with construction; replace damaged signs at no cost to Owner; all signs not shown on plans.
- 1.4 Limit construction operations to public rights-of-way; provide barricades, lights, signs and detours as necessary to reroute traffic around construction areas.
- 1.5 Ensure all active operating utilities marked for relocation or temporary removal due to conflict with construction, including services, remain active at all times. No additional payment will be made for temporary water service, bypass pumping, of alike.
- 1.6 Dispose of materials removed during construction at locations approved by Owner or Engineer.
 - 1.6.1 Dispose of waste products containing putrescible materials at approved landfill.

Special Construction

- 1.6.2 Dispose of surfacing, broken concrete or rubble, brush, trees, excess excavated materials or spoil not suitable for backfill at landfill unless otherwise approved by Engineer.
- 1.7 Notify residents 2 days in advance when construction will disrupt or block access to property.
- 1.8 Remove, stockpile and replace fencing where required for construction as shown on plans; replace fences as work progresses.
- 1.9 Provide snowfence along boundaries of construction area as specified hereinafter and as directed by Engineer.
 - 1.9.1 Install snowfence when area is prepared for excavation; install on steel posts with maximum spacing of 8'; maintain until work is completed.
 - 1.9.2 Provide snowfence around all open trenches or open structures when left unattended.
- 1.10 Clean up and provide surface restoration as construction progresses.
- 1.11 Submit complete detailed construction procedure schedule after award of contract for planning, scheduling and controlling construction of project.
- 1.12 Contractor will be expected to provide adequate personnel and equipment to perform work within specified time of construction.
- 1.13 If delays in delivery of materials become apparent, notify City and Engineer promptly; take action to accomplish one of the following:
 - 1.13.1 Substitute alternate materials with approval of City and Engineer.
 - 1.13.2 Expedite delivery of materials.
- 1.14 Extensions of contract period will be given consideration upon written request of Contractor; request must include valid supporting data and bonafide reasons for requesting extension; City expects work to be complete and ready for final acceptance within completion time specified.

2. COOPERATION WITH OTHERS

- 2.1 Advise all utilities prior to excavating in area where construction might affect traffic signal, gas, electrical, telephone or water service.
 - 2.1.1 Advise telephone company of proposed construction schedule as it relates to telephone service.
 - 2.1.2 Advise power company of proposed construction schedule as it relates to electrical power.
 - 2.1.3 Advise gas company of proposed construction schedule as it relates to gas service.
 - 2.1.4 Advise City of proposed construction schedule as it relates to water service.
 - 2.1.5 Advise cable television of proposed construction schedule as it relates to cable television service.
- 2.2 Cooperate with State and Federal regulatory agencies in matters under their jurisdiction over construction operations.
- 2.3 Cooperate with local governmental agencies; secure necessary building permits and arrange for inspections at proper time.

3. SURVEY MARKERS

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

4. CONTAMINATED SOIL FINDS

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

5. UNSTABLE SOILS

- 5.1 Areas of wet, sandy or unstable soils may be encountered along route of water main; provide material and equipment required to permit installation of water main through all soils encountered.
- 5.2 Excavation of all soils encountered is incidental to construction; include all costs in unit price for water main construction.
- 5.3 Contractor responsible for dewatering excavation as provided in EXCAVATION AND BACKFILL to ensure stable bottom of trench to allow normal bedding material to support pipe and structures; Owner reserves right to substitute stabilizing material for bedding rock; use of stabilizing material or additional bedding rock in lieu of or as substitute for dewatering the trench permitted at Contractor's option at no additional cost.

6. CONTINUITY OF EXISTING UTILITY SYSTEMS

- 6.1 Prepare detailed construction procedure schedule after award of contract; show definite and positive action which will be taken to minimize disruption to utility systems.
- 6.2 Meet with City Water Superintendent to determine operability of isolation valves. Notify property owners 2 days in advance of interruption to water service.

7. TRAFFIC CONTROL

7.1 All streets shall remain open to two-way traffic at all times with the following exceptions:

7.1.1 North 6th Street Place, East Franklin Avenue, North 7th Street, and East Girard Avenue may be temporarily closed to one lane of traffic. Use M-4 concrete mix for pavement. Use IDOT Standard Road Plan TC-211 or TC-212 for traffic control.

7.2 All construction personnel's vehicles shall be parked in accordance with local parking regulations.

8. WEATHER LIMITATIONS

8.1 Owner expects paving of streets during suitable weather within contract time period; contract time period includes calendar days for inclement weather; contract time period will not be extended for claims of wet weather or freezing weather; Owner will consider suspension of contract time period for winter months only after completion of cleanup.

9. CONSTRUCTION STAKING

9.1 Contractor responsible for providing all necessary construction staking to allow for project construction.

9.2 Contractor responsible for accuracy and completeness of all construction staking.

9.3 Owner or Engineer may review accuracy of construction staking at its own discretion at any time.

10. PAYMENT

10.1 No separate payment will be made for work covered under this part of the specifications except as set forth below. Include all costs in appropriate unit prices.

Special Construction

- 10.2 Mobilization; lump sum (LS): Mobilization shall consist of preparatory work and operations for all items under the contract, including, but not limited to, those necessary for the movement of personnel, equipment, supplies, and incidentals to the project site, and for the establishment of all offices, buildings, and other facilities, which must be performed or costs incurred prior to beginning work on the various items on the project site. Mobilization may include bonding, permit, and demobilization costs.
- 10.3 Traffic Control, LS: Lump sum price includes furnishing signs, flagmen, barricades, flashers, channelizing devices and other miscellaneous control items specified or required by Indianola Municipal Utilities during construction. Includes setup, removal and miscellaneous associated work.
- 10.4 Construction Staking, LS: Lump sum price includes but is not limited to furnishing all equipment, labor, and materials to provide construction staking for water main installation and paving operations. Any re-staking will be at the Contractor's expense.

PART 3 - EXCAVATION AND BACKFILL

INDEX

- | | |
|----------------------------------|-------------------------|
| 1. GENERAL | 8. EXISTING UTILITIES |
| 2. DEFINITIONS | 9. SURFACING REMOVAL |
| 3. TRENCH EXCAVATION | 10. TRENCH BACKFILL |
| 4. ROCK AND RUBBLE EXCAVATION | 11. SURFACE RESTORATION |
| 5. DIRECTIONAL BORING | 12. GRANULAR SURFACING |
| 6. SHEETING, SHORING AND BRACING | 13. PAYMENT |
| 7. DEWATERING | |

1. GENERAL

- 1.1 Excavate all materials encountered to depth indicated or specified; comply with safety rules of State Bureau of Labor and federal government.
 - 1.1.1 OSHA Part 1926, Subpart P - Excavations, as adopted by the Iowa Department of Labor, applies to work in this part of the specifications.
- 1.2 Protect existing pavement from damage during construction if not shown on plans for removal; if damage occurs, replace in kind at no cost to Owner.
- 1.3 Remove, replace and repair items such as mailboxes, fences, storm drains, signs, hanging wires and other obstructions to accommodate construction equipment or to facilitate excavation; cost to remove and replace is incidental to construction; install mailboxes at temporary location as required by U.S. Postal Service during construction.
- 1.4 Pile excavated material suitable for backfill in orderly manner sufficient distance back from edge of excavation to avoid slides or cave-ins; minimum clear distance as required by OSHA; cast dirt as directed by Engineer.
- 1.5 Remove spoil not suitable for backfill; waste at disposal area specified in SPECIAL CONSTRUCTION; removal is incidental to construction, include cost in unit prices for water main construction.
- 1.6 Where new work crosses existing utilities or utility services, excavate in advance of pipe laying; determine crossing arrangement including exact construction line and grade.
- 1.7 Excavate in open cut under existing streets, utilities and structures except as noted on plans or as modified by Engineer.

- 1.8 Reference to percent maximum density shall mean a soil density not less than stated percent of maximum density for soil as determined by ASTM D698 Moisture-Density Relations of Soils using 5.5-lb. Rammer and 12-in. Drop (Standard Proctor method).
- 1.9 Install signing and barricades for traffic control in accordance with Manual on Uniform Traffic Control Devices and as required by Iowa DOT.

2. DEFINITIONS

- 2.1 Earth: all materials, not classified as rock or rubble, including clay, silt, sand, gravel, hardpan, disintegrated shale, debris, junk, brick, loose stones and boulders less than volume specified below which can be removed by use of suitable excavating equipment.
- 2.2 Rock: boulders larger in volume than 75% of rated capacity of hoe bucket in use or solid deposits so firmly cemented together that they cannot be removed without continuous use of pneumatic tools or blasting.
 - 2.2.1 Removal of rock above ground is incidental to construction.
 - 2.2.2 Use pneumatic tools or blasting only with written approval of Engineer.
- 2.3 Rubble: buried concrete foundations, beams, walls and other materials which require continuous use of pneumatic tools or blasting.
 - 2.3.1 Removal of rubble above ground and where noted on plans is incidental to construction.
 - 2.3.2 Use pneumatic tools or blasting only with written approval of Engineer.

3. TRENCH EXCAVATION

- 3.1 Keep width of trench as narrow as possible and still provide adequate room for backfill and jointing. See Standard Drawing SW-104
- 3.2 Trench width at top of pipe shall not exceed outside pipe diameter plus 12 inches on each side of pipe.
- 3.3 Keep sides of trench below top of pipe as nearly vertical as practicable; comply with federal and state safety regulations; maintain vertical walls of excavation below top of pipe.

- 3.4 Provide sheeting, shoring, and bracing where required to hold walls of excavation, to protect existing structures, utilities, pavement, and to provide safety for workers in accordance with OSHA standards.
- 3.5 Bottom of Trench:
 - 3.5.1 Provide firm, stable and uniform support for full length of pipe.
 - 3.5.2 Provide hand shaped trench bottom for iron pipe for ductile iron or polyvinylchloride pipe. Provide bell cut outs so pipe lays true to grade. See Standard Drawing SW-104.
 - 3.5.2.1 Contractor may elect to use granular pipe bedding consisting of natural gravel below pipe for his convenience with no additional compensation; 1" maximum size aggregate, free from deleterious substances.
 - 3.5.3 Remove large clods, stones and other foreign material from bottom of trench.
 - 3.5.4 Normal bedding shall consist of natural soil. Contractor may elect to use sand or gravel.
 - 3.5.4.1 If trench is wet, use crushed stone or gravel not exceeding 1".
 - 3.5.4.2 In the opinion of the inspector, crushed limestone or gravel not exceeding 2" shall be used when 1" stone or gravel does not provide proper foundation for the pipe.
 - 3.5.5 If trench bottom is rocky or hard, over-excavate trench 6" and place 6" of pipe bedding below pipe and backfill with pipe bedding material.
 - 3.5.6 Provide pipe bedding at fire hydrants as shown on Standard Drawing.
- 3.6 When unsuitable material is encountered which may not provide a suitable foundation for pipe:
 - 3.6.1 Notify Owner immediately.
 - 3.6.2 Engineer will investigate questionable material to determine its suitability for pipe foundation.

3.6.3 If material is considered unsuitable for foundation, Owner will specify and authorize remedial measures in writing.

3.6.4 If removal of unsuitable material is authorized:

3.6.4.1 Replace with stabilizing material.

3.6.4.2 Stabilizing material: sharp, clean crushed stone; complying with following gradation:

<u>Sieve</u>	<u>% Passing</u>
2-1/2"	100
2"	90-100
1-1/2"	35-70
1"	0-15
1/2"	0-5

3.6.4.3 Compact stabilizing material by rodding or slicing with shovel.

3.6.4.4 Place 2" of granular pipe bedding as specified herein on top of stabilizing material; bring pipe bedding up to spring line.

3.6.4.5 Pipe bedding: sharp, clean, crushed stone; comply with following gradation:

<u>Sieve</u>	<u>% Passing</u>
1"	100
3/4"	80-95
1/2"	50-60
3/8"	20-40
No. 4	0-5

3.6.4.6 Authorized over excavation, stabilizing material and pipe bedding will be paid for as Stabilizing Material.

3.6.5 Authorized remedial measures not covered by contract unit prices will be paid for as Extra Work.

4. ROCK AND RUBBLE EXCAVATION

- 4.1 Excavate to provide specified cover; lay pipe on pipe bedding.
- 4.2 Use of explosives: submit detailed plans outlining all proposed blasting operations, locations, methods and use of mats and other safety measures.
 - 4.2.1 Obtain written approval from Engineer before using explosives.
 - 4.2.2 Provide Special Hazard Insurance covering liability for all blasting operations.
 - 4.2.3 Use thoroughly experienced demolition personnel.
- 4.3 Remove excavated rock and rubble not suitable for backfill to disposal areas obtained by Contractor.

5. DIRECTIONAL BORING

- 5.1 Expose or pothole all pipes and utilities which are to be crossed; provide minimum 9" clearance except for water mains, provide clearance as specified hereinafter.
- 5.2 Inject flowable fill or grout in bore holes to be abandoned; inject flowable fill or grout at same time tool string is removed to avoid collapse of cover material.
- 5.3 Clean out pipe upon completion of work.
- 5.4 Properly dispose of boring mud; do not deposit on ground or in street or dispose of mud in any storm sewer or sanitary sewer; mud may be mixed with open trench pipe backfill material provided compaction requirements are met.
- 5.5 Pipe tolerances: 0.50% maximum vertical deviations from plan grade; 1.00% maximum horizontal deviation from plan alignment, unless otherwise approved by Engineer.
- 5.6 Contractor responsible for correct vertical and horizontal alignment; pipe installed with incorrect vertical and/or horizontal alignment will be replaced by Contractor with proper installation at no additional cost to Owner.
- 5.7 Install high-strength tracer wire on all directional bored pipe with minimum tensile strength of 1,150 lbs.

5.8 Other boring techniques are acceptable, including augering and micro-tunneling.

6. SHEETING, SHORING AND BRACING

6.1 Construct sheeting, shoring and bracing, in accordance with OSHA standards, to hold walls of excavation where shown on plans or at other locations, to provide safety for workmen, to protect existing utilities or structures or to permit construction in the dry; sheeting operations which in the opinion of Engineer cause excessive vibration will not be allowed.

6.2 Leave sheeting and shoring in place when removal, in the opinion of Engineer, might damage new pipe, existing utilities or structures.

6.3 Sheeting, shoring and bracing is incidental to construction; include cost in appropriate unit cost.

7. DEWATERING

7.1 Do all work in dry; provide for handling of water encountered during construction.

7.2 Lay no pipe in or pour no concrete on excessively wet soil.

7.3 Prevent surface water from flowing into excavation; remove water as it accumulates.

7.4 Divert stream flow away from areas of construction.

7.5 Do no pump water onto adjacent property without approval of Engineer.

7.6 Cost of dewatering is incidental to construction.

8. EXISTING UTILITIES

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

8.2 Conflicting utilities not shown on plans, except services: notify Engineer immediately.

- 8.3 Utility services are not generally shown on plans; protect existing services during construction of new main.
 - 8.3.1 Cut water services only if they conflict with line and grade of new work; if services are cut, use hose or other flexible connector to maintain service while new work is installed; reinstall permanent service; handling of services is incidental to construction.
- 8.4 Water main and sanitary sewer conflicts: notify Owner and Engineer immediately; provide all necessary shut-down, repair and relocation where conflicts occur; furnish labor, equipment, pipe and fittings; when broken due to carelessness, repair is incidental to construction.
- 8.5 Utility lines, poles and appurtenances, except water mains and sewer lines in direct conflict with line and grade of work will be relocated by utility company before or during construction at no expense to Contractor unless plans direct Contractor to perform work; Owner will advise utility companies of lines, poles and appurtenances to be moved after award of contract; cooperate with utility companies in relocation of lines, poles and appurtenances.
- 8.6 Support and protect, by timbers or other means, all utility pipes, conduits, poles, wires and other apparatus not to be moved; protective measures subject to approval of Engineer.
- 8.7 No utility or utility service will be moved to accommodate equipment, method of operation or for convenience of Contractor when utility or utility services does not conflict directly with line and grade of work.
- 8.8 Install water valve wrench with spacers on stem over water valves and curb stops to maintain proper valve box alignment during backfill operations; remove valve wrench after backfill and/or subgrade preparation for paving is completed.

9. SURFACING REMOVAL

- 9.1 Remove existing street, road, sidewalk and driveway surfacing, minimum of 1' outside edge of trench where open cut construction is specified; see plans for designation of street surfacing.
 - 9.1.1 Remove on lines approximately parallel or perpendicular to centerline of trench.

Excavation and Backfill

- 9.1.2 Cut vertically and horizontally on straight lines; saw cut full depth of surfacing.
- 9.1.3 Portland cement concrete pavement: remove to nearest joint or as directed by Engineer and as shown on plans; cut steel as necessary.
- 9.1.4 Asphalt pavement: cut to a neat line.
- 9.1.5 If remaining surfacing along saw cut line becomes cracked or broken during construction, provide additional saw cuts, surface removal and surface replacement as directed by Engineer at no cost to Owner.
- 9.2 Dispose of waste material at disposal area approved by Engineer.
- 9.3 Surfacing removal is incidental to construction; include cost in applicable unit price.

10. TRENCH BACKFILL

- 10.1 Backfill trench immediately after Engineer has recorded location of connections and appurtenances and after Engineer has inspected the work.
- 10.2 Allow no more than 100' of trench to be open at one time; install appurtenances and backfill as work progresses.
- 10.3 Backfill with suitable excavated material or borrow materials; use no large stones, large clods, organic matter, rubbish, frozen or unsuitable materials.
- 10.4 Backfill simultaneously on both sides of pipe to prevent displacement.
- 10.5 Use compacted backfill in all locations.
 - 10.5.1 Carefully hand place and compact suitable backfill to 1' over top of pipe; compact to 95% maximum density.
 - 10.5.2 Continue backfill operation with excavated material placed in layers not to exceed 1' up to subgrade surface in surfaced areas.
 - 10.5.3 Compact backfill above 1' over top to 1' below subgrade to 95% maximum density; maintain moisture content from minus 1% to plus 3% optimum.

Excavation and Backfill

- 10.5.4 Compact backfill from 1' below subgrade to subgrade to 95% maximum density; maintain moisture content between -1% and +3% of optimum; provide uniform subgrade for full width of surfacing plus 1' on each side.
- 10.5.5 Fill upper 18" of trench in unsurfaced areas with topsoil; match surrounding ground surface; compact to 85% maximum density; do not over compact areas with gardens and lawns.
- 10.6 Provide full depth of crushed rock bedding from top of pipe to bottom of pavement for all excavation located in paved areas. Hand tamp material to 1" above top of pipe. Compact remaining trench to minimum 65% relative density.
- 10.7 New water main below existing water main, sewer or gas main: backfill under existing water main, sewer or gas main with sand; compact to 95% maximum density; length of sand backfill at elevation of existing utility: equal to depth of excavation below utility.
- 10.8 Provide and pay all costs for independent testing laboratory to conduct moisture-density compaction tests to ensure conformance with compaction requirement.
 - 10.8.1 Engineer may increase rate of testing if soil conditions or Contractor operations indicates specified soil moisture and density is not being consistently obtained.
 - 10.8.2 Contractor shall excavate for tests, if required.
- 10.9 If settlement of any trench occurs within period of guarantee and bond; refill, compact, level off and restore surfacing.

11. SURFACE RESTORATION

- 11.1 Grade tops of trenches to smooth, uniform lines without large lumps, clods or debris.
- 11.2 Replace damaged flowers, shrubbery and trees with new plantings of equal type and quality at no cost to Owner; trees removed because of conflict with alignment of pipe shall not be replaced, except where shown on plans.
- 11.3 Dispose of all brush and rubbish as specified hereinbefore.

Excavation and Backfill

- 11.4 Sod all areas disturbed by construction including site grading.
 - 11.5 Prepare site for sodding by discing, harrowing and hand raking or other means following site grading; work soil to depth of 3".
 - 11.6 Precede sodding with uniform application of commercial grade fertilizer of nitrogen, phosphate, and potash (200 lbs. of fertilizer grade 20-26-6 per acre, or approved equal); cultivate area 1.5" deep and work with harrow within 24 hours before sodding; smooth surface to eliminate clods and lumps before sodding.
 - 11.7 Sod: Minimum 18 months old, nursery grown bluegrass; free of objectionable grasses and weeds and insects; mowed at height of 2" prior to cutting; source subject to approval of Owner based on visual observation of condition.
 - 11.7.1 Sod shall be harvested, delivered and placed within a time period of 24 hours.
 - 11.7.2 Sod showing signs of heating and dehydration will be rejected.
 - 11.8 Sodding shall be performed before June 15 or after August 15, unless permitted otherwise by Engineer.
 - 11.9 Water all areas thoroughly initially; Contractor responsible for watering sodded areas until it has achieved vigorous growth.
 - 11.10 Minimize soil erosion during construction and prevent eroded soil from leaving the construction project site onto adjacent property.
12. GRANULAR SURFACING
- 12.1 Place granular surfacing at locations shown on plans or as directed by Engineer.
 - 12.2 Gravel or crushed stone: Place 6" compacted crushed stone in top of trench; conform to IDOT Class A crushed stone; place and compact in two lifts.
13. PAYMENT
- 13.1 No separate payment will be made for work covered in this part of the specifications except as set forth below. Contract unit prices shall include all costs for each item of work.

Excavation and Backfill

- 13.2 If items are required during construction for which no unit prices are shown on Proposal, contract price shall be adjusted on basis of unit price negotiated with Contractor.
- 13.3 Sodding, Square: Unit price includes all labor, materials and equipment necessary to prepare sod bed, fertilize, sod, water, mow and miscellaneous associated work.

PART 4 - WATER MAINS AND APPURTENANCES

INDEX

- | | |
|------------------------------|---------------------------------------|
| 1. WORK INCLUDED | 7. VALVE BOXES |
| 2. GENERAL | 8. FIRE HYDRANTS |
| 3. PIPE MATERIALS | 9. THRUST BLOCKS |
| 4. WATER MAIN INSTALLATION | 10. VALVE AND HYDRANT
INSTALLATION |
| 5. WATER SERVICE CONNECTIONS | 11. TESTING |
| 6. VALVES | 12. PAYMENT |

1. WORK INCLUDED

- 1.1 Pipe, fittings, valves, special valves and accessories necessary for construction of water mains and appurtenances and connecting improvements to existing system.
- 1.2 Modifications to existing water mains to connect the improvements.

2. GENERAL

- 2.1 Before installation, verify all measurements including:
 - 2.1.1 Location of appurtenances and connections to existing water mains.
 - 2.1.2 Type and location of joints on existing water mains at points of connections.
 - 2.1.3 Outside diameter of existing piping.
- 2.2 Owner will shut off existing water mains when notified by Contractor.
- 2.3 Make necessary field measurements to determine pipe laying lengths; work pipe into place without forcing or springing.
- 2.4 Details of existing pipe not guaranteed.

3. PIPE MATERIALS

- 3.1 Ductile iron pipe (DI): ANSI A21.50 manufactured in accordance with ANSI 21.51; minimum thickness, Class 52 according to AWWA C151 for 4" to 24" sizes. Standards for larger sizes as specified by the Utility.
 - 3.1.1 Enameline pipe using standard cement lining; ANSI A21.51 (AWWA C104). Coat outside of pipe with bituminous enamel. Asphalt according to AWWA C151.
 - 3.1.2 Push on or mechanical joint: In accordance with ANSI A21.15 according to AWWA C151.
 - 3.1.3 Restrained, buried joint: Pipe manufacture's standard field removal system.
 - 3.1.4 Use elastomeric gasketed push-on joints, AWWA C111; use restrained or locked joints on fittings and adjacent to downward, vertical bends.
 - 3.1.4.1 In areas of contaminated soil provide ductile iron pipe with nitrile gaskets.
 - 3.1.4.2 For other soil contaminants, special gaskets will be required by the Utility.
 - 3.1.5 Shipment and storage: do not telescope small pipe inside larger pipe for shipment or storage.
 - 3.1.6 Pipe with damage to cement mortar lining will be rejected; field patching not permitted except on cut pipe.
 - 3.1.7 Pipe markings shall include: Name of manufacturer, size and class, and spigot insertion depth gauge.
- 3.2 Polyvinylchloride pipe (PVC): AWWA C900, dimension ratio (DR) 18.
 - 3.2.1 Outside diameter shall be the same as ductile iron pipe.
 - 3.2.2 Use elastomeric gasketed push-on joints, AWWA C900; solvent cement welded joints not permitted.

- 3.2.3 Restraining system shall be manufactured integrally into pipe.
- 3.2.4 Ductile iron mechanical device designed for joint restraint complying with the requirements of ASTM F 1674.
- 3.2.5 When pipe is cut in field, deburr and bevel cut edges to prevent gasket damage.
- 3.2.6 Protect pipe from prolonged (more than one month) exposure to direct sunlight.
- 3.2.7 Pipe markings shall include: Name of manufacturer, size and class, and spigot insertion depth gauge. National Sanitation Foundation (NSF) seal.
- 3.3 Pipe Care:
 - 3.3.1 Do not telescope small pipe inside larger pipe.
 - 3.3.2 All pipe is to be handled by use of slings, hoists, skids, or other approved means.
 - 3.3.2.1 Do not insert pallet forks inside of pipe.
 - 3.3.3 Dropping or rolling of pipe materials is not permitted.
 - 3.3.4 Remove all mud and debris from interior of pipe prior to install.
 - 3.3.5 Engineer may reject defective or damaged pipe. Rejected pipe shall be removed from site.
- 3.4 Fittings: ductile iron, mechanical joint, cement mortar lined with seal coat of bituminous enamel per AWWA C104.
 - 3.4.1 Fittings for 3" through 20" size shall be compact iron per ANSI/AWWA C153/A21.53 of gray cast iron or full-sized ductile iron per ANSI/AWWA C110/A21.10. Pressure rating for gray cast iron shall be 250 psi.
 - 3.4.2 Provide EBBA, Inc., Megalug retainer glands for all fittings and valves.
- 3.5 Nuts and bolts: This section shall apply unless otherwise noted.

- 3.5.1 All bolts and hex nuts for mechanical and flanged joints shall be high-strength “Cor-Ten”, “Usalloy”, or other high-strength, low alloy steel that is corrosion resistant as manufactured according to AWWA C111. Stainless steel strongly preferred.
- 3.5.2 Provide ceramic-filled, baked-on, fluorocarbon resin coating for bolts and nuts.
- 3.5.3 Include factory-applied lubricant that produces low coefficient of friction of ease of installation.
- 3.6 Polyethylene film: 8 mil thickness; black pigmentation; wrap DI pipe as recommended by manufacturer; AWWA C105; use for corrosion protection of all ductile iron pipe, fittings, appurtenances and buried, bolted connections, and where Utility determines as needed.
 - 3.6.1 Use flat tube width recommended by manufacturer for various pipe diameters.
 - 3.6.2 Use 2" x 8 mil polyethylene adhesive tape with paper backing.
- 3.7 Water service pipe: Use for all water service pipe on plans.
 - 3.7.1 Crosslinked polyethylene (PEX) pipe or approved equal.
 - 3.7.1.1 Pipe shall be approved by manufacturer for use with AWWA C800 fittings, using stainless steel inserts.
 - 3.7.1.2 Pipe shall be certified to AWWA C 904 “Cross-linked Polyethylene (PEX) Pressure Pipe, 1/2 in. (12 mm) Through 3 in. (76 mm), for Water Service” by approved testing agency. In addition, pipe shall be certified to standards ASTM F876, CSA B137.5, NSF 14, NSF 61 and PPI TR-4, by approved testing agencies, with a standard materials designation code of 3006, as certified by the PPI.

Water Mains and Appurtenances

- 3.7.1.3 Pipe shall be rated for not less than 160 psi @ 73.4°F (1379 KPa @ 23°C) based on a 0.63 design factor.
 - 3.7.1.4 Pipe shall have a co-extruded UV Shield made from UV-resistant high-density polyethylene, color Blue.
 - 3.7.1.5 Pipe shall have minimum recommended UV exposure time of one (1) year when tested in accordance with ASTM F2657, or as per manufacturer's recommendations.
 - 3.7.1.6 Pipe shall be compatible with cold-expansion compression-sleeve fittings certified to ASTM F2080 for installations as cold as -40°F (-40°C). Flared fittings are allowed for services less than 2".
 - 3.7.1.7 Manufacturer shall warrant the pipe to be free from defects in material and workmanship for a period of twenty-five (25) years.
 - 3.7.1.8 Pipe can be installed on native soil.
- 3.8 Sleeve type couplings: Standard solid black sleeves, Tyler 5-144L or approved equal; bolted straight coupling, Smith-Blair 441 or Romac Style 501, 6 bolt, 6" long, or equal; to fit pipe sizes shown on plans; use as required for connections to existing water main materials.
- 3.8.1 Sleeve: ductile iron, ASTM A536 with inside taper for uniform gasket sealing.
 - 3.8.2 Gaskets: rubber, Grade 30, standard; use all new materials.
 - 3.8.3 Follower flanges: ductile iron, ASTM A536.

3.9 Water main insulation: polystyrene board, Owens Corning FORMULAR 400, or equal.

3.9.1 Average density not less than 2.4 lb./CF; ASTM C303.

3.9.2 Compressive strength not less than 40 psi; ASTM D1621.

3.9.3 2" total thickness unless shown otherwise.

3.9.4 Thermal conductivity, k factor, not greater than 0.20 at 75EF.
(minimum R value of 5 per inch); ASTM C518.

3.9.5 Water absorption less than 0.05% (by volume); ASTM C272.

3.9.6 Watervaportransmissionaverage not greater than 0.6 perm-inch
ASTM E96.

3.9.7 Linear coefficient of thermal expansion not greater than 0.000027
in./in./EF.; ASTM D696.

4. WATER MAIN INSTALLATION

4.1 Lay pipe in dry; 5'-6" minimum earth cover over top of pipe, except where shown otherwise on plans, as required to provide clearance at existing utilities, or when otherwise directed by Engineer.

4.1.1 Install water main and appurtenances in accordance with AWWA C600 and C605.

4.1.2 Make pipe joints in accordance with AWWA C600 and C900 and as recommended by manufacturer; use minimum amount of gasket lubricant; apply to gasket only; do not apply to inside of bell.

4.2 Clean pipe interior of foreign material before lowering into trench; keep clean at all times; when pipe laying is not in progress, including lunch breaks, nights, weekends and other non-working periods, securely close open ends of pipe and fittings with watertight plug or cap.

- 4.3 Place in trench in sound, undamaged condition with uniform bearing along full length of pipe, do not use supports; do not injure pipe coating or lining; use web slings to install or move pipe; use of end hooks and dropping pipe are prohibited. No pipe shall be laid in water, nor shall water be allowed to rise in the trench around the pipe.
- 4.4 Cut pipe in neat and workmanlike manner without damage to pipe; bevel ends of pipe.
 - 4.4.1 Completely coat damaged ends of cut DI pipe with bituminous sealer; use spray-on sealer which will adhere to liner at any temperature; do not install pipe and fittings showing blisters or holes.
- 4.5 Before installation of ductile iron pipe, tap pipe lightly with light hammer to detect cracks; visually inspect pipe lining for defects; do not install defective, damaged, or unsound pipe.
- 4.6 Before installation of polyvinylchloride pipe, inspect pipe visually inside and outside for defects; do not install defective, damaged, or unsound pipe.
- 4.7 Deflect ductile iron pipe joints as required in accordance with recommendations of pipe manufacturer or 3 degrees per joint, whichever is less; use suitable fittings for larger deflections in alignment or grade.
- 4.8 Deflect polyvinylchloride pipe joints as required in accordance with recommendations of pipe manufacturer or 1-1/2 degrees per joint, whichever is less; use suitable fittings for larger deflections in alignment or grade.
- 4.9 Use ductile iron pipe for water main for the first two full pipe lengths outside of vertical offsets, for all pipe between the elbows used to make vertical offsets and where shown on plans.
- 4.10 Install tracer wire continuously along the bottom of all water main pipe. Refer to Standard Drawing WM-102, and as appropriate, WM-201.
 - 4.10.1 Trenchless: #12 AWG steel core extra high-strength hand drawn underground wire, insulated minimum thickness of 0.045", blue in color; minimum 1,150 lbs. tensile strength, Copperhead, or equal.

Water Mains and Appurtenances

- 4.10.2 Trenched: #12 AWG solid copper conductor, insulated minimum thickness of 0.045", blue in color, minimum 150 lbs. tensile strength. LLDPE insulation suitable for direct bury.
- 4.10.3 Tape tracer wire to pipe minimum 1 time to midpoint of each pipe section. Tracer wire shall be laid continuously along bottom of pipe. Tape shall be 2" wide and 10 mil thickness.
- 4.10.4 A 3M splice kit or approved equal shall be used on all splices. Splice new tracer wire to existing tracer wire. No below grade splicing shall be permitted except as authorized by the Utility.
- 4.10.5 Extend tracer wire along new main; terminate wire in tracer wire receptacle box mounted on to each fire hydrant; secure to hydrant break flange; receptacle box: AA Manufacturing Tracer Wire Receptacle Model TW-182.
- 4.10.6 Tracer wire shall be brought up the exterior of the main valve box. Drill hole into the side of the valve box approximately 6" below the lid if the valve box is not on pavement or 6" below the bottom of the pavement if the valve box is on pavement. Loop the tracer wire through the hole approximately 6" inside the valve box.
- 4.10.7 Tracer wire shall be installed on water services and attached to the main tracer wire. Install tracer wire to curb stop box and attach with stainless steel clamp 2" below grade. If new service installation ends before reaching curb stop box, tracer wire shall be attached to the existing service with a stainless-steel clamp where the connection is made.
- 4.10.8 Ground rod shall be 3/8" diameter, 60" steel rod uniformly coated with metallically bonded electrolytic copper. Install adjacent to connections to existing piping at other locations determined by the Utility.
- 4.10.9 Ground rod clamp shall be made of high-strength, corrosion-resistant copper alloy.
- 4.11 Water mains shall be separated from gravity sewers by a horizontal distance of at least 10', unless bottom of water main is at least 1'-6" above top of sewer and water main is placed in a separate trench or on a bench of undisturbed earth in same trench. If a bench is used, a minimum horizontal separation of 3' must be maintained.

- 4.11.1 If above separations cannot be achieved, replace sewer with pipe as specified for water mains.
- 4.12 Water mains shall be separated from sewer force mains by a horizontal distance of at least 10' unless force main is constructed of water main materials; a minimum horizontal separation of 4' must be maintained.
- 4.13 Vertical separation of water mains crossing over any sanitary sewer should be at least 1'-6" when measured from bottom of water main to top of sewer; if 1'-6" separation cannot be achieved, a minimum separation of 6" shall be maintained if water main is over sewer or 1'-6" if water main is under sewer; separation distance shall be maximum possible in all cases.
 - 4.13.1 One full length of water main pipe shall be centered at sewer crossing. Water main and sewer shall be adequately supported and have watertight joints; use low permeability soil for backfill within 10' of point of crossing.
 - 4.13.2 Where sewer crosses over or less than 18" below a water main, install one full length of sewer constructed of water main pipe material, centered at sewer crossing. Water main and sewer shall be adequately supported and have watertight joints. Alternatively, the water main may be centrally placed in casing pipe supports with casing spaces and have end seals extending at least 10' to each side of crossing. Use low permeability soil for backfill within 10' of point of crossing.
- 4.14 If water main crosses below storm sewer or crosses less than 18" above storm sewer, replace the storm sewer with one full length of pipe of water main materials, or replace the storm sewer with reinforced concrete pipe with flexible gasket joints meeting ATM C443 so that the ends of the pipe joints are spaced equidistant from the crossing and extending at least 10' to each side of the crossing, or construction the watermain with ductile iron pipe nitrile gaskets or the water main may be centrally placed in a casing pipe supported with casing spacers and have end seals extending at least 10' to each side of the crossing. If physical conditions prohibit the separation in either case, water main may be placed not closer than 6" above storm sewer or 18" below storm sewer.
- 4.15 Water mains shall be separated from sewer manholes by a horizontal distance of at least 3'.

Water Mains and Appurtenances

- 4.16 Install valves with stems vertical and centered in valve box. Carefully compact backfill around valve box to required grade. Operate to ensure proper working condition and that operating nut is accessible.
- 4.17 Where construction terminates, install a valve 20' before the termination.
- 4.18 Cover pipe ends with watertight cap when pipe laying not in progress.
- 4.19 Plug or cap all pipe ends or fittings left for future connections; construct concrete thrust blocks as shown on Standard Drawing for dead ends (alternate method). Do not block end of pipe with concrete.
- 4.20 Provide restrained or locking joints on fittings and pipe joints adjacent to downward, vertical bends; thrust blocks may be required; contact the utility for further specifications.
- 4.21 Construct concrete thrust blocks at all fittings, at dead ends and at alternate pipe joints where pipe joints are deflected to accommodate small changes in pipe direction.
- 4.22 Construct thrust blocks as specified hereinafter.
- 4.23 Install 4'x8' sheets of insulation above and below water main over culverts and storm sewer as needed. Cost is incidental to construction.

5. WATER SERVICE CONNECTIONS

- 5.1 Water service installation:
 - 5.1.1 Shall comply with local plumbing and fire codes in addition to the Utilities specifications contained herein.
 - 5.1.2 All 3/4" to 1" taps shall be made on the upper half of the water main at a 45-degree angle. Taps 1½" and larger can be made at a 90-degree angle.
 - 5.1.3 A 4" main shall not receive a tap greater than 3/4".
 - 5.1.4 Service lines shall be buried at least 5' depth.

Water Mains and Appurtenances

5.2 Taps and tapping saddles: ductile iron body, double stainless-steel strap, corrosion resistant nylon coating, design for use on PVC pipe or DI pipe as applicable, Rockwell Type 317, or equal.

5.2.1 Use tapping saddles for all corporation stops.

5.2.2 Use shell type cutting tool made especially for direct tapping heavy wall PVC.

5.2.3 Corporation cocks: $\frac{3}{4}$ " through 2" shall be made of brass conforming to AWWA C800, shall be suitable for tapping PCC or iron pipe as applicable and use flared copper pipe or polyethylene.

5.3 Curb stops and boxes:

5.3.1 Replace existing curb stops with new.

5.3.2 Curb stops: shall be made of brass conforming to AWWA C800, 200 psi working pressure, O-ring seals, 1/4 turn open for flared copper or polyethylene. Ford Ball Valve B11 style, or equal, for PVC service lines; Ford Ball Valve B44, or equal, for copper service lines.

5.3.3 Curb box: extension type curb box with arch pattern base, sliding extension, cast iron base and lid, 1" upper section with rod.

5.4 Size: match existing. Size will vary between 3/4" and 1" dia.

6 VALVES

6.1 Type permitting repacking or replacing O-rings under pressure when wide open.

6.2 Provide special tools required for disassembling and repacking valves.

6.3 Resilient-seated gate valves: For valves 12" or smaller. Conform with AWWA C509 or AWWA C515 and NSF 61, and the following:

6.3.1 Non-rising stem with 2" operating nut; open counterclockwise.

Water Mains and Appurtenances

- 6.3.1 Epoxy coated ductile iron valve body, ASTM A536; O-ring seals, urethane or nitrile rubber coated ductile iron wedge; bronze trim, mechanical joint ends, external bolts and hex nuts shall be stainless steel according to ASTM A20, Type 304.
 - 6.3.2 Test each valve for sealing without leakage through valve seat at 200 psi differential and without leakage through valve body and stem seals at 400 psi.
 - 6.3.3 Double O-rings permanently lubricated between seals. Lubricant certified for use in potable water.
 - 6.3.4 Approved valves: Clow Corporation, Waterous Company AFC-2500 and Mueller Company A2360-20.
 - 6.3.5 Be coated inside and out with coating meeting or exceeding AWWA C550 and have raised lettering for name of manufacturer and the year when cast on the body. Epoxy coated exterior.
- 6.4 Tapping sleeves and valves:
- 6.4.1 Valves: gate valves complying with AWWA C509 or AAWWA C515.
 - 6.4.2 Sleeves: minimum 14-gauge, stainless steel according to ASTM A 240, Type 304, working pressure of 150 psi, flanged with dimension and drillings according to AWWA C110 or ANSI B16.1 class 125.
 - 6.4.2.1 Sleeve must fully surround pipe. Minimum sleeve length:

Outlet Flange Size	Minimum Sleeve Length
4"	15"
6"	15"
8"	20"
10"	25"
12"	25"
Over 12"	As Approved by the Utility

- 6.4.3 Nitrile rubber gasket, minimum thickness 0.125".

- 6.4.4 Outlet flange shall be stainless steel complying with ASTM A 240, Type 304; ANSI B16.1, 125 pound pattern.
- 6.4.5 Hex nuts and bolts shall be stainless steel complying with ASTM A 240, Type 304.
- 6.5 Valves for buried service shall be provided with hand adjustable screw type valve box consisting of a base, center section, top section, and cover; inside minimum diameter of valve box shall be 5-1/8". Provide slide-type valve box when located in pavement. Cover shall be plainly marked on top "Water".
- 6.6 For installation within structures, use flanged joints with dimension and drillings according to AWWA C110 or ANSI B16.1 Class 125.
- 6.7 Bolts and hex nuts used on bonnet shall be manufacturer's standard, either fabricated from "Cor-Ten", stainless steel, or other alloy steel for corrosion resistance or electroplated with zinc or cadmium. The hot-dip process, in accordance with ASTM Standard Designation A-153, is not acceptable for the threaded portions of nuts and bolts.
- 6.8 For buried installations, use mechanical joints per AWWA C111.
- 6.9 Wrap valves and sleeves with polyethylene film, as specified for iron pipe.
- 6.10 Install valve boxes with all valves.

7 VALVE BOXES

- 7.1 Cast iron, Tyler, or equal, slide type when used in paved areas; all other areas screw type; cast iron cover, labeled "water"; select top and bottom sections to suit depth of cover shown on plans or specified. Inside diameter of valve box shall be at least 5-1/8".

8 FIRE HYDRANTS

- 8.1 Conform with AWWA C502 and the following:

Water Mains and Appurtenances

- 8.1.1 Independently valved, 6" diameter inlet, break flange dry barrel fire hydrants, break away items include stem coupling and flange, constructed primarily of ductile iron and highest grade of bronze customarily used by manufacturer; oil lubricated top, center stem with Buna-N O-ring seals; allow full circle rotation of nozzle section; depth of bury to match depth of cover for water main. Test rated to 300 psi.
 - 8.1.2 Two 2-1/2" dia. hose nozzles and one 4-1/2" dia. pumper nozzle with National Standard threads, caps and rubber gaskets; no cap chains. Pumper nozzle shall be equipped with factory installed 5" Storz quick connect coupling and cap. Nozzles shall be threaded or pinned, no leaded connections allowed.
 - 8.1.3 External bolts and hex nuts shall be stainless steel according to ASTM A193, Grade B 8.
 - 8.1.4 Provide 6" dia. mechanical joint inlet and 5-1/4" dia. bronze to rubber main valve, with integral bronze drain valve; designs using separate operating rods for drain valves not acceptable; open main valve counterclockwise.
 - 8.1.5 Cap and operating nut shall be Type C, counterclockwise open. Pentagon shaped, 1-1/2" point to flat operating nut.
 - 8.1.6 Auxiliary valve and valve box: use resilient-seated gate valve and valve box specified hereinbefore. Required for all hydrants.
 - 8.1.7 Approved fire hydrants: Mueller Centurion Model A-423, Clow Medallion Model 2524-4B, or Watrous Pacer Model WB-67. The Watrous Pacer WB-67 must have the following options; double top operating nut (top nut ductile iron, bottom nut bronze) with weather shield and oil reservoir.
 - 8.1.8 Finished appearance of hydrant shall be red with silver dome and caps.
- 8.2 Coat interior and exterior of fire hydrants, except exterior above grade mark, with two coats of asphalt varnish; finish exterior of hydrant above grade mark as specified herein.

Water Mains and Appurtenances

- 8.2.1 Thoroughly clean in accordance with Steel Structures Painting Council Specification SP8 (Pickling) and prime with Tnemec 10-99 or 10-99W Alkyd Rust-inhibitive Primer and two coats of Tnemec 2-2025 Tnemec-Gloss Alkyd Enamel; color: highway yellow.
- 8.2.2 Other paints may be used provided if fully compatible with paint specified herein and are approved by Owner.
- 8.2.3 Provide 2 copies of literature showing compliance with these paint and surface preparation specifications.
- 8.3 After hydrant is installed and is ready for use:
 - 8.3.1 Touch up paint as necessary to cover paint damaged during installation.
- 8.4 Wrap fire hydrants with polyethylene film, as specified for iron pipe.
- 8.5 Each hydrant shall be connected to the main by a 6" branch. Install fire hydrants with auxiliary valves and valve boxes. Auxiliary valve and valve boxes not shown on plans.

9. THRUST BLOCKS

- 9.1 Provide Class C concrete thrust blocks rated to 4000 psi at all bends, dead ends, hydrants, and at alternate joints where joints are deflected to accommodate small changes in pipe direction.
- 9.2 Extend thrust block to undisturbed edge of trench; minimum thickness of 1'-6".
- 9.3 Refer to Standard Drawing MW-101 for general arrangement of thrust blocks. Place plywood between fittings and thrust block. No bolts shall come in contact with thrust block. A sheet of plastic shall be wrapped around the pipe including the bolt circle before the concrete is placed.

9.4 Minimum bearing area of thrust blocks, SF:

<u>Pipe Size</u>	<u>90° Bend</u>	<u>45° Bend</u>	<u>11¼, 22½ Bend</u>	<u>Tee, Dead End</u>
4	3	1	2	1
6	6	3	2	4
8	11	6	3	8
10	17	9	5	12
12	24	13	7	17
14	33	18	9	23
16	43	23	12	31

10. VALVE AND HYDRANT INSTALLATION

10.1 Install valve with stem vertical and centered in box, support as required.

10.2 Wrap valves with polyethylene film, as specified for iron pipe.

10.3 Check all valve bolts when installed; tighten as necessary after water main is at operating pressure.

10.4 Carefully tamp backfill around each valve box to distance of 4' on all sides of box or to undisturbed trench face, if less than 4'.

10.5 Hydrants:

10.5.1 Install plumb, using anchoring, standard, or hydrant tee, anchoring pipe or coupling and other appurtenances as required. Set at elevation so that cover will not be less than for adjacent main; set grade mark on hydrant barrel at finished ground level.

10.5.1.1 Standard tee and anchoring elbow may be used in lieu of hydrant tee; anchoring elbows must be used where shown on plans.

10.5.2 Set on concrete foundations. Install plumb at 5' bury depth. Set at elevation required for flange to be 4" above final grade. Provide one cubic yard of pea gravel of washed rock backfill.

Water Mains and Appurtenances

- 10.5.3 Place center of lowest nozzle(s) at 16"-18" above grade with nozzles parallel to curb line and pumper nozzle pointing normal to the curb. Ensure that break flange and break coupling are at joint between barrel and nozzle section when extensions are installed.
- 10.5.4 Carefully tamp backfill around hydrant to a distance of 4' on all sides of hydrant or to undisturbed trench face, if less than 4'.
- 10.5.5 Tighten all stuffing boxes as hydrant is installed; operate hydrant in open and closed position to assure all parts are in working condition.
- 10.5.6 Block hydrant in place.
- 10.5.7 Install hydrant minimum 5' from back of curb.
- 10.5.8 Hydrant drains shall not be connected to or located within 10' of sanitary sewers and storm drains.
- 10.5.9 Tighten all valves and nuts and operate to ensure all parts are in good working condition.
- 10.5.10 Install as shown on Standard Drawing. Breakaway flange shall be 4" above finish grade.

11. TESTING

- 11.1 Water test all piping in accordance with AWWA C651. Complete in the following sequence at contractor's expense:
 - 11.1.1 Continuous-Feed or Slug Method (After installation)
 - 11.1.1.1 Perform initial flush, disinfect, flush, perform pressure and leak testing.
 - 11.1.1.2 Sequence may be modified with approval of the Engineer and Utility.
 - 11.1.2 Tablet Method (Concurrent with installation). Use only if approved by the Utility.
 - 11.1.2.1 Disinfect, flush, perform pressure and leak testing.

11.2 Initial Flushing:

11.2.1 Coordinate with the Utility

11.2.2 Flush pipe prior to disinfection using potable water to remove air. Insert taps to release trapped air.

11.2.3 Measure flushing velocity. Obtain minimum flushing velocity of 3 fps in the pipe to be disinfected. Use table below for minimum flushing rate according to AWWA C651:

Pipe Diameter (inches)	Flow Rate for Flushing (gpm)	Number of Taps			Number of 2 ½" Fire Hydrant Outlets
		1"	1 ½"	2"	
4	120	1	-	-	1
6	260	-	1	-	1
8	470	-	2	-	1
10	730	-	3	2	1
12	1,060	-	-	3	2
16	1,880	-	-	5	2

11.2.4 Protect public and private property from damage during flushing operations.

11.3 Disinfection:

11.3.1 Disinfect according to AWWA C651. Do not use the tablet method contained in AWWA C651 without approval from the Utility. Isolate chlorinated pipe from lines in service and from points of use. Coordinate disinfection with the Utility. Obtain test water samples, unless otherwise provided by the Utility.

11.3.1.1 May use liquid chlorine complying with AWWA B300 and B301 or, sodium or calcium hypochlorite complying with AWWA B300. All disinfecting agents shall be NSF 60 certified.

11.3.2 Procedure:

- 11.3.2.1 Induce a flow of potable water through the pipe and operate all valves and hydrants to assure full disinfection. Repeat test procedure if necessary.
- 11.3.2.2 Introduce highly chlorinated water to the pipe at a point within 5 pipe diameters of the pipe's connection to an existing potable system, or within 5 pipe diameters of a closed end if there is no connection to an existing system.
- 11.3.2.3 Introduce water containing a minimum of 25 mg/L free chlorine until the entire new pipe contains a minimum 25 mg/L free chlorine. Retain chlorinated water in pipe for at least 24 hours and no more than 48 hours.
- 11.3.2.4 If free chlorine residual is less than 10 mg/L at pipe extremities, repeat disinfection.

11.4 Final Flushing:

- 11.4.1 Flush pipe with potable water until chlorine residual equals that of the existing potable water system. Dispose of chlorinated water to prevent damage to the environment. Dechlorinate highly chlorinated water before releasing into ground or storm sewer. Obtain approval from the Utility prior to flushing activities.

11.4.2

- 11.4.3 Neutralize chlorinated residual using one of the chemicals listed below:

Residual Chlorine Concentration mg/L	Sulfur Dioxide (SO ₂) lb	Sodium Bisulfite (NaHSO ₃) lb	Sodium Sulfite (Na ₂ SO ₃) lb	Sodium Thiosulfate (NA ₂ S ₂ O ₃ + 5H ₂ O) lb	Ascorbic Acid (C ₆ O ₈ H ₆) lb
1	0.8	1.2	1.4	1.2	2.1
2	1.7	2.5	2.9	2.4	4.2
10	8.3	12.5	14.6	12.0	20.9
50	41.7	62.6	73.0	60.0	104

Water Mains and Appurtenances

11.5 Pressure and leakage test:

- 11.5.1 Remove debris from within pipe, clean and swab if required.
- 11.5.2 Secure unrestrained pipe ends against uncontrolled movement.
- 11.5.3 Provide test pumps, test plugs, pipe, and gauges necessary and make connections required for tests.
- 11.5.4 Isolate new piping from existing main. Flush water main before test to remove air; insert taps to release trapped air.
- 11.5.5 Quantity of water used for flushing will be measured by Engineer; Owner will provide water without charge for flushing for first four changes of water main contents; additional water will be billed to Contractor at prevailing rates.
- 11.5.6 Approximate contents per 100' of water main:

<u>Water Main Diameter, in.</u>	<u>Approximate Pipe Contents, gal</u>
4	65
6	147
8	261
10	408
12	588
16	1,044

11.6 Required flow and openings to flush water mains with 40 psi pressure in water main:

Water Main Diameter inches	Flow Required for Approx. 2.7 fps Velocity, gpm	Size of Tap inches			Number of 2½ inch Hydrant Nozzles
		1	1½	2	
4	100	1	-	-	1
6	200	-	1	1	1
8	400	-	2	1	1
10	600	-	3	2	1
12	900	-	-	2	2
16	1,600	-	-	4	2

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Water Mains and Appurtenances

- 11.6.1 Measure flow rate with pitot gauge if pressure is other than 40 psi in new water main; ensure flow rate is 2.5' per second, or greater.
- 11.6.2 Test pressure at highest point in isolated pipe. Test at 1.5 times the working pressure or 150 psi, whichever is greater, for 2 hours; allowable pressure drop during test period: 5 psi. If pressure drops to 5 psi below test pressure, repressurize the pipe by pumping in potable water. Accurately measure amount of water needed to repressurize the system. Do not pressurize more than 5 psi over the test pressure at the highest point in the isolated system.

- 11.6.3 Maximum allowable leakage (L), gallons per hour:

$$L = \frac{(S)(D)(P)^{1/2}}{148,000}$$

Where:

S = length of pipe section under test, feet

D = nominal pipe diameter, inches

P = average test pressure, psig

- 11.6.4 Allowable leakage per 1,000' of water main with average test pressure of 150 psig:

<u>Water Main Diameter, in.</u>	<u>Allowable Leakage, gal./hour</u>
4	0.33
6	0.50
8	0.66
10	0.83
12	0.99

- 11.6.5 Examine trench for leakage during test; if test pressure cannot be maintained within limit set out hereinbefore or if quantity of make-up water exceeds computed maximum allowable leakage, pipe section fails test.

11.6.5.1 Excavate, replace defective pipe and fittings, remake defective pipe joints and backfill at no cost to Owner; repeat test until requirements have been met.

- 11.6.6 After testing is completed, remove corporation cocks if not used for water service connection and install brass plugs.

11.7 Bacteria Sampling:

- 11.7.1 Test water mains according to AWWA C651, including collection of 2 consecutive sets of acceptable bacteria samples 24 hours apart. If the initial disinfection procedure fails to produce satisfactory bacteriological results or if other water quality is affected, repeat the disinfection procedure.
- 11.7.2 Collect at least 1 set of samples from every 1,200' of the new water main plus 1 set from the end of the line and at least 1 set from each branch.
- 11.7.3 If test fails, contractor shall pay for water used for additional testing and flushing.
- 11.7.4 After completion of disinfection, the Utility will collect bacteriological samples from new mains. The contractor will be responsible to deliver to a certified, independent laboratory for testing. Samples must test "SAFE". If samples test "UNSATISFACTORY" or "UNSAFE", repeat disinfection procedures until sample tests "SAFE". Contractor responsible for all testing costs.

12. PAYMENT

- 12.1 No separate payment will be made for work covered in this part of the specifications except as set forth below. Contract unit prices shall include all costs for each item of work.
- 12.2 Tapping Valves and Sleeves, Ea.: Unit price includes furnishing and installing tapping sleeves and valves on water main under pressure, fittings and appurtenances as required, drilling, cutting, jointing, blocking and miscellaneous associated work; includes furnishing and installing valve boxes and cover.
- 12.3 Water Main Directional Bored in Place, LF: Unit price includes water main pipe directional bored in place, boring pits, fittings, tracer wire, pipe insulation as needed, testing, disinfection, and appurtenances except valves and fire hydrants and miscellaneous associated work.
 - 12.3.1 Length will be measured along centerline of pipe with no deduction for valves or fittings except as noted on plans.

Water Mains and Appurtenances

- 12.3.2 Does not include piping for hydrant assembly.
- 12.3.3 Does not include piping not used in final water distribution system.
- 12.3.4 Also includes water main installed in open cut.
- 12.4 Water Service Connections, Ea.: Unit price includes furnishing and installing corporation stop, tapping saddle and/or tee where specified for connection to main.
- 12.5 Curb Stop and Box, Ea.: Unit price includes furnishing and installing curb stop, curb box, fittings and appurtenances as required where shown on plans. Match size of existing water service pipe.
- 12.6 Water Service Pipe, Ea.: Unit price includes furnishing and installing water service pipe by directional bore method from corporation stop or tee to end of service extension or point of connection with existing service pipe, all pipe fittings connectors, excavation and backfill of boring pits, tracer wire, drilling lubricant, connection to corporation stop or gate valve and curb stop or existing service pipe, capping service pipe, and miscellaneous associated work. Does not include gate valve with box or curb stop and stop box. Match size of existing water service pipe.
 - 12.6.1 Also includes water service pipe installed in open cut.
- 12.7 Hydrant Assembly, Ea.: Unit price includes furnishing and installing hydrant, hydrant valve and hydrant valve box and cover, hydrant extensions, furnishing and installing standard or anchoring tee, anchoring coupling, anchoring pipe, anchoring elbow, where required, concrete pad, thrust block, pipe bedding, concrete blocking, excavation and backfill, painting as specified and miscellaneous associated work.

Water Mains and Appurtenances

- 12.8 Salvage Existing Fire Hydrant, Ea.: Unit price includes all costs for labor, equipment, and materials to salvage the existing fire hydrant, remove standpipe to a minimum depth of three feet below the ground surface, fill abandoned standpipe with sand and 6" of concrete, and miscellaneous associated work. Contractor shall coordinate delivery of the salvaged hydrant with the Utility.
- 12.9 Abandon Existing 4" Water Main, Ea.: Unit price includes all costs for labor, equipment and materials for excavation and backfill required for the removal of the existing valve and valve box, concrete caps as shown on plans and miscellaneous associated work, including cleanup. Contractor shall coordinate delivery of the salvaged valve and valve box with the Utility.
- 12.10 Reinstall Existing Fire Hydrant, Ea.: Unit price includes all costs for labor, equipment, and materials to salvage the existing fire hydrant, hydrant valve and hydrant valve box and cover, hydrant extensions, and standard or anchoring tee, anchoring coupling, anchoring pipe, anchoring elbow, as required to reinstall the aforementioned existing hydrant and appurtenances on the new 8" water main, including new concrete pad, thrust block, pipe bedding, concrete blocking, excavation and backfill, painting, and miscellaneous associated work.
- 12.11 Gate Valves, 8", Ea.: Unit price includes furnishing and installing valves, valve box and cover, extension section as required, plugs and appurtenances for gate valves shown on plans. Does not include valves for hydrant assembly or tapping valves and sleeves.
- 12.12 TEE, 8"x8" and Valve, 8", Ea.: Unit price includes furnishing and installing tapping sleeves and valves on water main under pressure, fittings and appurtenances as required, drilling, cutting, jointing, blocking and miscellaneous associated work; includes furnishing and installing valve boxes and cover.

PART 5 - CONCRETE

INDEX

- | | |
|-----------------------|--------------------------------|
| 1. WORK INCLUDED | 5. MIXING, PLACING, PROTECTING |
| 2. CONCRETE MATERIALS | AND CURING |
| 3. CONCRETE QUALITY | 6. FINISHING |
| 4. FORMS | 7. PAYMENT |

1. WORK INCLUDED

- 1.1 All concrete placed on project site except as specified hereinbefore.
- 1.2 Concrete for precast items and concrete surfacing replacement is covered in another part of the specifications.

2. CONCRETE MATERIALS

- 2.1 Portland cement: ASTM C150, Type I.
- 2.2 Aggregates: strong, durable, uniformly graded mineral grains conforming with ASTM C33; coarse aggregate: crushed limestone, size range: 1" to No. 4.
- 2.3 Storage:
 - 2.3.1 Cement: keep clean, dry and free from weather damage.
 - 2.3.2 Aggregates: stockpile each gradation separately on clean, non-contaminating surfaces.
- 2.4 Water: clean and free from injurious materials: ASTM C94.
- 2.5 Admixtures: applicable sections of ASTM C94, C260, C494 and C618.
 - 2.5.1 Fly ash: Class C.
 - 2.5.2 Use of calcium chloride not permitted.
 - 2.5.3 Non-shrink: Embeco by Master Builders Company, or equal.
- 2.6 Waterstop: bentonite rope waterstop, Volclay Waterstop RX 102, or equal.

Concrete

3. CONCRETE QUALITY

	<u>Class A</u>	<u>Class B</u>
3.1 Minimum compressive strength: at 28 days	4,000	2,500
3.2 Water-cement ratio: pound per pound, maximum, including water in aggregates	0.55	0.65
3.3 Minimum cement content: pounds per cubic yard	560	420
3.4 Slump: maximum 4" with no addition of water reducing admixture; with water reducer, slump per manufacturer's recommendations; ASTM C143.		
3.5 Air entrainment: 6% plus or minus 1% by volume air entrained hardened concrete; ASTM C231.		
3.6 Admixtures: per manufacturer's recommendations.		
3.7 Fly ash: Class C; maximum 15% replacement, pound for pound for specified cement content, between and including April and October.		
3.8 Concrete mix: meet approval of Engineer.		
3.9 Use Class A concrete unless shown or specified otherwise.		

4. FORMS

- 4.1 Form all concrete, unless permitted otherwise by Engineer.
- 4.2 Use metal or plywood-lined forms for exposed surfaces; erect true to line and grade; brace and tie securely.
- 4.3 Coat forms with non-staining mineral oil before placing reinforcing.

5. MIXING, PLACING, PROTECTING AND CURING

- 5.1 Provide accurate control for measuring materials.
- 5.2 Mix until mass is homogeneous and uniform in color.
- 5.3 Ready-mixed concrete: conform with specifications and with ASTM C94.

Concrete

- 5.4 Clean and dampen forms, reinforcing steel and embedded items; transfer concrete promptly from mixer to forms; thoroughly compact by tamping or vibrating.
- 5.5 Prevent segregation during placing; do not drop concrete more than 5'.
- 5.6 Place concrete continuously in each section until complete; permit not more than 30 min. between depositing adjacent layers of concrete within each section.
- 5.7 Thoroughly compact, puddle and vibrate concrete into corners and around reinforcing and embedded items.
- 5.8 Place sections of concrete in sequence which eliminates effect of shrinkage to greatest extent practicable.
- 5.9 Do not finish concrete with bleed water present on surfaces; do not over finish.
- 5.10 Surfaces: float to uniform finish with cork float; use edger on exposed edges.
- 5.11 Immediately after finishing or stripping forms, apply continuous cover of polyethylene film; thickness: 0.004"; minimum lap: 6".
 - 5.11.1 Keep film in place for 7 days.
- 5.12 Maintain concrete temperature between 60°F. and 90°F. when placing and not less than 50°F. for 72 hours after placing.
- 5.13 Do not place concrete when stormy or inclement weather is approaching or when air temperature is 38°F. or less and falling, or when darkness prevents good workmanship.

6. FINISHING

6.1 Patching:

- 6.1.1 Chip out honeycomb to sound concrete.
- 6.1.2 Fill with patching mortar: 1 part portland cement, 3 parts sand.
- 6.1.3 Fill holes left by form ties with non-shrink grout to within 1" of surface; fill with patching mortar.
- 6.1.4 Where existing concrete has been removed, patch uneven surfaces with patching mortar.

7. PAYMENT

- 7.1 No separate payment will be made for work covered under this part of the specifications. Include all costs in applicable unit prices for items to which work pertains.

PART 6 - REINFORCING STEEL

INDEX

- | | |
|----------------------|----------------|
| 1. WORK INCLUDED | 3. WIRE FABRIC |
| 2. REINFORCING STEEL | 4. PAYMENT |

1. WORK INCLUDED

- 1.1 Includes all reinforcing steel and wire fabric placed on project site except as specified hereinafter.
- 1.2 Reinforcing steel and wire fabric for concrete surfacing is covered in another part of these specifications.

2. REINFORCING STEEL

- 2.1 Billet steel bars: ASTM A615, Grade 60.
- 2.2 Bend cold to conform with required details; bend bars in fabricating shop before delivery to site.
- 2.3 Space properly and tie securely in position before placing concrete; tie with minimum No. 18 tie wires as directed by Engineer.
- 2.4 Lap bars 48 diameters, unless noted otherwise on plans.
- 2.5 Remove scale, rust, dirt or other coatings which may impair bond; comply with ACI 318.
- 2.6 Install reinforcing steel in correct position with preformed wire bar bolsters and spacers. Reinforcing stakes/stand shall be used to ensure reinforcing is not pushed to bottom of paving.
- 2.7 Place concrete only after reinforcing system is in place and approved by Engineer; install reinforcing system plumb and true; tie securely; reinforcing must remain in proper position without distortion or displacement of individual bars or system during pour.
- 2.8 Pavement tie bars and dowels: epoxy coated, IDOT approved.

3. WIRE FABRIC

- 3.1 Electrically welded wire fabric: ASTM A185 and A82.
- 3.2 Size and mesh: as shown on plans or specified.
- 3.3 Place securely where shown on plans.
- 3.4 Lap fabric not less than 6".
- 3.5 Remove scale, rust, dirt and other bond-impairing materials.

4. PAYMENT

- 4.1 No separate payment will be made for work covered under this part of the specifications. Include all costs in applicable unit prices for items to which work pertains.

PART 7 - EARTHWORK AND INCIDENTALS FOR PAVEMENT

INDEX

- | | |
|-------------------------|------------------------|
| 1. GENERAL | 4. SUBGRADE TREATMENTS |
| 2. EXCAVATION | 5. ABUTTING PAVEMENT |
| 3. SUBGRADE PREPARATION | 6. PAYMENT |

1. GENERAL

- 1.1 This part of the specifications includes earthwork and incidentals for replacement of granular surfacing, asphaltic cement concrete surfacing, and portland cement concrete pavement, driveway and sidewalk.
- 1.2 Reference to percent maximum density shall mean a soil density not less than the stated percent of maximum density of optimum moisture content for soils as determined by ASTM D698 Moisture-Density Relations of Soils using 5.5-lb. Rammer and 12-in. Drop. (Standard Proctor Method).
- 1.3 Do work in accordance with best present-day installation and construction practices.

2. EXCAVATION

- 2.1 Excavate to subgrade required for street construction.
- 2.2 Segregate topsoil to be reused. No extra payment will be made to import topsoil if contractor fails to segregate soil during excavation.
 - 2.2.1 Dispose of segregated surplus excavated material as specified in SPECIAL CONSTRUCTION.
 - 2.2.2 Provide 18" thick topsoil behind curbs.
- 2.3 Removal and disposal of existing surfacing is incidental to surface replacement.
- 2.4 Over excavate subgrade as required to remove topsoil and organic material; replace with select fill as specified hereinafter.
- 2.5 Provide temporary drainage facilities to prevent damage to public or private interests when necessary to interrupt natural drainage or flow of artificial drains.
- 2.6 Restore original drains as soon as work will permit.

- 2.7 Contractor liable for damage resulting from neglect to provide for interrupted natural or artificial drainage.
- 2.8 Do not damage pavement or disturb subgrade beneath existing pavement which will not be removed.

3. SUBGRADE PREPARATION

- 3.1 Provide uniform composition at least 12" below pavement for full width of pavement plus 2' beyond edge of pavement; roll and scarify materials, mix and recompact, or otherwise treat to produce a uniform condition.
- 3.2 Remove and dispose of stones over 4" in size from loosened portion of subgrade.
- 3.3 Construct subgrade with uniform density to width of proposed pavement plus 2' beyond edge of pavement; density: not less than 95% maximum Standard Proctor density: ASTM D698; moisture content between -1% and +3% of optimum.
- 3.4 In areas where roller cannot compact; provide approved selected material; 12" minimum thickness; compact to 95% maximum density specified hereinbefore with vibrator tamper.
- 3.5 Construct subgrade such that after rolling, surface will be at required grade and cross section.
- 3.6 Fill depressions that develop during rolling with suitable material; continue rolling until subgrade is uniformly firm, properly shaped and true to grade and cross section.
 - 3.6.1 Maintain until pavement is placed.
 - 3.6.2 Remove materials which will not compact readily under roller; replace with materials which will compact readily; again roll that portion of subgrade.
- 3.7 If ruts or other objectionable irregularities form in subgrade during construction, reshape and re-roll subgrade before placing pavement; fill ruts or other depressions with material similar to other subgrade material.

- 3.8 Draw steel shod template, IDOT 2301.07 A6, over subgrade prior to depositing concrete; check and trim subgrade to required grade and cross section.
 - 3.8.1 Use of template may be waived if subgrade has been shaped satisfactorily by suitable electronically controlled subgrade trimming machine.
 - 3.8.2 In irregular sections where use of template or subgrade trimming machine is impractical, check subgrade by most accurate practical method.

4. SUBGRADE TREATMENTS

- 4.1 Use only to correct subgrade condition where specified density cannot be obtained by other methods prior to placement of pavement; Engineer to determine type of treatment to be used or combination of types of treatment to be used in field.
- 4.2 Special backfill:
 - 4.2.1 Provide special backfill to width and thickness as directed by Engineer.
 - 4.2.2 Material: crushed stone conforming to IDOT Section 4132, Gradation No. 30 or 31.
 - 4.2.2.1 Use only well graded material with no visible signs of segregation.
 - 4.2.3 Place and compact to construct special backfill with uniform density; construct such that after rolling, surface will be at required grade and cross section; add water as required for compaction at no additional cost to Owner; maintain until pavement is placed.
- 4.3 Lime subgrade treatment for concrete pavement:
 - 4.3.1 Provide lime, 20 lbs. per square yard, in top 6" of subgrade.
 - 4.3.2 Mix until uniform consistency is obtained; add water as required for optimum moisture content and compact to specified density.
 - 4.3.3 Lime: use hydrated lime: ASTM C207, Type N.

- 4.4 Geogrid material: biaxial material of 98% minimum polypropylene and regular grid structure conforming to ASTM D4101 Group 1, Class 1, Grade 2 with 0.5% minimum carbon black per ASTM 4218; Tensar Geogrid BX1100.
 - 4.4.1 Aperture size suitable for mechanical interlock of base and geogrid; minimum of 70% open area; maximum openings: 1" (longitudinally along roll) and 1.3" (across roll).
 - 4.4.2 Tensile modulus of 14,000 lbs./ft.; flexural rigidity of 250,000 mg-cm.
 - 4.4.3 Nominal rib thickness of 0.03"; nominal junction thickness of 0.11" per ASTM D1777.
 - 4.4.4 Resistant to damage by all forms of biological and chemical degradation caused by subgrade or subbase environment.
 - 4.4.5 Avoid damage to subgrade; roll geogrid material over prepared subgrade; extend geogrid material minimum 1' beyond back of curb line; cut to conform to fixtures; pin overlaps to provide anchorage.
 - 4.4.6 Overlap geogrid material joints minimum 2' both transverse and longitudinal; overlap on 31' wide street pavement may be reduced to 1.5' to accommodate manufacturer's standard geogrid material widths in longitudinal lap joints only.
 - 4.4.7 Overlap geogrid material in direction granular base will be spread.
 - 4.4.8 Anchor geogrid material to subgrade as recommended by manufacturer.

5. ABUTTING PAVEMENTS

- 5.1 Drill into existing portland cement concrete slabs and curbs abutting new portland cement concrete pavement and curbs and install dowels as detailed in IDOT Standard Road joint details RD, RT and BT-1; cost is incidental to pavement construction.

6. PAYMENT

- 6.1 No separate payment will be made for work covered in this part of the specifications. Include all costs in applicable unit prices for items to which work pertains.

PART 8 - PORTLAND CEMENT CONCRETE PAVEMENT

INDEX

- | | |
|---|---|
| 1. GENERAL | 7. CONSTRUCTION |
| 2. MATERIALS | 8. CURING AND PROTECTION |
| 3. STORAGE AND PROTECTION OF MATERIALS | 9. RESTRICTIONS |
| 4. PROPORTIONS FOR MIX | 10. DEFECTS AND DEFICIENCIES |
| 5. MIXING | 11. DRIVEWAY APPROACH AND SIDEWALK CONSTRUCTION |
| 6. EQUIPMENT REQUIREMENTS FOR PAVEMENT CONSTRUCTION | 12. ABUTTING PAVEMENTS |
| | 13. PAYMENT |

1. GENERAL

- 1.1 This part of the specifications includes all portland cement concrete surfacing replacement including construction of portland cement concrete curb and gutter, portland cement concrete driveway and portland cement concrete sidewalk using preset forms or slipform on prepared subgrade or subbase.

- 1.1.1 Prepare subgrade as specified in EARTHWORK AND INCIDENTALS FOR PAVEMENT.

2. MATERIALS

- 2.1 Portland cement: ASTM C150, Type I.

2.2 Admixtures:

- 2.2.1 Air entraining: ASTM C260; no admixtures containing chlorides will be permitted.
- 2.2.2 Retarding: ASTM C494; a suitable retarding admixture may be used during hot weather, with approval of Engineer.
- 2.2.3 Calcium chloride not permitted.

2.3 Fine aggregate:

- 2.3.1 Clean, hard, durable particles of natural sand, free from injurious amounts of silt, shale, coal, organic matter or other deleterious substances.

Portland Cement Concrete Pavement

- 2.3.2 Deleterious substances: not more than 2.0% shale and coal by weight retained on No. 16 sieve.
- 2.3.3 Organic matter: other than coal, not more than standard reference color; ASTM C40.
- 2.3.4 Conform to following sieve analysis:

<u>Sieve Size</u>	<u>% Passing</u>
3/8"	100
No. 4	90-100
No. 8	70-100
No. 30	10-60
No. 200	0-1.5

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

2.4 Coarse aggregate:

- 2.4.1 Clean, hard, durable particles of crushed limestone free from injurious amounts of objectionable materials.

- 2.4.2 Objectionable materials not more than:

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

- 2.4.2.1 Chert particles breaking into three or more pieces in freezing and thawing test, IDOT Laboratory Test Method 211, Method A, are considered unsound.

2.4.3 Conform to following sieve analysis:

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

2.4.4 Percent of wear, AASHTO T96, Grading A or B, not to exceed 35 for gravel, 50 for crushed stone which contains 90% or more calcium carbonate or 45 for all other crushed stone.

2.4.5 Particle durability: IDOT Section 4115.04, Class 2 or Class 3.

2.5 Water: clean and clear, free from salt, oil, acid, strong alkalis, vegetable matter or other substances injurious to concrete.

2.5.1 Water may be heated for cold weather paving operations; cold weather concrete temperature shall not be less than 70°F.; anti-freezing agents not permitted.

2.6 Reinforcing steel:

2.6.1 Deformed bars: billet steel; ASTM A615, Grade 40; epoxy coated.

2.6.2 Plain and smooth dowel bars: carbon steel; ASTM A306, Grade 60; epoxy coated.

2.6.3 Welded wire fabric: ASTM A185.

2.7 Metal expansion tubes:

2.7.1 Fabricated steel tubes; conform to requirements of IDOT; provide tubes with internal diameter 1/16" larger than dowel bar; bar stop capable of withstanding 20 lb. push, minimum.

2.8 Supports for reinforcing steel:

- 2.8.1 Support tie bars as required to place and maintain correct location during construction.
- 2.8.2 Welded wire fabric supports: heavy gauge wire, welded or bent to form four-legged chair.
- 2.8.3 Support dowel bars at expansion and contraction joints.

2.9 Joints:

- 2.9.1 Bituminous joint filler and sealer: hot poured joint filler: ASTM D3405; use with backer rope; comply with IDOT 2301.25.
 - 2.9.2 Preformed expansion joint filler: asphalt saturated fiber strips; AASHTO M213; furnish in strips of plan dimensions; use IDOT preformed joint seal.
- 2.10 Liquid curing compound: IDOT 4105.05; do not use in areas to receive asphalt overlay; use plastic or burlap.
- 2.11 Plastic film: opaque, white pigmented polyethylene plastic, 0.00085" minimum thickness, use only once if less than 0.0034" thick.
- 2.12 Fly ash: permitted as substitute for portland cement when source and mix design is in conformance with IDOT Standard Specifications and Supplemental Specifications.

3. STORAGE AND PROTECTION OF MATERIALS

3.1 Aggregates:

- 3.1.1 Store fine and coarse aggregate in separate stockpile; avoid contamination of aggregates; place fine aggregate with more than 5.0% moisture in separate stockpile and allow to drain; wet fine aggregates in stockpiles must be allowed to drain for 1 day.
- 3.1.2 Stockpile coarse aggregate and unscreened gravel in horizontal layers; maximum depth: 4'.

- 3.1.3 Handle aggregates to avoid frequent variations in specific gravity, sieve analysis or moisture content; prevent variations of more than 0.5% in moisture content of aggregates in successive batches.
- 3.1.4 Coarse aggregate having absorption greater than 0.5%: wet 1 hour before use.
- 3.1.5 Place fine aggregate in proportioning bin only when uniform moisture content can be maintained in successive batches for one day's run.
- 3.2 Cement:
 - 3.2.1 Store cement in suitable weatherproof structure; prevent loss of cement during handling.
 - 3.2.2 Use cement containing lumps only after careful screening through 20 mesh screen; retest in accordance with ASTM C150 before use.

4. PROPORTIONS FOR MIX

- 4.1 Mix proportions for curb and gutter and sidewalks; use C-4 or M-4 mix. Mix proportions for pavement and drive approaches; use M-4 mix.
 - 4.1.1 Basic absolute volumes of materials per unit volume of concrete as per IDOT Section 2301.04:

	<u>C-4</u>	<u>M-4</u>
Cement Minimum	0.118	0.156
Water	0.159	0.160
Entrained Air	0.06	0.06
Fine Aggregate	0.331	0.312
Coarse Aggregate	0.332	0.312
 - 4.1.2 Above quantities based on specific gravity of cement: 3.14; specific gravity of aggregates: 2.65; air voids: 6.0%.
 - 4.1.3 Air entraining admixture: produce 6.5% +/- 1.5% air voids in fresh concrete measured by pressure method.

4.2 Proportion adjustments:

4.2.1 Basis: when actual quantity of concrete is more than 101% or less than 99% of calculated quantity or if combination of materials does not produce quality of concrete specified.

4.2.1.1 Fine aggregate shall not exceed 50% of total aggregate in any adjustment.

4.2.1.2 Do not exceed maximum water-cement ratio specified.

4.3 Water quantity and concrete consistency:

4.3.1 Use proper amount of mixing water to produce concrete of uniform consistency; adapt to mix, characteristics of materials used, methods of consolidation, weather conditions and slope of finished surface.

4.3.2 Modify proportion if maximum water-cement ratio does not produce workability; increase cement to aggregate proportion to produce specified degree of workability without exceeding maximum water-cement ratio.

4.4 Tests on trial batches and concrete placed at project site:

4.4.1 Slump: ASTM C143; 1-1/2" to 3" for machine finished concrete; 4", maximum, for hand finished concrete.

4.4.2 Air voids, of fresh concrete, by pressure method: ASTM C231; 6.5% +/- 1.5%.

4.4.3 Minimum compressive strength: ASTM C39; 3,500 psi when tested at 7 days and 4,000 psi when tested at 28 days.

4.4.4 Quantity of compression cylinders as specified in GENERAL REQUIREMENTS; cast, protect and cure cylinders in accordance with ASTM C31.

5. MIXING

5.1 Batch mix:

5.1.1 Handle batches and charge mixer to insure complete introduction of batches separately without loss of materials; add water with other materials.

5.1.2 Maximum batch volume:

<u>Mixer Size Designation</u>	<u>Volume of Batch CF of Mixed Concrete</u>
16E	17.6
27E	29.7
34E	37.4

5.1.2.1 For other size mixers, do not allow batch volume of mixed concrete to exceed mixer size designation number.

5.1.2.2 Size designations: as shown in Concrete Mixer Standards of Mixer Manufacturers Bureau of Associated General Contractors of America, Inc. in effect at time of manufacture of mixer.

5.1.3 If uniform concrete cannot be produced with maximum batch volume; reduce batch volume and/or increase mixing time.

5.2 Ready-Mix:

5.2.1 Applies to either central plant-mixed concrete or central plant-proportioned, truck-mixed concrete.

5.2.2 Time lapse from addition of water until placing on subgrade: not to exceed 30 min. when concrete is hauled in nonagitating trucks; 1-1/2 hours when hauled in truck mixers or agitating trucks; provide reliable reset-revolution counter on truck mixer.

5.2.3 Place concrete in plastic and workable condition; do not retemper partially hardened concrete.

6. EQUIPMENT REQUIREMENTS FOR PAVEMENT CONSTRUCTION

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

7. CONSTRUCTION

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

Portland Cement Concrete Pavement

- 7.1.2.2 Comply with IDOT 2301.9A if base of form is set below subgrade elevation; additional excavation and concrete at no cost to Owner.
- 7.1.3 Secure forms in place to maintain grade and alignment while concrete is placed and finished.
 - 7.1.3.1 If voids occur under forms, remove forms and bring special backfill to proper elevation as specified in EARTHWORK AND INCIDENTALS FOR PAVEMENT.
 - 7.1.3.2 Check form joints with 10' straight edge; adjust forms to proper grade and alignment.
- 7.1.4 If supporting soil becomes softened by rain or standing water so form is inadequately supported, reset form on suitable material before placing concrete.
- 7.1.5 Oil forms before concrete is placed; prevent adherence of concrete.
- 7.1.6 Leave side forms in place not less than 6 hours after concrete is placed; if form removal causes damage to concrete, leave remaining forms in place longer than 6 hours, as required.
- 7.1.7 Remove forms with care to prevent cracking, spalling or overstressing concrete; remove form stakes prior to raising forms.
- 7.1.8 Clean forms before resetting.
- 7.1.9 Forms not required where abutting existing pavement.
- 7.2 Concrete and steel placement:
 - 7.2.1 Uniformly moisten subgrade or place plastic film, specified hereinbefore, on prepared subgrade or subbase; lap plastic film 12", minimum.
 - 7.2.2 Adjust manhole and other castings within area to be paved to conform to finished surface; clean outside of casting.

Portland Cement Concrete Pavement

- 7.2.3 Place dowel and tie bars as shown on plans or specified; secure in position by approved method.
- 7.2.4 Place concrete to full depth of pavement in single operation; do not pile concrete more than 8" above design elevation of surface; allow no segregation of material when concrete is deposited on subgrade.
- 7.2.5 Carefully place concrete and subgrade to require minimum rehandling; minimize disturbance of reinforcement.
- 7.2.6 Vibrate and consolidate to prevent formation of voids; do not displace or distort reinforcement.
- 7.3 Finishing:
 - 7.3.1 Begin finishing operations promptly after concrete has been placed and consolidated.
 - 7.3.2 Screed surface to grade and crown shown on plans.
 - 7.3.3 Finish surface with 10' long lightweight float; finish from both sides simultaneously if pavement is placed to full width of street with one pass of paving machine.
 - 7.3.4 Provide uniformly gritty surface with AstroTurf drag; round edges of pavement to 1/8" radius.
 - 7.3.5 Check pavement surface with 10' long straightedge; maximum permissible deviation: 1/8"; grind high spots, over 1/8", with carborundum grinding wheel.
- 7.4 Construct joints per SUDAS and specified; seal as specified hereinafter.
 - 7.4.1 Transverse, longitudinal, and curb & gutter jointing shall match existing pavement.
 - 7.4.2 Round edges of concrete adjacent to header boards and expansion joint material to 1/8" radius.

- 7.4.3 Provide supplemental vibration adjacent to header boards and expansion joint material as required.
- 7.4.4 Begin saw cutting as soon as concrete can be sawed without objectionable tearing of sawed edges; complete such work within 24 hours after concrete is placed.
- 7.4.5 For weather conditions, end of day's work, or when 30 min. elapse between concrete placement, install header board and 3/4" smooth dowels 1'-3" long at 1'-6" spacing through header board; grease protruding ends prior to next concrete placement.
- 7.5 Seal all joints before pavement is opened to Contractor's forces and general traffic; seal only dry and clean joint surfaces; slightly under-fill joints, keep sealer off of adjacent pavement.
 - 7.5.1 Heat joint sealer to required temperature in thermostatically controlled heating kettle approved by Engineer; do not overheat.

8. CURING AND PROTECTION

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

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

Forecast or Actual

Temperature

35° to 32°F.

31° to 25°F.

Below 25°F.

Protection

One layer of burlap for concrete placed after October 1.

Two layers burlap or one layer plastic film on one layer burlap.

One layer burlap or plastic film and 6" layer of straw or hay.

- 8.3.1 Burlap: AASHTO M182, Class 3.
- 8.3.2 Commercial insulation may be substituted for straw or hay, when approved by Engineer.
- 8.3.3 Protect straw, hay or insulation from disturbance by wind; leave in place for 5 days, minimum, or until pavement is opened to traffic.
- 8.3.4 Lap plastic film 18" at junctions.
- 8.4 Concrete damaged by rain or freezing shall be removed and replaced at Contractor's expense.

9. RESTRICTIONS

9.1 Weather:

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

9.2 Night operation:

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

9.3 Use of pavement:

- 9.3.1 Time for opening pavement for use will be determined by results of tests on cylinders taken during concrete placement.
- 9.3.2 Contractor may elect to take a third set of cylinders at his own expense to be broken when Contractor desires; if tests show a compression strength of 4,000 psi or higher, Contractor may open pavement to general traffic.
- 9.3.3 Open pavement to general traffic when authorized by Engineer.
- 9.3.4 Concrete placed in cold weather may require additional curing time, as directed by Engineer; keep all vehicles off pavement until such curing time has been completed.

10. DEFECTS AND DEFICIENCIES

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

11. DRIVEWAY APPROACH AND SIDEWALK CONSTRUCTION

11.1 Conform to details shown on Standard Drawing and plans for driveway approaches and sidewalks; prepare subgrade as specified under EARTHWORK AND INCIDENTALS FOR PAVEMENT.

11.1.1 Does not include granular surfacing driveway approach.

11.2 Remove existing concrete as shown on Standard Drawings or plan; use saw or other devices to cut smooth, even lines perpendicular to existing pavement surface.

11.3 Concrete materials:

11.3.1 Portland cement, admixtures, fine aggregate and water; as specified for pavement.

11.3.2 Coarse aggregate: as specified for pavement, except conform to following sieve analysis:

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

11.4 Concrete mix: use IDOT Section 2301.04 C-4 mix as specified for street pavement.

11.5 Forms: use wood or steel forms adequately staked and braced for all exposed slab edges; secure forms in place to maintain grade and alignment while concrete is placed and finished.

11.5.1 Set base of form at subgrade elevation or below with top of form at pavement surface elevation at edge of slab; set forms on properly compacted materials.

11.5.2 Where driveway abuts new pavement slab, fill over-excavated area with pipe bedding stone as specified for sewers to bottom of driveway slab; cost is incidental to construction.

Portland Cement Concrete Pavement

- 11.5.3 Oil forms before concrete is placed.
- 11.5.4 Leave forms in place not less than 24 hours after concrete is placed.
- 11.5.5 Remove forms with care to prevent cracking, spalling or overstressing concrete.
- 11.6 Concrete placement: as specified for plain pavement; provide supplemental vibration or spading at edges, joints and other areas where honeycombing may occur.
- 11.7 Screed to uniform lines; finish surface with wood or cork float.
- 11.8 Construct expansion joints at each property line and at intervals not greater than 100'; seal joints after concrete has cured; use applicable materials specified for pavement expansion joints.
- 11.9 Cure and protect driveway approaches and sidewalks as specified for pavement.
- 11.10 Restrictions on construction and use of pavement apply to driveway approaches and sidewalks.
- 11.11 Provide and install raised dome detectable warning panels at all pedestrian curb ramps located at intersections. Installation per manufacturer's recommendations. Panel shall be manufactured by ADA Solutions, Inc. or an Engineer approved equivalent; Clay Red (Federal Color No. 22144).

12. ABUTTING PAVEMENTS

- 12.1 Drill into existing portland cement concrete slabs and curbs abutting new portland cement concrete pavement and curbs and install dowels as detailed in IDOT Standard Road joint details RD, RT and BT-1; cost is incidental to pavement construction.

13. PAYMENT

- 13.1 No separate payment will be made for work covered under this part of the specifications except as set forth below. All other items are incidental to construction. Surfacing damaged by Contractor beyond removal limits replaced by Contractor at no cost to Owner.

Portland Cement Concrete Pavement

- 13.2 Portland Cement Concrete Pavement, Remove & Replace, 4", SY: Unit price includes furnishing all labor, equipment and materials necessary to complete work required for removal of existing walks, construction of new portland cement concrete sidewalks including subgrade preparation, forming, placing, consolidating, testing, finishing, jointing, curing, and miscellaneous associated work including cleanup.
 - 13.2.1 Sidewalk thickness: minimum thickness is 4" except at pedestrian curb ramps where minimum thickness is 6" and thickened to 8" where sidewalk forms or abuts curb. Common squares shall be 6" min. Additional thickness is incidental to cost of 4" sidewalk.
 - 13.2.2 Welded wire fabric not required for sidewalks.
 - 13.2.3 Detectable warnings (raised domes) paid for in addition to payment for underlying walk beneath the domes.
- 13.3 Portland Cement Concrete Pavement, Remove & Replace, 8", SY: Unit price includes furnishing all labor, materials and equipment for jointing, dowels, forming, fixture adjustment, subgrade, testing, consolidating, finishing and curing of concrete and incidental work including cleanup. Includes street pavement. Measurement based on surface area of new pavement from back of curb to back of curb and including headers, curb and gutter, and buried lugs.
 - 13.3.1 Includes removal and disposal of existing PCC pavement.
 - 13.3.2 Minimum thickness:
 - 13.3.2.1 8" for street pavement.
- 13.4 Detectable Warning Panels, SF: Unit price includes furnishing panel, installation, placing, and miscellaneous associated work. Measurement Based on surface area of new panel in place.



Date: **January 26, 2026**

ENGINEER'S ESTIMATE OF PROBABLE CONSTRUCTION COST

Project Title		North 6th Place Water Main Improvements						
		Indianola Municipal Utilities						
		Indianola, Iowa						
BID ITEMS								
Bid Item No.	Specification Section / Description	Unit		Estimated Quantity		Unit Price		Extended Price
1.1	Mobilization	LS		100%		\$ 50,000.00		\$ 50,000.00
1.2	Traffic Control	LS		100%		\$ 15,000.00		\$ 15,000.00
1.3	Construction Staking	LS		100%		\$ 15,000.00		\$ 15,000.00
1.4	Water Main Directional Bored, PVC, 8"	LF		1700		\$ 135.00		\$ 229,500.00
1.5	Gate Valve, 8"	EA		1		\$ 5,000.00		\$ 5,000.00
1.6	Hydrant Assembly	EA		3		\$ 9,000.00		\$ 27,000.00
1.7	Water Service Connections	EA		29		\$ 2,500.00		\$ 72,500.00
1.8	Curb Stop and Box	EA		29		\$ 1,000.00		\$ 29,000.00
1.9	Water Service Pipe	LF		850		\$ 50.00		\$ 42,500.00
1.10	TEE, 4"x4" and Valve, 8"	EA		1		\$ 5,000.00		\$ 5,000.00
1.11	Pavement, PCC, Remove and Replace, 8"	SY		75		\$ 250.00		\$ 18,750.00
1.12	Pavement, PCC, Remove and Replace, 4"	SY		225		\$ 90.00		\$ 20,250.00
1.13	Detectable Warning Panels	SF		80		\$ 50.00		\$ 4,000.00
1.14	Salvage Existing Fire Hydrant	EA		1		\$ 500.00		\$ 500.00
1.15	Reinstall Existing Fire Hydrant	EA		1		\$ 3,500.00		\$ 3,500.00
1.16	Abandon Existing 4" Water Main	EA		5		\$ 3,500.00		\$ 17,500.00
1.17	Sod	SQ		50		\$ 200.00		\$ 10,000.00

TOTAL ESTIMATED CONSTRUCTION COST \$ 565,000.00

CONTINGENCY (APX. 10%) \$ 55,000.00

ESTIMATED CONSTRUCTION COST \$ 620,000.00

January 29, 2026

TO HOLDERS OF PLANS AND SPECIFICATIONS

NORTH 6th STREET PLACE WATER MAIN IMPROVEMENTS

PROPOSALS RECEIVED: Until 2:00 P.M.
 Tuesday, February 3, 2026

Enclosed is one copy of Addendum No. 1 to the plans and specifications for the North 6th Street Place Water Main Improvements project. Please acknowledge receipt of Addendum No. 1 and return via email to mcoon@kleinfelder.com or pjass@kleinfelder.com.

VEENSTRA & KIMM, INC.



Jordan D. Kappos

JDK:mmc
285116
Enclosure

Acknowledged this _____ day of _____, 2026

Company

By _____

**ADDENDUM NO. 1
TO
PLANS AND SPECIFICATIONS
FOR
NORTH 6th STREET PLACE WATER MAIN IMPROVEMENTS
INDIANOLA, IOWA**

SPECIFICATIONS

Delete "CERTIFY" in its entirety and insert "CERTIFY REV. 1" included herewith.

Delete "BID BOND" in its entirety and insert "BID BOND REV. 1" included herewith.

Delete "CONTRACT" in its entirety and insert "CONTRACT REV. 1" included herewith.

Delete "BOND" in its entirety and insert "BOND REV. 1" included herewith.

Delete "PLAN LIST" in its entirety and insert "PLANS LIST REV. 1" included herewith.

PART 4 – WATER MAINS AND APPURTENANCES

On page 4-3 of Water Mains and Appurtenances, under paragraph 3. Pipe Materials, delete subparagraph 3.4.2 and replace with the following:

"3.4.2 Provide EBBA, Inc., Megalug, Star, Sigma, or equal, retainer glands for all fittings and valves."

On page 4-11 of Water Mains and Appurtenances, under paragraph 5. Water Service Connections, delete subparagraph 5.2.1 and replace with the following:

"5.2.1 Curb stops: shall be made of brass conforming to AWWA C800, 200 psi working pressure, O-ring seals, 1/4 turn open for flared copper or polyethylene. Ford Ball Valve B11 style, A.Y. McDonald, Cambridge Brass, or equal, for PVC service lines."

On page 4-24 of Water Mains and Appurtenances, under paragraph 12. Payment, delete subparagraph 12.12 and replace with the following:

“12.12 TEE, 4”x4” and Valve, 8”, Ea.: Unit price includes furnishing and installing TEE fittings, reducers, and valves on water main, fittings and appurtenances as required, drilling, cutting, jointing, blocking and miscellaneous associated work; includes furnishing and installing valve boxes and cover.”

PLANS

Dwg No. A.2 delete Note 7 and replace with the following note:

“LOCATIONS OF CONSTRUCTION LIMIT LINES SHOWN ON PLANS ARE APPROXIMATE.”

Dwg No. G.1 add the following to CONTROL POINTS table:

Point #	Northing	Easting	Elevation	Description
103	497843.3	1626929	952.18	cp x cut sidewall NE of franklin & n 8th st

Dwg No. MWM.1 delete Note 7 and replace with the following note:

“protect pedestrian curb ramps where possible. If pedestrian curb ramp is removed and replaced, curb ramp on opposite side of the street must also be replaced, unless already ADA compliant. Replacement of sidewalk ramps shall be ADA complaint. See specifications.”

Dwg No. MWM.2 delete Note 7 and replace with the following note:

“protect pedestrian curb ramps where possible. If pedestrian curb ramp is removed and replaced, curb ramp on opposite side of the street must also be replaced, unless already ADA compliant. Replacement of sidewalk ramps shall be ADA complaint. See specifications.”

Dwg No. MWM.3 delete Note 7 and replace with the following note:

“protect pedestrian curb ramps where possible. If pedestrian curb ramp is removed and replaced, curb ramp on opposite side of the street must also be replaced, unless already ADA compliant. Replacement of sidewalk ramps shall be ADA complaint. See specifications.”

Dwg No. MWM.3 add the following Note 8:

"Contractor to field locate existing water service and install new water service connection for 904 E. Girard Avenue."

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.



Signed:

Date:

A handwritten signature in blue ink, appearing to read "Jordan D. Kappos", written over a horizontal line.

1/29/2026

Jordan D. Kappos

Iowa License No. 21146

My license renewal date is December 31, 2027

Detailed parts covered by this seal:

All

SPECIFICATIONS
FOR
NORTH 6TH STREET PLACE WATER MAIN IMPROVEMENTS
INDIANOLA MUNICIPAL UTILITIES
INDIANOLA, IOWA

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signed:

Date:



1/23/2026

Jordan D. Kappos

Iowa License No. 21146

My license renewal date is December 31, 2027



Detailed parts covered by this seal:

All

Prepared by
VEENSTRA & KIMM, INC.
West Des Moines, Iowa
REV. 1

BID BOND

KNOW ALL MEN BY THESE PRESENTS: That we, _____

_____, of, _____,

as Principal, and _____

of _____,
as Surety, are held and firmly bound unto the Indianola Municipal Utilities, Indianola, Iowa,
hereinafter defined as Obligee, in the penal sum of five percent (5%) of the total amount of the
bid (\$_____), for which payment said Principal and Surety bind
themselves, their heirs, executors, administrators, successors, and assigns jointly and severally,
firmly by these presents.

The condition of the above obligation is such that whereas the Principal has submitted to the
Indianola Municipal Utilities, Indianola, Iowa, a certain bid, in a sealed envelope, and hereby
made a part hereof to enter into a contract in writing, for: North 6th Street Place Water Main
Improvements.

NOW THEREFORE, if the said bid by said Principal be accepted, and the Principal shall enter into
a contract with the Obligee in accordance with the terms of such bid, and give such bond as
may be specified in the contract documents with good and sufficient surety for the faithful
performance of such contract, for the prompt payment of labor and material furnished in the
prosecution thereof, and for the maintenance of said improvements as may be required
therein, then this obligation shall become null and void or in the event of the failure of the
Principal to enter such contract and give such bond, the Principal shall pay to the Obligee the
full amount of the bid bond, together with court costs, attorney's fees, and any other expense
of recovery.

Signed and sealed this _____ day of _____, 2026.

Principal

By _____
Contractor's Signature

Surety

By _____
Attorney-in-Fact

CONTRACT

THIS AGREEMENT, made and entered into this _____ day of _____, 2026, by and between the Indianola Municipal Utilities, Indianola, Iowa, party of the first part, hereinafter referred to as the "Owner", and _____, party of the second part, hereinafter referred to as the "Contractor".

WITNESSETH: THAT WHEREAS, the Owner has heretofore caused to be prepared certain plans, specifications and proposal blanks, dated the 23rd day of January, 2026, for the North 6th Street Place Water Main Improvements under the terms and conditions therein fully stated and set forth, and,

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

NOW, THEREFORE, IT IS AGREED:

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

NORTH 6TH STREET PLACE WATER MAIN IMPROVEMENTS

Construct North 6th Street Place Water Main Improvements including all labor, materials and equipment necessary for approximately 1,700 linear feet of 8-inch directionally bored water main, water services, hydrants, valves, surface restoration and miscellaneous associated work, including cleanup for the sum of _____ based on the unit and lump sum prices as shown on the Proposal.

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

2.1 Contract Documents, including:

- 2.1.1 Notice to Bidders
- 2.1.2 Instructions to Bidders
- 2.1.3 Proposal
- 2.1.4 Contract
- 2.1.5 Bond
- 2.1.6 General Conditions
- 2.1.7 Special Conditions
- 2.1.8 Plans List
- 2.1.9 Plans listed in the Specifications

2.2 This Instrument.

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

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

4. That this contract is executed in triplicate.

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

CONTRACTOR:

INDIANOLA MUNICIPAL UTILITIES
INDIANOLA, IOWA

By _____
Chairperson, Board of Trustees

By _____

Title _____

ATTEST:

ATTEST:

Secretary

Title _____

BOND

KNOW ALL MEN: That we, _____,
of _____, hereinafter called the Principal, and
_____,
hereinafter called the Surety, are held and firmly bound unto the Indianola Municipal Utilities,
Indianola, Iowa, hereinafter called the Owner, in the sum of

Dollars (\$ _____), for the payment whereof the Principal and the Surety bind
themselves, their heirs, executors, administrators, successors and assigns, jointly and severally,
firmly, by these presents.

WHEREAS, the Principal has, by means of a written Agreement dated _____,
2026, entered into a Contract with the Owner for the North 6th Street Place Water Main
Improvements, which Agreement includes a guarantee of all work against defective
workmanship and materials for a period of four (4) years from the date of final acceptance of
the work by the Owner, a copy of which Agreement is by reference made a part hereof;

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

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

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

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

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

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

The Surety on this Bond shall be deemed and held, any contract to the contrary not
withstanding, to consent without notice:

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

The Bond is executed in triplicate.

Signed and Sealed this _____ day of _____, 2026.

PRINCIPAL:

Contractor

Signature

Title

SURETY:

Surety Company

Signature, Attorney-in-Fact

Name of Attorney-in-Fact

Company Name

Company Address (Including Zip Code)

Company Telephone Number

PLANS LIST

NORTH 6TH STREET PLACE WATER MAIN IMPROVEMENTS
INDIANOLA MUNICIPAL UTILITIES
INDIANOLA, IOWA

1. PLANS

- 1.1 The work shall conform to the following drawings, which constitute the "Plans" and are an integral part of the Contract Documents:

<u>No.</u>	<u>Title</u>	<u>Revision Number</u>
A.1	INDEX AND TITLE SHEET	
A.2	GENERAL NOTES AND LEGEND	
G.1	CONTROL SHEET	
MWM.1	WATER MAIN PLAN	
MWM.2	WATER MAIN PLAN	
MWM.3	WATER MAIN PLAN	
<u>IDOT STANDARD DRAWINGS</u>		
SW-104	PRESSURE PIPE TRENCH BEDDING	4
WM-101	THRUST BLOCKS, SHEETS 1-2	1
WM-102	TRACER SYSTEM	1
WM-201	FIRE HYDRANT ASSEMBLY	4
<u>IDOT STANDARD ROAD PLANS</u>		
TC-211	LANE CLOSURE ON LOW VOLUME ROADWAY	3
TC-212	SPOT LOCATION LANE CLOSURE WITH FLAGGERS	7
TC-252	ROUTES CLOSED TO TRAFFIC	6
<u>SUDAS STANDARD SPECIFICATIONS, SECTION 7030 FIGURES</u>		
7030.204	GENERAL FEATURES OF AN ACCESSIBLE SIDEWALK	3
7030.205	GENERAL SIDEWALK AND CURB RAMP DETAILS	1
7030.210	DETECTABLE WARNING PLACEMENT	0

PL-1
REV. 1
285116

MEMORANDUM

To: IMU Board of Trustees of the Electric, Water and Communications Utilities

From:

Date: February 23, 2026

Subject: Resolution approving the plans, specifications, form of contract and estimate of cost for the N. 6th Street Place Water Main Improvements Project

Recommendation: Agenda document is the resolution approving the plans, specifications, form of contract and estimate of cost for N. 6th Street Place Water Main Improvements Project. Board action is to approve this resolution by roll call vote.

Attachments: 1. Res 2026 Approving the Plans, Specifications, Form of Contract and Estimate of Cost for the N. 6th Street Place Water Main Improvements Project

Indianola Municipal Utilities

RESOLUTION APPROVING THE FINAL PLANS, SPECIFICATIONS, FORM OF CONTRACT, AND ESTIMATED COST FOR THE N. 6TH STREET PLACE WATER MAIN IMPROVEMENTS PROJECT

WHEREAS, the Indianola Municipal Utilities Board Of Trustees has authorized the preparation of the proposed plans, specifications, contract documents, and an estimate of cost for the N. 6th Street Place Water Main Improvements Project; and

WHEREAS, the Indianola Municipal Utilities Board of Trustees has deemed it necessary and desirable to undertake the construction of the Project; and

WHEREAS, IMU has provided notice for a public hearing and notice to bidders regarding the proposed plans, specifications, and form of contract for the Project, and the acceptance of bids; and

WHEREAS, a public hearing has been held regarding objections to the proposed plans, specifications, form of contract, and the cost of the Project, and no objections were raised.

NOW, THEREFORE, BE IT RESOLVED by the Indianola Municipal Utilities Board Of Trustees that the plans, specifications, and form of contract, and estimate of cost referred to in the preamble hereof be and the same are hereby approved, and the aforementioned public improvement to be constructed in accordance with the plans, specifications and form of contract is necessary and desirable.

PASSED AND APPROVED this 23rd day of February 2026.

Dom Selgrade, Chairperson

ATTEST:

Monica Thompson, Board Secretary

MEMORANDUM

To: IMU Board of Trustees of the Electric, Water and Communications Utilities

From:

Date: February 23, 2026

Subject: Resolution awarding and approving a contract to Busy Bee Construction, LLC for the N. 6th Street Place Water Main Improvements Project

Recommendation: Agenda document is the resolution awarding a contract to Busy Bee Construction, LLC for N. 6th Street Place Water Main Improvements Project.
Board action is to approve this resolution by roll call vote.

Attachments:

1. Res 2026 Awarding and Approving Contract for N. 6th Street Place Water Main Improvements Project
2. 285116 Bid Tab
3. 285116_Recommendation to Award

Indianola Municipal Utilities
RESOLUTION NO 2026

**RESOLUTION AWARDING AND APPROVING CONTRACT FOR N. 6TH STREET PLACE WATER MAIN
IMPROVEMENTS PROJECT**

BE IT RESOLVED BY THE BOARD OF TRUSTEES OF THE INDIANOLA MUNICIPAL UTILITIES:

Section 1. The bid from Busy Bee Construction, LLC in the amount of \$337,747.02 for the N. 6th Street Place Water Main Improvements Project for Indianola Municipal Utilities, Indianola, Iowa, described in the plans and specifications previously adopted by this Board on the 12th day of January 2026, is accepted, it being the lowest and most responsible bids for the project.

Section 2. The IMU General Manager is hereby authorized to execute a contract with the contractor for the construction of the public improvement, the contract not to be binding on the Board of Trustees until approved by the Board.

PASSED AND APPROVED this 23rd day of February, 2026.

Dom Selgrade, Chairperson

ATTEST:

Monica Thompson, Board Secretary

BID TABULATION
INDIANOLA MUNICIPAL UTILITIES
INDIANOLA, IOWA
NORTH 6TH STREET PLACE WATER MAIN IMPROVEMENTS PROJECT

1. Construct North 6th Street Place Water Main Improvements Project for the following unit and lump sum prices:				Busy Bee Construction, LLC 15691 State Hwy 6 Lewistown, MO 63452		MPS Engineers, PC dba Kingston Services, PC 1444 Illinois Street Des Moines, IA 50314		On Track Construction, LLC 1435 West F Avenue Nevada, IA 50201		Vanderpool Construction, Inc. 1100 N. 14th Street Indianola, IA 50125	
BASE BID:											
ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	EXTENDED PRICE	UNIT PRICE	EXTENDED PRICE	UNIT PRICE	EXTENDED PRICE	UNIT PRICE	EXTENDED PRICE
1.1	Mobilization	LS	XXXXX	\$ 10,000.00	\$ 10,000.00	\$ 60,000.00	\$ 60,000.00	\$ 75,000.00	\$ 75,000.00	\$ 40,500.00	\$ 40,500.00
1.2	Traffic Control	LS	XXXXX	6,000.00	6,000.00	4,000.00	4,000.00	5,000.00	5,000.00	2,500.00	2,500.00
1.3	Construction Staking	LS	XXXXX	4,000.00	4,000.00	5,250.00	5,250.00	6,550.00	6,550.00	5,500.00	5,500.00
1.4	Water Main Directional Bored, PVC, 8"	LF	1,700	72.02	122,434.00	89.00	151,300.00	125.00	212,500.00	180.00	306,000.00
1.5	Gate Valve, 8"	EA	1	2,957.32	2,957.32	3,500.00	3,500.00	4,400.00	4,400.00	2,800.00	2,800.00
1.6	Hydrant Assembly	EA	3	10,256.44	30,769.32	8,700.00	26,100.00	9,000.00	27,000.00	9,400.00	28,200.00
1.7	Water Service Connections	EA	29	720.40	20,891.60	2,900.00	84,100.00	850.00	24,650.00	2,300.00	66,700.00
1.8	Curb Stop and Box	EA	29	910.81	26,413.49	450.00	13,050.00	920.00	26,680.00	1,400.00	40,600.00
1.9	Water Service Pipe	LF	850	22.00	18,700.00	18.00	15,300.00	64.00	54,400.00	33.00	28,050.00
1.10	TEE, 4"x4" & Valve, 8"	EA	1	6,856.29	6,856.29	6,825.00	6,825.00	5,775.00	5,775.00	6,200.00	6,200.00
1.11	Pavement, PCC, Remove & Replace, 8"	SY	75	175.00	13,125.00	100.00	7,500.00	160.00	12,000.00	255.00	19,125.00
1.12	Pavement, PCC, Remove & Replace, 4"	SY	225	160.00	36,000.00	65.00	14,625.00	90.00	20,250.00	110.00	24,750.00
1.13	Detectable Warning Panels	SF	80	75.00	6,000.00	60.00	4,800.00	53.00	4,240.00	60.00	4,800.00
1.14	Salvage Existing Fire Hydrant	EA	1	1,500.00	1,500.00	1,650.00	1,650.00	2,750.00	2,750.00	1,500.00	1,500.00
1.15	Reinstall Existing Fire Hydrant	EA	1	2,000.00	2,000.00	5,600.00	5,600.00	3,500.00	3,500.00	3,100.00	3,100.00
1.16	Abandon Existing 4" Water Main	EA	5	4,100.00	20,500.00	3,270.00	16,350.00	2,400.00	12,000.00	1,300.00	6,500.00
1.17	Sod	SQ	50	192.00	9,600.00	95.00	4,750.00	180.00	9,000.00	160.00	8,000.00
TOTAL BASE BID (Items 1.1 - 1.17)				\$337,747.02		\$424,700.00		\$505,695.00		\$594,825.00	

I hereby certify that this is a true tabulation of
bids received on February 3, 2026 by Veenstra & Kimm, Inc.
on behalf of the City of the Indianola Municipal Utilities


Vincent J. Driscoll

February 4, 2026

Monica Thompson
Board of Trustees Secretary
Indianola Municipal Utilities
210 W 2nd Avenue
Indianola, Iowa 50125

INDIANOLA MUNICIPAL UTILITIES
NORTH 6TH STREET PLACE WATER MAIN IMPROVEMENTS
RECOMMENDATION TO AWARD

The Indianola Municipal Utilities received bids until 2:00 P.M., Tuesday, February 3, 2026, for the North 6th Street Place Water Main Improvements project. A total of four bids were received as follows:

<u>Contractor</u>	<u>Total Bid</u>
Busy Bee Construction, LLC	\$337,747.02
MPS Engineers, PC dba Kingston Services, PC	\$424,700.00
On Track Construction, LLC	\$505,695.00
Vanderpool Construction, Inc.	\$594,825.00

The apparent low bid was submitted by Busy Bee Construction, Inc. from Lewistown, Missouri in the amount of \$337,747.02

The engineer's estimate of cost for construction of the project was \$634,250.00.

We recommend the Indianola Municipal Utilities award the contract to Busy Bee Construction, Inc. in the amount of \$337,747.02.

Enclosed is a copy of our tabulation of bids.

Monica Thompson
February 4, 2026
Page 2

If you have any questions or comments concerning the project, please contact us at 515-225-8000.

VEENSTRA & KIMM, INC.



Vincent Driscoll

VJD:
285116
Enclosures

MEMORANDUM

To: IMU Board of Trustees of the Electric, Water and Communications Utilities
From:
Date: February 23, 2026
Subject: Resolution Approving IPTV 28E Draft Amendment - Agreement Termination

Recommendation:

Attachments:

1. Resolution Approving IPTV 28E Draft Amendment - Agreement Termination
2. Amendment No 1 to 28E Agreement re Termination.FINAL

Indianola Municipal Utilities
RESOLUTION NO 2026-

RESOLUTION APPROVING IPTV 28E DRAFT AMENDMENT - AGREEMENT TERMINATION

WHEREAS, IMU Board of Trustees agrees that it is in the best interests of IMU to approve **IPTV 28E Draft Amendment - Agreement Termination**. This Agreement was effective on October 11, 2023, and shall continue in effect until October 11, 2026, at which time the Agreement shall terminate in its entirety.

NOW, THEREFORE, BE IT RESOLVED by the Board of Trustees of the Indianola Municipal Utilities, Iowa, that the Waverly Communications Utility, The Municipal Communications Utility of the City of Cedar Falls, The Communications Utility of Bellevue Iowa, City of Pella Municipal Telecommunications Utility, New Hampton Municipal Communications Utility, Waterloo Telecommunications Utility, Vinton Municipal Communications Utility and Indianola Municipal Utilities agree to amend the Agreement to terminate effective October 11, 2026, and the Board Chair and general manager are hereby authorized and directed to execute the Notice of Termination on behalf of Indianola Municipal Utilities.

Approved this 23rd day of February 2026.

Dom Selgrade, Board Chair

ATTEST:

Monica Thompson,
Board Secretary

AMENDMENT NO. 1 TO

AMENDED AND RESTATED AGREEMENT UNDER IOWA CODE CHAPTER 28E BETWEEN WAVERLY COMMUNICATIONS UTILITY, THE MUNICIPAL COMMUNICATIONS UTILITY OF THE CITY OF CEDAR FALLS, THE COMMUNICATIONS UTILITY OF BELLEVUE, IOWA, INDIANOLA MUNICIPAL UTILITIES, VINTON MUNICIPAL COMMUNICATIONS UTILITY, CITY OF PELLA MUNICIPAL TELECOMMUNICATIONS UTILITY, NEW HAMPTON MUNICIPAL COMMUNICATIONS UTILITY, AND WATERLOO TELECOMMUNICATIONS UTILITY PROVIDING FOR JOINT OWNERSHIP AND USE OF CERTAIN FACILITIES AND RELATED MATTERS

STATEMENT OF PURPOSE

On or about October 11, 2023, and pursuant to Iowa Code Chapter 28E, Waverly Communications Utility ("Waverly"), The Municipal Communications Utility of the City of Cedar Falls, Iowa ("CFU"), the Communications Utility of Bellevue, Iowa ("CUB"), Indianola Municipal Utilities ("IMU"), Vinton Municipal Communications Utility ("Vinton"), City of Pella Municipal Telecommunications Utility ("Pella"), New Hampton Municipal Communications Utility ("New Hampton"), and Waterloo Telecommunications Utility ("Waterloo"), all municipal utilities in good standing, organized, operating and existing under Iowa Code Chapter 388, entered into a 28E Agreement.

The Parties agree to amend the Agreement to terminate effective October 11, 2026.

AGREEMENT

In consideration of mutual promises, covenants and considerations contained herein, and pursuant to Iowa Code Chapter 28E, the Parties agree as follows:

1. Amendment. The Agreement is hereby amended as follows:
 - (a) Paragraph 14 - Term of Agreement and Termination Provisions is hereby deleted and the following language is substituted in lieu thereof: This Agreement was effective on October 11, 2023, and shall continue in effect until October 11, 2026, at which time the Agreement shall terminate in its entirety.
 - (b) 14A. of the Agreement is hereby deleted in its entirety.
 - (c) 14B. of the Agreement is hereby deleted in its entirety.

2. Miscellaneous:

- (a) This Amendment No. 1 is binding and inures to the benefit of the Parties and their respective successors and assigns.
- (b) All other terms and conditions of the Agreement not modified by this Amendment remain in full force and effect.
- (c) As the governing bodies of the Parties will adopt resolutions approving Amendment No.1 to the 28E Agreement.
- (d) This Amendment may be executed in two or more counterparts, each of which shall be deemed to be original, but all of which shall constitute one and the same instrument.

MUNICIPAL COMMUNICATIONS UTILITY OF THE CITY OF CEDAR FALLS, IOWA

MaraBeth Soneson, Board Chair

ATTEST:

Deb Iehl, Board Secretary

Date

WAVERLY COMMUNICATIONS UTILITY

Robert Buckingham, Board Chair

ATTEST:

Angela Schroeder, Board Secretary

Date

COMMUNICATIONS UTILITY OF BELLEVUE, IOWA

Teresa Weinschenk, City Administrator

ATTEST:

William Reistroffer, Mayor

Date

INDIANOLA MUNICIPAL UTILITIES

Dom Selgrade, Board Chair

ATTEST:

Monica Thompson, Board Secretary

Date

VINTON MUNICIPAL COMMUNICATIONS UTILITY

Gerald Horst, Board Chair

ATTEST:

Melissa Schwan, Board Secretary

Date

CITY OF PELLA TELECOMMUNICATIONS UTILITY

Donald DeWaard, Mayor

ATTEST:

Mandy Smith, City Clerk

Date

NEW HAMPTON MUNICIPAL COMMUNICATIONS UTILITY

Grant Anderson, Board Chair

ATTEST:

Karen Clemens, Secretary to the Board

Date

WATERLOO TELECOMMUNICATIONS UTILITY

Andrew Van Fleet, Board Chair

ATTEST:

Kelley Felchle, Secretary to the Board

Date

MEMORANDUM

To: IMU Board of Trustees of the Electric, Water and Communications Utilities
From:
Date: February 23, 2026
Subject: FY26-27 Budget Presentation and Discussion

Recommendation:

Attachments: 1. FY26-27 Budget Document

Indianola Municipal Utilities – Proposed FY 2026-2027 Budget

This document presents the proposed budget for Indianola Municipal Utilities for the fiscal year 2026–2027. The budget reflects careful financial planning to ensure the continued delivery of reliable utility services, necessary infrastructure improvements, and prudent management of debt obligations.

The table below summarizes the estimated fund balances as of June 30, 2026, along with budgeted revenues, operating expenditures, capital expenditures, and debt service payments for each utility fund.

FISCAL 2026-2027 BUDGET ESTIMATED FUND BALANCES					
	Total IMU	Electric Utility	Water Utility	Communications Utility	IMU Administration
June 30, 2026 Ending Balance	\$24,463,463	\$19,334,254	\$3,790,442	\$597,506	\$741,262
Budgeted Revenue	30,900,895	20,438,300	4,079,245	6,148,950	234,400
Budgeted Operating Expenditures	(24,721,467)	(17,497,352)	(2,091,776)	(3,661,738)	(1,470,600)
Allocated Admin Expenditures	-	(568,333)	(365,636)	(302,231)	1,236,200
Budgeted Capital Expenditures	(6,068,900)	(2,900,300)	(2,282,400)	(886,200)	-
Debt Service	(1,803,455)	(676,800)	-	(1,126,655)	-
Net Change in Fund Balance	(\$1,692,927)	(\$1,204,486)	(\$660,567)	\$172,125	-
July 31, 2027 Ending Balance	\$22,770,537	\$18,129,768	\$3,129,876	\$769,631	\$741,262

Overall Highlights:

- Total budgeted revenues across all utility funds are approximately \$30.9 million, supporting essential services and capital projects. Operating expenses are projected at \$24.7 million. This supports ongoing service delivery and maintenance.
- Capital expenditures total nearly \$6.1 million. Ongoing projects include water main replacements, underground electric conversions, and fiber investments, including customer premise equipment and service delivery to new customers. New initiatives focus on the first-year phase of AMI meter conversion, while continuing improvements address utility plant, fleet vehicles, and operational assets
- Debt service payments of \$1.8 million maintain financial obligations and creditworthiness.
- The combined estimated fund balance on June 30, 2027, is projected to be \$22.8 million.
- The \$1.7 million reduction in fund balance demonstrates the utility's commitment to strategic capital improvements, as detailed in the 5-year capital plan reviewed by the Trustees on December 8, 2025. This careful investment maintains a healthy ending fund balance, ensuring the utility remains financially strong and able to continue providing reliable services.

ELECTRIC UTILITY FUND SUMMARY

	FY2025-26 Re-Estimated	FY2026-27 Proposed Budget
Beginning Fund Balance (estimated)	\$ 19,722,797	\$ 19,334,254
Revenues		
Electric Service Fees-Sales	\$ 17,225,886	\$ 17,225,900
Peaking Capacity	639,000	624,200
MISO Credits	568,200	613,500
Other Electric Revenue	476,700	454,600
Plant Lease - Fiber	300,000	300,000
Sales Tax (in)	362,100	362,100
Interest	858,000	858,000
Total Revenues	\$ 20,429,886	\$ 20,438,300
Operating Expenditures		
Salaries	\$ 1,428,600	\$ 1,523,100
Benefits & Employee Costs	547,100	580,600
Purchased Energy	11,078,925	11,239,093
Transmission	1,330,981	1,370,911
Purchased Solar	250,000	500,000
Plant Operations	71,000	71,000
Turbine Expenses	428,000	228,000
Distribution Expenses	337,200	335,000
Other Expenses	98,000	100,000
Insurance	180,500	184,700
Admin & Allocated Expenses	1,576,223	1,568,182
Sales & Use Tax (out)	365,100	365,100
Total Operating Expenditures	\$ 17,691,629	\$ 18,065,686
Capital Expenditures		
Line Construction	\$ 1,044,000	\$ 1,098,000
Electric Meters	50,000	568,600
Vehicles	242,000	505,000
Specialized Equipment	715,000	270,000
Transmission Facilities	193,000	202,700
Other Capital	204,000	256,000
Total Capital Expenditures	\$ 2,448,000	\$ 2,900,300
Debt Service	\$ 678,800	\$ 676,800
Addition/(Reduction) in Fund Balance	\$ (388,543)	\$ (1,204,486)
Ending Fund Balance (estimated)	\$ 19,334,254	\$ 18,129,768

Electric Utility Highlights:

- Electric Usage: No change compared to prior year budget.
- Electric Rates: No increase in rates.
- Salaries: Cost of living adjustment budgeted at 3% increase.
- Benefits & Employee Costs:
 - Includes expenses for training, continuing education, memberships, dues, and uniforms.
 - Employer portion of medical premiums budgeted to increase 10%.
- Purchased Energy: Budget includes 3% increase.
- Purchased Solar: Assumes a full year of operations, whereas FY2025-26 re-estimate is based on half-year operations.
- Capital Budget includes:
 - \$1.1 million for electric underground conversion projects.
 - The first phase of the three-year AMI meter conversion budgeted at \$560,000.
 - Vehicle replacements, including a bucket truck, a dump truck, and other fleet vehicles budgeted at \$500,000.
- Debt Service: Principal and interest payments totaling \$676,800.

WATER UTILITY FUND SUMMARY

	FY2025-26 Re-Estimated	FY2026-27 Proposed Budget
Beginning Fund Balance (estimated)	\$ 4,762,604	\$ 3,790,442
Revenues		
Water Sales	\$ 3,338,500	\$ 3,497,200
Other Water Revenue	193,245	188,445
Sales/Excise Tax (in)	202,000	211,500
Interest Income	182,100	182,100
Total Revenues	\$ 3,915,845	\$ 4,079,245
Operating Expenditures		
Salaries	\$ 719,600	\$ 752,700
Benefits & Employee Costs	271,400	282,200
Treatment Chemicals	170,000	170,000
Electricity	229,200	240,600
Plant Operations	21,500	22,500
Plant Maintenance	59,000	48,000
Distribution Expenses	99,200	99,400
Other Operating Expenses	22,800	22,800
Insurance	61,000	62,700
Admin & Allocated Expenses	541,107	545,012
Sales/Excise Tax (out)	202,000	211,500
Total Operating Expenditures	\$ 2,396,807	\$ 2,457,412
Capital Expenditures		
Vehicles	\$ 70,000	\$ 200,000
Water Towers	1,150,000	375,000
Water Mains	1,070,000	1,025,000
Water Meters	150,000	630,600
Other Capital	51,200	51,800
Total Capital Expenditures	\$ 2,491,200	\$ 2,282,400
Addition/(Reduction) in Fund Balance	\$ (972,162)	\$ (660,567)
Ending Fund Balance (estimated)	\$ 3,790,442	\$ 3,129,876

Water Utility Highlights:

- Water Consumption: Based on actual usage, which is trending lower.
- Water Rates:
 - Base rate is increasing \$1.00 to \$13.25 per month, which covers the first 1,000 gallons.
 - Consumption rate is increasing to \$8.78 per 1,000 gallons for all customer classes.
 - Additional base rate increase applies to customers with meters larger than 1 inch.
- Salaries: Cost of living adjustment budgeted at 3% increase.
- Benefits & Employee Costs:
 - Includes expenses for training, continuing education, memberships, dues, and uniforms.
 - Employer portion of medical premiums budgeted to increase 10%.
- Water Treatment & Plant Operations: expenses remain flat compared to prior year.
- Other Operating Expenses: some expense lines remain flat; others reflect moderate increases.
- Capital Budget includes:
 - \$1.0 million for water main replacement projects.
 - Nearly \$531,000 for water meter replacements related to the first year of a three-year AMI conversion. New meters will communicate with the AMI electric meters for integrated reporting.
 - An additional \$100,000 for large meters and meters for new construction.
 - Plant/tower upgrades and improvements of \$375,000/
 - \$200,000 for replacement of excavation equipment.

COMMUNICATIONS UTILITY FUND SUMMARY

	FY2025-26 Re-Estimated	FY2026-27 Proposed Budget
Beginning Fund Balance (estimated)	\$ 650,507	\$ 597,506
Revenues		
Communications Revenue - Internet	3,940,000	4,250,000
Communications Revenue - Video	1,225,000	1,250,000
Communications Revenue - Telephone	250,000	250,000
Other Communications Revenue	340,450	244,950
Sales Tax (in)	120,000	120,000
Interest	34,000	34,000
Total Revenues	\$ 5,909,450	\$ 6,148,950
Operating Expenditures		
Salaries	750,700	798,700
Benefits & Employee Costs	289,600	322,100
Internet Wholesale	100,000	110,000
Video Wholesale	1,105,000	1,150,000
Telephone Wholesale	100,000	100,000
Transport Charges	80,000	75,000
Other Expenses	504,900	532,900
Plant Lease - Electric	300,000	300,000
Insurance	26,800	28,000
Admin & Allocated Expenses	369,531	364,270
Sales Tax (out)	120,000	120,000
Franchise Fees to City	63,000	63,000
Total Operating Expenditures	\$ 3,809,531	\$ 3,963,970
Capital Expenditures		
Customer Premise Equipment	225,000	310,000
Fiber Drop/Installs	115,000	100,000
Licensing	5,000	40,000
Vehicles	32,500	37,000
Other Capital	648,800	399,200
Total Capital Expenditures	\$ 1,026,300	\$ 886,200
Debt Service	\$ 1,126,620	\$ 1,126,655
Addition/(Reduction) in Fund Balance	\$ (53,001)	\$ 172,125
Ending Fund Balance (estimated)	\$ 597,506	\$ 769,631

Communications Utility Highlights:

- Communications Subscriptions: Trending upwards.
- Salaries: Cost of living adjustment budgeted at 3% increase.
- Benefits & Employee Costs:
 - Includes expenses for training, continuing education, memberships, dues, and uniforms.
 - Employer portion of medical premiums budgeted to increase 10%.
- Wholesale Provider Costs: Budget reflects moderate projected increases.
- Other Operating Expenses: Line items show limited increases overall.
FY2025-26 re-estimate is based on half-year operations.
- Capital Budget includes:
 - Customer premise equipment budgeted at \$310,000.
 - \$100,000 for fiber drops and installations.
 - System expansion into surrounding areas is budgeted at \$360,000 (NOFA 7 grant-funded).
- Debt Service: Principal and interest payments totaling approximately \$1.1 million.

UTILITY SERVICES & ADMIN FUND SUMMARY

	FY2025-26 Re-Estimated	FY2026-27 Proposed Budget
Beginning Fund Balance (estimated)	\$ 741,262	\$ 741,262
Operating Expenditures		
Salaries	\$ 726,700	\$ 748,700
Benefits & Employee Costs	251,800	271,200
Technology Services	161,600	176,900
Billing Expenses	88,700	93,100
Insurance	20,000	21,300
Other Expenses	206,900	159,400
Total Operating Expenditures	\$ 1,455,700	\$ 1,470,600
Transfers Out		
Shared Services - to City of Indianola	\$ 237,200	\$ 234,400
Transfer to Electric Utility	563,658	568,333
Transfer to Water Utility	360,696	365,636
Transfer to Communications Utility	294,146	302,231
Total Transfers Out	\$ 1,455,700	\$ 1,470,600
Addition/(Reduction) in Fund Balance	\$ -	\$ -
Ending Fund Balance	\$ 741,262	\$ 741,262

Utility Services & Admin Highlights:

- Salaries: Cost of living adjustment budgeted at 3% increase.
- Benefits & Employee Costs:
 - Includes expenses for training, continuing education, memberships, dues, and uniforms.
 - Employer portion of medical premiums budgeted to increase 10%.
- Technology Services: Provides for recurring system maintenance for billing and financial software.
- Billing Expenses: Accounts for the costs of printing and mailing customer utility bills.
- Other Operating Expenses: Includes services for the annual audit, janitorial services, repairs & maintenance, social media management, and related operational needs.