**Participants wishing to speak on a topic should message the meeting moderator. All participants are asked to mute their individual computers at times when they are not speaking to minimize background noise. Join: https://us02web.zoom.us/j/81911996496*

NOTICE OF A REGULAR MEETING
BONDURANT CITY COUNCIL
JUNE 17, 2024

NOTICE IS HEREBY GIVEN that a Regular Meeting of the City Council will be held at 6:00 PM on June 17, 2024, in the Bondurant City Center, 200 Second Street, Northeast, Bondurant, Polk County, Iowa. Said meeting is open and the public is encouraged to attend.

AGENDA

1. Roll Call
2. Call to Order and Declaring a Quorum
3. Abstentions declared
4. Perfecting and Approval of the Agenda
5. Consent Agenda:

   All items listed below are considered routine by the City Council and will be enacted by one motion. There will be no separate discussion of these items unless a Council Member or citizen so requests, in which event the item will be removed from the Consent Agenda and considered separately.

   a. Approval of June 3, 2024, City Council Meeting Minutes
   b. Claims List
   c. Applications for Council Approval
   d. Receive & File - Library Board Meeting Minutes of May 1, 2024 & Director's Report
   e. Receive & File - Bondurant Emergency Services May 2024 Monthly Report
   f. Receive & File - Bondurant Emergency Services Facility Bid Package #2 - Precast (Supply Only) in the amount of $$712,439
   g. - Resolution approving Pay Request No. 1 to Gerard Tank & Steel for the Water Tower Project in the amount of $697,752.68
   h. - Resolution authorizing the Mayor to execute an amendment #1 in the amount of $25,120 to the Agreement with OPN Architects for Commissioning Services related to the Bondurant Emergency Services Facility
   i. - Resolution appointing Jacob Huxford to the City's Tree Board
   j. - Resolution regarding approval of a waiver of review of the Parcel 2024-88, a Plat of Survey located in unincorporated Polk County within two miles of Bondurant's City Limits
   k. - Resolution approving additional Civic Campus Phase I easement and

The Bondurant City Council maintains the right to waive the first and second readings of ordinances presented and may pass the third and final reading of the same ordinance within the same council meeting.

Any person with a disability who requires a modification or accommodation in order to participate in the meeting, or any person with limited English proficiency (LEP) who requires language assistance to communicate with the City Council during the meeting, should contact the City Clerk, (515) 967-2418 or shagan@cityofbondurant.com, no fewer than two business days prior to the meeting to enable the City of Bondurant to make reasonable arrangements to assure accessibility or language assistance for the meeting.

right-of-entry documents for the Myers 1 Certified Site area and authorizing payment for such land rights in the amount of $66,159

l. - Resolution approving Pay Request No. 2 to Brothers Cleaning Corporation DBE Brothers Concrete for the Bondurant City Park Reconstruction Project in the amount of $286,770.96

m. - Resolution of endorsement for the City of Bondurant's grant application request to the Iowa DOT's State Recreational Trails Grant Program for funding to assist with constructing the east extension of the Chichaqua Valley Trail in the area east of Highway 65 and south of the Bondurant Industrial Park

n. - Resolution affixing a date for a public hearing to consider a text amendment to Section 177.09 of the Zoning Code regarding bicycle parking requirements.

o. - Resolution approving amendment no. 2 to the professional services agreement with Veenstra & Kimm for the design of the Certified Site/Civic Campus Area Improvements Project in the amount of $170,200

p. R-240520-109- Resolution approving action to order construction and set date of public hearing for plans, specifications, and recommendation of award of contract for the 1st Street SW and 3rd Street SE Parking Projects

q. - Resolution approving IMWCA Renewal

6. Guests requesting to address the City Council

7. **Public Hearing**

a. Public hearing on the proposed plans, specifications, form of contract, estimate of cost for the Park Side Trail Connection Project

b. Public Hearing to consider adoption of the Pavement Management Program

8. Action Items

a. - Resolution approving the amended Featherstone Townhomes Plat 1 Final Plat

b. - Resolution adopting the City of Bondurant Pavement Management Program

c. - Resolution authorizing City staff to release the Zoning, Subdivision, and Sign Code update Request for Proposals

d. - Resolution awarding the contract for the Parkside Trail Connection Project storage tank to RW Excavating Solutions LC. in the amount of

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$467,721.18

9. Discussion Items -
   a. Chamber Liaison
   b. Timing for Construction of Additional Detention Pond for Civic Campus
   c. Update and discussion on City Park Project
10. Reports / Comments and appropriate action thereon:
   a. Mayor
   b. Council Members
   c. Administrator
   d. Directors
11. **Closed Session**- Pursuant to Iowa Code 21.5.1(j) to discuss property acquisition and 21.5.1(c) potential or pending litigation
12. Adjournment

The Bondurant City Council maintains the right to waive the first and second readings of ordinances presented and may pass the third and final reading of the same ordinance within the same council meeting.

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**Due to the COVID-19 concerns and social distancing recommendations, a virtual meeting was offered.*

BONDURANT CITY COUNCIL
Minutes
June 3, 2024
Bondurant City Council

1. Roll Call

Present:	Council Member Tara Cox, Mayor Pro Tem Angela McKenzie, Council Member Bob Peffer, Council Member Matt Sillanpaa, Council Member Chad Driscoll
Absent:	Mayor Doug Elrod
City Officials Present:	City Administrator Marketa Oliver, City Clerk Shelby Hagan, Planning & Community Development Director Maggie Murray, Public Works Director John Horton, Library Director Jill Sanders, Finance & Employee Services Director Jene Jess

2. Call to Order and Declaring a Quorum

   Mayor Pro Tem McKenzie called the meeting to order at 06:01 PM and declared a quorum.

3. Abstentions declared

   None.

4. Perfecting and Approval of the Agenda

   Motion by Driscoll, seconded by Peffer, to approve the agenda. Vote on Motion 5-0. Motion carried.

5. Guests requesting to address the City Council

   Heith Hockenberry, Jester Insurance, presented the IAMU Safety Group Dividend check of $5,462 to the Council.

6. Consent Agenda:

   All items listed below are considered routine by the City Council and will be enacted by one motion. There will be no separate discussion of these items unless a Council Member or citizen so requests, in which event the item will be removed from the Consent Agenda and considered separately.

   a. Approval of May 20, 2024 City Council Meeting Minutes

   b. Claims List

   c. Applications for Council Approval

   d. Receive and file Bondurant Emergency Services Facility Bid Package #1 - Electrical Equipment in the amount of $299,971

e. R-240603-116- Resolution of endorsement to the Iowa DNR's Land & Water Conservation Fund Program for funding to assist with constructing the Chichaqua Valley Trail extension east of Highway 65 and south of the Bondurant Industrial Park

f. R-240603-117- Resolution affixing a date for a public hearing to consider adoption of the City's Pavement Management Program Plan

g. R-240603-118- Resolution Levying assessment for costs of delinquent water for 706 Filmore Avenue, SE, Bondurant, Polk County, Iowa

h. R-240603-119- Resolution approving Civic Campus Phase I right-of-way acquisition, easement, and right-of-entry documents and authorizing payment for such land rights in an amount not to exceed a combined $175,000

i. R-240603-120- Resolution approving a Community Challenge Grant Memorandum of Understanding between the City of Bondurant and AARP for funding to assist with constructing the Garden installation at the ARTocka Trail Loop

j. R-240603-121- Resolution approving updates to a job grade and wage scale for FY25

k. R-240603-122- Resolution Levying assessment for costs of delinquent water for 213 Tailfeather Drive, NW, Bondurant, Polk County, Iowa

Council Member Driscoll questioned item #6g & #6k.

Motion by Peffer, seconded by Driscoll, to Approve the Consent Agenda. Roll Call: Ayes: Cox, McKenzie, Peffer, Sillanpaa, Driscoll. Nays: None. Absent: Mayor Elrod. Motion carried 5-0.

7. **Public Hearing**

a. Public Hearing regarding the Featherstone Planned Unit Development Substantial Modification Request related to the Outlot W/Featherstone Townhomes Plat 1 area

Mayor Pro Tem McKenzie opened the public hearing at 06:06 PM.

Caleb Smith from Hubbell Realty Company presented to the council a modification request related to the Outlot at the Featherstone Townhomes Plat 1 area, prompting a discussion about past slab-on-

grade proposals that were poorly received, the potential for extra garage space and storm shelters, and the necessity for the amendment to go to the Planning & Zoning Commission for further action; some council members expressed concerns about slab-on-grade construction in terms of weather, storage, safety, and the potential precedent it might set.

Mayor Pro Tem McKenzie closed the public hearing at 06:33 PM.

8. Reports / Comments and appropriate action thereon:

a. Mayor
None.

b. Council Members
Cox - Upcoming meetings.
Sillanpaa - Celebrate Bondurant Showdown comments, upcoming Hillbilly Bike Ride.
Peffer - None.
Driscoll - WRA update.

c. Administrator
Hawthorne Extension update, bids for the Emergency Services building due this week, ICMA Award update, Summerfest booth, water usage restrictions update.

d. Directors
Horton - Department update.
Jess - Celebrate Bondurant Showdown comments.
Murray - P&Z update, Cocktails & Conversation event next week, certified sites update.
Sanders - Department update.

9. **Closed Session**- Pursuant to Iowa Code 21.5.1(j) to discuss property acquisition and 21.5.1(c) potential or pending litigation

Motion by Driscoll, seconded by Sillanpaa, to Move into Closed Session at 06:57 PM. Roll Call: Ayes: Cox, McKenzie, Peffer, Sillanpaa, Driscoll. Nays: None. Absent: Mayor Elrod. Motion carried 5-0.

Mayor Pro Tem McKenzie closed the Closed Session at 07:17 PM.

10. Adjournment

Motion by Peffer, seconded by Sillanpaa, to adjourn at 07:17 PM. Vote on Motion 5-0. Motion carried.

_____
Shelby Hagan, City Clerk

ATTEST:

**Due to the COVID-19 concerns and social distancing recommendations, a virtual meeting was offered.*

_____
Doug Elrod, Mayor

I, the understated Mayor of the City of Bondurant, Polk County, Iowa, hereby certify that the foregoing is a true and accurate copy of proceedings had and done by the City Council on June 3, 2024, that all the subjects included in the foregoing proceedings were contained in the agenda for the meeting kept continually current and readily available for the public inspection at the Office of the City Clerk; that such subject were contained in said agenda for at least twenty-four hours prior to said meeting and the said minutes from which the foregoing proceedings have been extracted were in written form and available for public inspection within ten business days and prior to the next convened meeting of said body.

_____
Doug Elrod, Mayor

Refund Check Register

Refund Check Detail

UBPKT05437 - 5/30/24 - REFUND 01-02389-05

Account	Name	Date	Check #	Amount	Code	Receipt	Amount	Type
01-02389-05	BAILEY, GLORIA E	5/30/2024	63707	43.09			43.09	Deposit
Total Refunds: 1			**Total Refunded Amount:**	43.09				

Revenue Code Summary

Revenue Code	Amount
996 - UNAPPLIED CREDITS	43.09
Revenue Total:	43.09

General Ledger Distribution

Posting Date: 05/30/2024

	Account Number	Account Name	Posting Amount	IFT
Fund: 600 - WATER				
	600-000-1101	CLAIM ON POOLED CASH	-43.09	Yes
	600-050-2141	APPLIED CREDITS	43.09	
		600 Total:	0.00	
Fund: 999 - POOLED CASH				
	999-000-1100	POOLED CASH	-43.09	
	999-050-2300	DUE TO OTHER FUNDS	43.09	Yes
		999 Total:	0.00	
		Distribution Total:	0.00	

Check Register

Packet: APPKT00911 - 5/30/24 CITY OF PLEASANT HILL DEBT PAYMENT

By Check Number

Vendor Number	Vendor Name	Payment Date	Payment Type	Discount Amount	Payment Amount	Number
Bank Code: AP Bank Code-AP Bank						
1708	CITY OF PLEASANT HILL	05/30/2024	Regular	0.00	55,692.00	63708

Bank Code AP Bank Code Summary

Payment Type	Payable Count	Payment Count	Discount	Payment
Regular Checks	1	1	0.00	55,692.00
Manual Checks	0	0	0.00	0.00
Voided Checks	0	0	0.00	0.00
Bank Drafts	0	0	0.00	0.00
EFT's	0	0	0.00	0.00
	1	**1**	**0.00**	**55,692.00**

Fund Summary

Fund	Name	Period	Amount
999	POOLED CASH	5/2024	55,692.00
			55,692.00

Check Register

Packet: APPKT00910 - 5/31/24 FOR MEETING ON 6/17/24

By Check Number

Vendor Number	Vendor Name	Payment Date	Payment Type	Discount Amount	Payment Amount	Number
Bank Code: AP Bank Code-AP Bank						
2030	ALLEGRA	05/31/2024	Regular	0.00	162.68	63709
2687	AT&T MOBILITY	05/31/2024	Regular	0.00	635.19	63710
2184	TARA COX	05/31/2024	Regular	0.00	246.50	63711
0210	IMWCA	05/31/2024	Regular	0.00	20,778.00	63712
	Void	05/31/2024	Regular	0.00	0.00	63713
2706	VALEO NETWORKS	05/31/2024	Regular	0.00	3,163.10	63714
	Void	05/31/2024	Regular	0.00	0.00	63715
	Void	05/31/2024	Regular	0.00	0.00	63716
	Void	05/31/2024	Regular	0.00	0.00	63717
1161	VEENSTRA & KIMM, INC.	05/31/2024	Regular	0.00	23,623.00	63718
2654	JENCO CONSTRUCTION INC.	05/24/2024	Bank Draft	0.00	30,000.00	DFT0003094

Bank Code AP Bank Code Summary

Payment Type	Payable Count	Payment Count	Discount	Payment
Regular Checks	8	6	0.00	48,608.47
Manual Checks	0	0	0.00	0.00
Voided Checks	0	4	0.00	0.00
Bank Drafts	1	1	0.00	30,000.00
EFT's	0	0	0.00	0.00
	9	**11**	**0.00**	**78,608.47**

Fund Summary

Fund	Name	Period	Amount
999	POOLED CASH	5/2024	78,608.47
			78,608.47

Check Register

Packet: APPKT00912 - 5/31/2024 FOR MEETING ON 6/17/2024

By Check Number

Vendor Number	Vendor Name	Payment Date	Payment Type	Discount Amount	Payment Amount	Number
Bank Code: AP Bank Code-AP Bank						
1673	ARROW MANUFACTURING INC	05/31/2024	Regular	0.00	698.00	63719
2199	BENTLEY RIDGE TREE FARM & NURS	05/31/2024	Regular	0.00	9,275.00	63720
1537	BOUND TREE MEDICAL LLC	05/31/2024	Regular	0.00	458.25	63721
2838	MICHELLE BRAND	05/31/2024	Regular	0.00	50.00	63722
0577	CAPITAL CITY EQUIPMENT	05/31/2024	Regular	0.00	39.45	63723
2484	D.R. HORTON	05/31/2024	Regular	0.00	95.00	63724
2839	FAREWAY STORES, INC.	05/31/2024	Regular	0.00	25.00	63725
0459	GALLS LLC	05/31/2024	Regular	0.00	153.00	63726
1525	GANNETT MEDIA CORP	05/31/2024	Regular	0.00	892.63	63727
1927	HARTER CONCRETE LLC	05/31/2024	Regular	0.00	7,877.50	63728
0024	ALTOONA HERALD-INDEX	05/31/2024	Regular	0.00	25.09	63729
0230	IOWA ONE CALL	05/31/2024	Regular	0.00	237.70	63730
1340	KONICA MINOLTA	05/31/2024	Regular	0.00	1,103.98	63731
0842	MENARDS - ALTOONA	05/31/2024	Regular	0.00	32.81	63732
0286	METRO WASTE AUTHORITY	05/31/2024	Regular	0.00	300.00	63733
2629	OPN ARCHITECTS	05/31/2024	Regular	0.00	164,178.56	63734
2835	RELIANT FIRE APPARATUS, INC.	05/31/2024	Regular	0.00	5,083.08	63735
2210	RUSSELL'S TROPHIES & ENGRAVING	05/31/2024	Regular	0.00	259.50	63736
1504	SHIVE-HATTERY INC	05/31/2024	Regular	0.00	45,664.57	63737
1534	STRATUS BUILDNG SOLUTIONS IOW/	05/31/2024	Regular	0.00	475.00	63738
1161	VEENSTRA & KIMM, INC.	05/31/2024	Regular	0.00	71,776.23	63739
	Void	05/31/2024	Regular	0.00	0.00	63740

Bank Code AP Bank Code Summary

Payment Type	Payable Count	Payment Count	Discount	Payment
Regular Checks	36	21	0.00	308,700.35
Manual Checks	0	0	0.00	0.00
Voided Checks	0	1	0.00	0.00
Bank Drafts	0	0	0.00	0.00
EFT's	0	0	0.00	0.00
	36	**22**	**0.00**	**308,700.35**

Fund Summary

Fund	Name	Period	Amount
999	POOLED CASH	5/2024	308,700.35
			308,700.35

Check Register

Packet: APPKT00913 - 06/07/2024 PHONE STIPENDS

By Check Number

Vendor Number	Vendor Name	Payment Date	Payment Type	Discount Amount	Payment Amount	Number
Bank Code: AP Bank Code-AP Bank						
2511	ANNA JOHNSON	06/06/2024	Regular	0.00	27.78	63762
2729	JOHN BERGESON	06/06/2024	Regular	0.00	300.00	63763
2843	JOHN CARPENTER	06/06/2024	Regular	0.00	5.36	63764
1588	SHELBY HAGAN	06/06/2024	Regular	0.00	580.89	63765
2161	JOHN HORTON	06/06/2024	Regular	0.00	300.00	63766
2233	JENE JESS	06/06/2024	Regular	0.00	474.04	63767
2837	KATIE KLUS	06/06/2024	Regular	0.00	50.00	63768
2676	TIFFANY LUING	06/06/2024	Regular	0.00	300.00	63769
2274	CRAIG MARSHMAN	06/06/2024	Regular	0.00	333.84	63770
2276	MURRAY, MAGGIE	06/06/2024	Regular	0.00	300.00	63771
2031	MARKETA OLIVER	06/06/2024	Regular	0.00	604.01	63772
2778	BILL SEXTON	06/06/2024	Regular	0.00	300.00	63773
1989	NICOLE VAN HOUTEN	06/06/2024	Regular	0.00	150.00	63774

Bank Code AP Bank Code Summary

Payment Type	Payable Count	Payment Count	Discount	Payment
Regular Checks	14	13	0.00	3,725.92
Manual Checks	0	0	0.00	0.00
Voided Checks	0	0	0.00	0.00
Bank Drafts	0	0	0.00	0.00
EFT's	0	0	0.00	0.00
	14	**13**	**0.00**	**3,725.92**

Fund Summary

Fund	Name	Period	Amount
999	POOLED CASH	6/2024	3,725.92
			3,725.92

Payable Register

Payable Detail by Vendor Name

Packet: APPKT00909 - PYPKT00561 - 05/06-05/19/2024 PAID
05/24/2024

Payable # / Payable Description	Payable Type / Bank Code	Post Date	Payable Date	Due Date	Discount Date / On Hold	Amount	Tax	Shipping	Discount	Total
Vendor: 2304 - EBS									**Vendor Total:**	**26,665.78**
INV0003875	Invoice	6/1/2024	6/1/2024	6/1/2024	6/1/2024	1,658.91	0.00	0.00	0.00	1,658.91
DELTA DENTAL PAYMENT	AP Bank Code - AP Bank				No	**Payment Date:** 6/1/2024			**Bank Draft:**	DFT0003078

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
DELTA DENTAL PAYMENT	Service	0.00	0.00	1,658.91	0.00	0.00	0.00	1,658.91

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
112-050-2125	DENTAL INSURANCE		1,658.91	100.00%

INV0003881	Invoice	6/1/2024	6/1/2024	6/1/2024	6/1/2024	19,827.78	0.00	0.00	0.00	19,827.78
HEALTH INSURANCE WELLMARK	AP Bank Code - AP Bank				No	**Payment Date:** 6/1/2024			**Bank Draft:**	DFT0003083

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
HEALTH INSURANCE WELLMARK	Service	0.00	0.00	19,827.78	0.00	0.00	0.00	19,827.78

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
112-050-2124	HEALTH INSURANCE WITHHOLDING		19,827.78	100.00%

INV0003882	Invoice	6/1/2024	6/1/2024	6/1/2024	6/1/2024	986.28	0.00	0.00	0.00	986.28
EBS ADMIN COST	AP Bank Code - AP Bank				No	**Payment Date:** 6/1/2024			**Bank Draft:**	DFT0003084

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
EBS ADMIN COST	Service	0.00	0.00	986.28	0.00	0.00	0.00	986.28

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
112-050-2124	HEALTH INSURANCE WITHHOLDING		986.28	100.00%

INV0003884	Invoice	6/1/2024	6/1/2024	6/1/2024	6/1/2024	1,271.33	0.00	0.00	0.00	1,271.33
LIFE & DIS PRINCIPAL	AP Bank Code - AP Bank				No	**Payment Date:** 6/1/2024			**Bank Draft:**	DFT0003086

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
LIFE & DIS PRINCIPAL	Service	0.00	0.00	1,271.33	0.00	0.00	0.00	1,271.33

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
112-050-2124	HEALTH INSURANCE WITHHOLDING		1,271.33	100.00%

INV0003885	Invoice	6/1/2024	6/1/2024	6/1/2024	6/1/2024	2,728.00	0.00	0.00	0.00	2,728.00
SELF FUNDED DEDUCTABLE INSURANCE	AP Bank Code - AP Bank				No	**Payment Date:** 6/1/2024			**Bank Draft:**	DFT0003087

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
SELF FUNDED DEDUCTABLE INSURANCE	Service	0.00	0.00	2,728.00	0.00	0.00	0.00	2,728.00

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
112-050-2124	HEALTH INSURANCE WITHHOLDING		2,728.00	100.00%

INV0003886	Invoice	6/1/2024	6/1/2024	6/1/2024	6/1/2024	193.48	0.00	0.00	0.00	193.48
VISION AVISES	AP Bank Code - AP Bank				No	**Payment Date:** 6/1/2024			**Bank Draft:**	DFT0003088

Payable #	Payable Type	Post Date	Payable Date	Due Date	Discount Date	Amount	Tax	Shipping	Discount	Total
Payable Description	Bank Code				On Hold					

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
VISION AVISES	Service	0.00	0.00	193.48	0.00	0.00	0.00	193.48

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
112-050-2132	VISION WITHHOLDING		193.48	100.00%

Vendor: 0238 - IOWA WORKFORCE DEVELOPMENT **Vendor Total: 385.62**

INV0003890	Invoice	6/21/2024	6/21/2024	6/21/2024	6/21/2024	385.62	0.00	0.00	0.00	385.62
Unemployement Insurance	AP Bank Code - AP Bank				No	**Payment Date:** 6/21/2024		**Bank Draft:**		DFT0003092

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
Unemployement Insurance	NA	0.00	0.00	385.62	0.00	0.00	0.00	385.62

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
112-050-2122	STATE WITHHOLDING		385.62	100.00%

Vendor: 0239 - IPERS **Vendor Total: 17,301.99**

INV0003883	Invoice	5/24/2024	5/24/2024	5/24/2024	5/24/2024	567.07	0.00	0.00	0.00	567.07
Payroll Contribution	AP Bank Code - AP Bank				No	**Payment Date:** 5/24/2024		**Bank Draft:**		DFT0003085

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
Payroll Contribution	NA	0.00	0.00	567.07	0.00	0.00	0.00	567.07

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
112-050-2123	IPERS WITHHOLDING		567.07	100.00%

INV0003887	Invoice	5/24/2024	5/24/2024	5/24/2024	5/24/2024	16,734.92	0.00	0.00	0.00	16,734.92
Payroll Contribution	AP Bank Code - AP Bank				No	**Payment Date:** 5/24/2024		**Bank Draft:**		DFT0003089

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
Payroll Contribution	NA	0.00	0.00	5,232.70	0.00	0.00	0.00	5,232.70

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
112-050-2123	IPERS WITHHOLDING		5,232.70	100.00%

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
Payroll Contribution	NA	0.00	0.00	11,502.22	0.00	0.00	0.00	11,502.22

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
112-050-2123	IPERS WITHHOLDING		11,502.22	100.00%

Vendor: 1512 - IRS USATAXPYMT **Vendor Total: 25,676.89**

INV0003889	Invoice	5/24/2024	5/24/2024	5/24/2024	5/24/2024	25,676.89	0.00	0.00	0.00	25,676.89
Federal Tax Withheld	AP Bank Code - AP Bank				No	**Payment Date:** 5/24/2024		**Bank Draft:**		DFT0003091

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
Social Security Withholding	NA	0.00	0.00	13,632.64	0.00	0.00	0.00	13,632.64

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
112-050-2121	FICA/MEDICARE WITHHOLDING		13,632.64	100.00%

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
Medicare Withholding	NA	0.00	0.00	3,188.22	0.00	0.00	0.00	3,188.22

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
112-050-2121	FICA/MEDICARE WITHHOLDING		3,188.22	100.00%

Payable #	Payable Type	Post Date	Payable Date	Due Date	Discount Date	Amount	Tax	Shipping	Discount	Total
Payable Description	Bank Code				On Hold					

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
Federal Tax Withheld	NA	0.00	0.00	8,856.03	0.00	0.00	0.00	8,856.03

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
670-050-2120	FEDERAL WITHHOLDING		17.81	0.20%
741-050-2120	FEDERAL WITHHOLDING		301.89	3.41%
610-050-2120	FEDERAL WITHHOLDING		798.61	9.02%
600-050-2120	FEDERAL WITHHOLDING		864.85	9.77%
110-050-2120	FEDERAL WITHHOLDING		793.93	8.96%
001-050-2120	FEDERAL WITHHOLDING		6,078.94	68.64%

Vendor: 2249 - ISOLVED BENEFIT SERVICES **Vendor Total: 2,288.93**

Payable #	Payable Type	Post Date	Payable Date	Due Date	Discount Date	Amount	Tax	Shipping	Discount	Total
INV0003876	Invoice	5/24/2024	5/24/2024	5/24/2024	5/24/2024	2,239.14	0.00	0.00	0.00	2,239.14
Payroll Deduction	AP Bank Code - AP Bank				No	**Payment Date:** 5/24/2024		**Bank Draft:**		DFT0003079

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
Payroll Deduction	NA	0.00	0.00	2,239.14	0.00	0.00	0.00	2,239.14

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
820-050-2131	SELF-FUNDED WITHHOLDING		2,239.14	100.00%

Payable #	Payable Type	Post Date	Payable Date	Due Date	Discount Date	Amount	Tax	Shipping	Discount	Total
INV0003877	Invoice	5/24/2024	5/24/2024	6/6/2024	5/24/2024	49.79	0.00	0.00	0.00	49.79
FSA ADMIN FEE	AP Bank Code - AP Bank				No	**Payment Date:** 6/6/2024		**Bank Draft:**		DFT0003080

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
FLEX SPENDING ADMINISTRATION FEE	Service	0.00	0.00	49.79	0.00	0.00	0.00	49.79

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
820-050-2131	SELF-FUNDED WITHHOLDING		49.79	100.00%

Vendor: 1274 - MISSION SQUARE **Vendor Total: 1,763.41**

Payable #	Payable Type	Post Date	Payable Date	Due Date	Discount Date	Amount	Tax	Shipping	Discount	Total
INV0003878	Invoice	5/24/2024	5/24/2024	5/24/2024	5/24/2024	1,375.00	0.00	0.00	0.00	1,375.00
Payroll Deduction	AP Bank Code - AP Bank				No	**Payment Date:** 5/24/2024		**Bank Draft:**		DFT0003081

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
Payroll Deduction	NA	0.00	0.00	1,375.00	0.00	0.00	0.00	1,375.00

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
001-050-2130	ICMA-RC		1,375.00	100.00%

Payable #	Payable Type	Post Date	Payable Date	Due Date	Discount Date	Amount	Tax	Shipping	Discount	Total
INV0003879	Invoice	5/24/2024	5/24/2024	5/24/2024	5/24/2024	388.41	0.00	0.00	0.00	388.41
DEFFERED COMPENSATION	AP Bank Code - AP Bank				No	**Payment Date:** 5/24/2024		**Bank Draft:**		DFT0003082

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
DEFFERED COMPENSATION	Service	0.00	0.00	388.41	0.00	0.00	0.00	388.41

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
001-050-2130	ICMA-RC		388.41	100.00%

Vendor: 1832 - TREASURER - STATE OF IOWA **Vendor Total: 4,038.40**

Payable #	Payable Type	Post Date	Payable Date	Due Date	Discount Date	Amount	Tax	Shipping	Discount	Total
INV0003888	Invoice	5/24/2024	5/24/2024	5/24/2024	5/24/2024	4,038.40	0.00	0.00	0.00	4,038.40
State Tax Withholding	AP Bank Code - AP Bank				No	**Payment Date:** 5/24/2024		**Bank Draft:**		DFT0003090

Payable #	Payable Type	Post Date	Payable Date	Due Date	Discount Date	Amount	Tax	Shipping	Discount	Total
Payable Description	Bank Code				On Hold					

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
State Tax Withholding	NA	0.00	0.00	4,038.40	0.00	0.00	0.00	4,038.40

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
110-050-2122	STATE WITHHOLDING		371.95	9.21%
670-050-2122	STATE WITHHOLDING		13.90	0.34%
600-050-2122	STATE WITHHOLDING		377.83	9.36%
741-050-2122	STATE WITHHOLDING		160.05	3.96%
001-050-2122	STATE WITHHOLDING		2,773.60	68.68%
610-050-2122	STATE WITHHOLDING		341.07	8.45%

Payable Summary

Type	Count	Gross	Tax	Shipping	Discount	Total	Manual Payment	Balance
Invoice	15	78,121.02	0.00	0.00	0.00	78,121.02	78,121.02	0.00
	Grand Total:	**78,121.02**	**0.00**	**0.00**	**0.00**	**78,121.02**	**78,121.02**	**0.00**

Account Summary

Account	Name	Amount
001-050-2120	FEDERAL WITHHOLDING	6,078.94
001-050-2122	STATE WITHHOLDING	2,773.60
001-050-2130	ICMA-RC	1,763.41
	Total:	**10,615.95**

Account	Name	Amount
110-050-2120	FEDERAL WITHHOLDING	793.93
110-050-2122	STATE WITHHOLDING	371.95
	Total:	**1,165.88**

Account	Name	Amount
112-050-2121	FICA/MEDICARE WITHHOLDING	16,820.86
112-050-2122	STATE WITHHOLDING	385.62
112-050-2123	IPERS WITHHOLDING	17,301.99
112-050-2124	HEALTH INSURANCE WITHHOLDING	24,813.39
112-050-2125	DENTAL INSURANCE	1,658.91
112-050-2132	VISION WITHHOLDING	193.48
	Total:	**61,174.25**

Account	Name	Amount
600-050-2120	FEDERAL WITHHOLDING	864.85
600-050-2122	STATE WITHHOLDING	377.83
	Total:	**1,242.68**

Account	Name	Amount
610-050-2120	FEDERAL WITHHOLDING	798.61
610-050-2122	STATE WITHHOLDING	341.07
	Total:	**1,139.68**

Account	Name	Amount
670-050-2120	FEDERAL WITHHOLDING	17.81
670-050-2122	STATE WITHHOLDING	13.90
	Total:	**31.71**

Account	Name	Amount
741-050-2120	FEDERAL WITHHOLDING	301.89
741-050-2122	STATE WITHHOLDING	160.05
	Total:	**461.94**

Account	Name	Amount
820-050-2131	SELF-FUNDED WITHHOLDING	2,288.93
	Total:	**2,288.93**

Payable Register

Payable Detail by Vendor Name

Packet: APPKT00916 - PYPKT00564 - 05/20-06/02/2024 PAID ON 06/07/2024

Payable # / Payable Description	Payable Type / Bank Code	Post Date	Payable Date	Due Date	Discount Date / On Hold	Amount	Tax	Shipping	Discount	Total
Vendor: 2304 - EBS									**Vendor Total:**	**25,688.79**
INV0003913	Invoice	7/1/2024	7/1/2024	7/1/2024	7/1/2024	1,658.91	0.00	0.00	0.00	1,658.91
DELTA DENTAL PAYMENT	AP Bank Code - AP Bank				No	**Payment Date:** 7/1/2024			**Bank Draft:**	DFT0003107

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
DELTA DENTAL PAYMENT	Service	0.00	0.00	1,658.91	0.00	0.00	0.00	1,658.91

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
112-050-2125	DENTAL INSURANCE		1,658.91	100.00%

INV0003918	Invoice	7/1/2024	7/1/2024	7/1/2024	7/1/2024	18,850.77	0.00	0.00	0.00	18,850.77
HEALTH INSURANCE WELLMARK	AP Bank Code - AP Bank				No	**Payment Date:** 7/1/2024			**Bank Draft:**	DFT0003112

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
HEALTH INSURANCE WELLMARK	Service	0.00	0.00	18,850.77	0.00	0.00	0.00	18,850.77

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
112-050-2124	HEALTH INSURANCE WITHHOLDING		18,850.77	100.00%

INV0003919	Invoice	7/1/2024	7/1/2024	7/1/2024	7/1/2024	986.28	0.00	0.00	0.00	986.28
EBS ADMIN COST	AP Bank Code - AP Bank				No	**Payment Date:** 7/1/2024			**Bank Draft:**	DFT0003113

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
EBS ADMIN COST	Service	0.00	0.00	986.28	0.00	0.00	0.00	986.28

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
112-050-2124	HEALTH INSURANCE WITHHOLDING		986.28	100.00%

INV0003921	Invoice	7/1/2024	7/1/2024	7/1/2024	7/1/2024	1,271.33	0.00	0.00	0.00	1,271.33
LIFE & DIS PRINCIPAL	AP Bank Code - AP Bank				No	**Payment Date:** 7/1/2024			**Bank Draft:**	DFT0003115

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
LIFE & DIS PRINCIPAL	Service	0.00	0.00	1,271.33	0.00	0.00	0.00	1,271.33

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
112-050-2124	HEALTH INSURANCE WITHHOLDING		1,271.33	100.00%

INV0003922	Invoice	7/1/2024	7/1/2024	7/1/2024	7/1/2024	2,728.00	0.00	0.00	0.00	2,728.00
SELF FUNDED DEDUCTABLE INSURANCE	AP Bank Code - AP Bank				No	**Payment Date:** 7/1/2024			**Bank Draft:**	DFT0003116

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
SELF FUNDED DEDUCTABLE INSURANCE	Service	0.00	0.00	2,728.00	0.00	0.00	0.00	2,728.00

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
112-050-2124	HEALTH INSURANCE WITHHOLDING		2,728.00	100.00%

INV0003923	Invoice	7/1/2024	7/1/2024	7/1/2024	7/1/2024	193.50	0.00	0.00	0.00	193.50
VISION AVISES	AP Bank Code - AP Bank				No	**Payment Date:** 7/1/2024			**Bank Draft:**	DFT0003117

Payable #	Payable Type	Post Date	Payable Date	Due Date	Discount Date	Amount	Tax	Shipping	Discount	Total
Payable Description	Bank Code				On Hold					

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
VISION AVISES	Service	0.00	0.00	193.50	0.00	0.00	0.00	193.50

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
112-050-2132	VISION WITHHOLDING		193.50	100.00%

Vendor: 0238 - IOWA WORKFORCE DEVELOPMENT **Vendor Total: 375.35**

INV0003927	Invoice	6/21/2024	6/21/2024	6/21/2024	6/21/2024	375.35	0.00	0.00	0.00	375.35
Unemployement Insurance	AP Bank Code - AP Bank				No	**Payment Date:** 6/21/2024		**Bank Draft:**		DFT0003121

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
Unemployement Insurance	NA	0.00	0.00	375.35	0.00	0.00	0.00	375.35

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
112-050-2122	STATE WITHHOLDING		375.35	100.00%

Vendor: 0239 - IPERS **Vendor Total: 17,553.04**

INV0003920	Invoice	6/21/2024	6/21/2024	6/21/2024	6/21/2024	567.07	0.00	0.00	0.00	567.07
Payroll Contribution	AP Bank Code - AP Bank				No	**Payment Date:** 6/21/2024		**Bank Draft:**		DFT0003114

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
Payroll Contribution	NA	0.00	0.00	567.07	0.00	0.00	0.00	567.07

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
112-050-2123	IPERS WITHHOLDING		567.07	100.00%

INV0003924	Invoice	6/21/2024	6/21/2024	6/21/2024	6/21/2024	16,985.97	0.00	0.00	0.00	16,985.97
Payroll Contribution	AP Bank Code - AP Bank				No	**Payment Date:** 6/21/2024		**Bank Draft:**		DFT0003118

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
Payroll Contribution	NA	0.00	0.00	5,517.38	0.00	0.00	0.00	5,517.38

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
112-050-2123	IPERS WITHHOLDING		5,517.38	100.00%

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
Payroll Contribution	NA	0.00	0.00	11,468.59	0.00	0.00	0.00	11,468.59

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
112-050-2123	IPERS WITHHOLDING		11,468.59	100.00%

Vendor: 1512 - IRS USATAXPYMT **Vendor Total: 25,995.07**

INV0003926	Invoice	6/7/2024	6/7/2024	6/7/2024	6/7/2024	25,995.07	0.00	0.00	0.00	25,995.07
Federal Tax Withheld	AP Bank Code - AP Bank				No	**Payment Date:** 6/7/2024		**Bank Draft:**		DFT0003120

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
Social Security Withholding	NA	0.00	0.00	13,734.26	0.00	0.00	0.00	13,734.26

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
112-050-2121	FICA/MEDICARE WITHHOLDING		13,734.26	100.00%

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
Medicare Withholding	NA	0.00	0.00	3,212.02	0.00	0.00	0.00	3,212.02

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
112-050-2121	FICA/MEDICARE WITHHOLDING		3,212.02	100.00%

Payable #	Payable Type	Post Date	Payable Date	Due Date	Discount Date	Amount	Tax	Shipping	Discount	Total
Payable Description	Bank Code				On Hold					

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
Federal Tax Withheld	NA	0.00	0.00	9,048.79	0.00	0.00	0.00	9,048.79

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
741-050-2120	FEDERAL WITHHOLDING		280.85	3.10%
670-050-2120	FEDERAL WITHHOLDING		17.85	0.20%
610-050-2120	FEDERAL WITHHOLDING		755.52	8.35%
600-050-2120	FEDERAL WITHHOLDING		818.60	9.05%
110-050-2120	FEDERAL WITHHOLDING		785.40	8.68%
001-050-2120	FEDERAL WITHHOLDING		6,390.57	70.62%

Vendor: 2249 - ISOLVED BENEFIT SERVICES **Vendor Total: 2,286.48**

INV0003914	Invoice	6/7/2024	6/7/2024	6/7/2024	6/7/2024	2,239.14	0.00	0.00	0.00	2,239.14
Payroll Deduction	AP Bank Code - AP Bank				No	**Payment Date:** 6/7/2024			**Bank Draft:**	DFT0003108

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
Payroll Deduction	NA	0.00	0.00	2,239.14	0.00	0.00	0.00	2,239.14

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
820-050-2131	SELF-FUNDED WITHHOLDING		2,239.14	100.00%

INV0003915	Invoice	6/7/2024	6/7/2024	7/6/2024	6/7/2024	47.34	0.00	0.00	0.00	47.34
FSA ADMIN FEE	AP Bank Code - AP Bank				No	**Payment Date:** 7/6/2024			**Bank Draft:**	DFT0003109

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
FLEX SPENDING ADMINISTRATION FEE	Service	0.00	0.00	47.34	0.00	0.00	0.00	47.34

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
820-050-2131	SELF-FUNDED WITHHOLDING		47.34	0%

Vendor: 1274 - MISSION SQUARE **Vendor Total: 1,763.41**

INV0003916	Invoice	6/21/2024	6/21/2024	6/21/2024	6/21/2024	1,375.00	0.00	0.00	0.00	1,375.00
Payroll Deduction	AP Bank Code - AP Bank				No	**Payment Date:** 6/21/2024			**Bank Draft:**	DFT0003110

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
Payroll Deduction	NA	0.00	0.00	1,375.00	0.00	0.00	0.00	1,375.00

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
001-050-2130	ICMA-RC		1,375.00	100.00%

INV0003917	Invoice	6/21/2024	6/21/2024	6/21/2024	6/21/2024	388.41	0.00	0.00	0.00	388.41
DEFFERED COMPENSATION	AP Bank Code - AP Bank				No	**Payment Date:** 6/21/2024			**Bank Draft:**	DFT0003111

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
DEFFERED COMPENSATION	Service	0.00	0.00	388.41	0.00	0.00	0.00	388.41

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
001-050-2130	ICMA-RC		388.41	100.00%

Vendor: 1832 - TREASURER - STATE OF IOWA **Vendor Total: 4,073.82**

INV0003925	Invoice	6/21/2024	6/21/2024	6/21/2024	6/21/2024	4,073.82	0.00	0.00	0.00	4,073.82
State Tax Withholding	AP Bank Code - AP Bank				No	**Payment Date:** 6/21/2024			**Bank Draft:**	DFT0003119

Payable #	Payable Type	Post Date	Payable Date	Due Date	Discount Date	Amount	Tax	Shipping	Discount	Total
Payable Description	Bank Code				On Hold					

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
State Tax Withholding	NA	0.00	0.00	4,073.82	0.00	0.00	0.00	4,073.82

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
670-050-2122	STATE WITHHOLDING		13.89	0.34%
110-050-2122	STATE WITHHOLDING		366.72	9.00%
610-050-2122	STATE WITHHOLDING		321.03	7.88%
741-050-2122	STATE WITHHOLDING		149.31	3.67%
600-050-2122	STATE WITHHOLDING		356.42	8.75%
001-050-2122	STATE WITHHOLDING		2,866.45	70.36%

Payable Summary

Type	Count	Gross	Tax	Shipping	Discount	Total	Manual Payment	Balance
Invoice	15	77,735.96	0.00	0.00	0.00	77,735.96	77,735.96	0.00
	Grand Total:	**77,735.96**	**0.00**	**0.00**	**0.00**	**77,735.96**	**77,735.96**	**0.00**

Account Summary

Account	Name		Amount
001-050-2120	FEDERAL WITHHOLDING		6,390.57
001-050-2122	STATE WITHHOLDING		2,866.45
001-050-2130	ICMA-RC		1,763.41
		Total:	**11,020.43**

Account	Name		Amount
110-050-2120	FEDERAL WITHHOLDING		785.40
110-050-2122	STATE WITHHOLDING		366.72
		Total:	**1,152.12**

Account	Name		Amount
112-050-2121	FICA/MEDICARE WITHHOLDING		16,946.28
112-050-2122	STATE WITHHOLDING		375.35
112-050-2123	IPERS WITHHOLDING		17,553.04
112-050-2124	HEALTH INSURANCE WITHHOLDING		23,836.38
112-050-2125	DENTAL INSURANCE		1,658.91
112-050-2132	VISION WITHHOLDING		193.50
		Total:	**60,563.46**

Account	Name		Amount
600-050-2120	FEDERAL WITHHOLDING		818.60
600-050-2122	STATE WITHHOLDING		356.42
		Total:	**1,175.02**

Account	Name		Amount
610-050-2120	FEDERAL WITHHOLDING		755.52
610-050-2122	STATE WITHHOLDING		321.03
		Total:	**1,076.55**

Account	Name		Amount
670-050-2120	FEDERAL WITHHOLDING		17.85
670-050-2122	STATE WITHHOLDING		13.89
		Total:	**31.74**

Account	Name		Amount
741-050-2120	FEDERAL WITHHOLDING		280.85
741-050-2122	STATE WITHHOLDING		149.31
		Total:	**430.16**

Account	Name		Amount
820-050-2131	SELF-FUNDED WITHHOLDING		2,286.48
		Total:	**2,286.48**

Payable Register

Payable Detail by Vendor Name

Packet: APPKT00917 - PYPKT00563 - SEMI ANNUAL ENDING 12-01-05/31/2024 PAID 06/07/202

Payable #	Payable Type	Post Date	Payable Date	Due Date	Discount Date	Amount	Tax	Shipping	Discount	Total
Payable Description	Bank Code				On Hold					

Vendor: 0239 - IPERS — **Vendor Total:** **2,255.93**

INV0003931	Invoice	6/21/2024	6/21/2024	6/21/2024	6/21/2024	1,569.07	0.00	0.00	0.00	1,569.07
Payroll Contribution	AP Bank Code - AP Bank				No	**Payment Date:** 6/21/2024			**Bank Draft:**	DFT0003122

Payable Address: PO BOX 9117
DES MOINES, Iowa 50306-9117

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
Payroll Contribution	NA	0.00	0.00	1,569.07	0.00	0.00	0.00	1,569.07

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
110-050-2123	IPERS WITHHOLDING		1,569.07	100.00%

INV0003932	Invoice	6/21/2024	6/21/2024	6/21/2024	6/21/2024	686.86	0.00	0.00	0.00	686.86
Payroll Contribution	AP Bank Code - AP Bank				No	**Payment Date:** 6/21/2024			**Bank Draft:**	DFT0003123

Payable Address: PO BOX 9117
DES MOINES, Iowa 50306-9117

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
Payroll Contribution	NA	0.00	0.00	686.86	0.00	0.00	0.00	686.86

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
112-050-2123	IPERS WITHHOLDING		686.86	100.00%

Vendor: 1512 - IRS USATAXPYMT — **Vendor Total:** **3,131.10**

INV0003934	Invoice	6/7/2024	6/7/2024	6/7/2024	6/7/2024	3,131.10	0.00	0.00	0.00	3,131.10
Federal Tax Withheld	AP Bank Code - AP Bank				No	**Payment Date:** 6/7/2024			**Bank Draft:**	DFT0003125

Payable Address:

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
Social Security Withholding	NA	0.00	0.00	1,654.82	0.00	0.00	0.00	1,654.82

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
112-050-2121	FICA/MEDICARE WITHHOLDING		1,654.82	100.00%

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
Medicare Withholding	NA	0.00	0.00	676.30	0.00	0.00	0.00	676.30

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
112-050-2121	FICA/MEDICARE WITHHOLDING		676.30	100.00%

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
Federal Tax Withheld	NA	0.00	0.00	799.98	0.00	0.00	0.00	799.98

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
001-050-2120	FEDERAL WITHHOLDING		799.98	100.00%

Vendor: 1832 - TREASURER - STATE OF IOWA — **Vendor Total:** **235.60**

INV0003933	Invoice	6/21/2024	6/21/2024	6/21/2024	6/21/2024	235.60	0.00	0.00	0.00	235.60
State Tax Withholding	AP Bank Code - AP Bank				No	**Payment Date:** 6/21/2024			**Bank Draft:**	DFT0003124

Payable Address: WITHHOLD TAX PRCS-IA DEPT REV
PO BOX 10411
DES MOINES, Iowa 50306

Payable #	Payable Type	Post Date	Payable Date	Due Date	Discount Date	Amount	Tax	Shipping	Discount	Total
Payable Description	Bank Code				On Hold					

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
State Tax Withholding	NA	0.00	0.00	235.60	0.00	0.00	0.00	235.60

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
001-050-2122	STATE WITHHOLDING		235.60	100.00%

Payable Summary

Type	Count	Gross	Tax	Shipping	Discount	Total	Manual Payment	Balance
Invoice	4	5,622.63	0.00	0.00	0.00	5,622.63	5,622.63	0.00
	Grand Total:	**5,622.63**	**0.00**	**0.00**	**0.00**	**5,622.63**	**5,622.63**	**0.00**

Account Summary

Account	Name		Amount
001-050-2120	FEDERAL WITHHOLDING		799.98
001-050-2122	STATE WITHHOLDING		235.60
		Total:	**1,035.58**

Account	Name		Amount
110-050-2123	IPERS WITHHOLDING		1,569.07
		Total:	**1,569.07**

Account	Name		Amount
112-050-2121	FICA/MEDICARE WITHHOLDING		2,331.12
112-050-2123	IPERS WITHHOLDING		686.86
		Total:	**3,017.98**

Payable Register

Payable Detail by Vendor Name

Packet: APPKT00918 - 5/20/24 CREDIT CARD PAYMENT

Payable #	Payable Type	Post Date	Payable Date	Due Date	Discount Date	Amount	Tax	Shipping	Discount	Total
Payable Description	Bank Code				On Hold					
Vendor: 2254 - TCM BANK NA									**Vendor Total:**	**1,662.29**
INV0003935	Invoice	5/20/2024	5/20/2024	5/20/2024	5/20/2024	1,662.29	0.00	0.00	0.00	1,662.29
CITY HALL VISA	AP Bank Code - AP Bank				No	**Payment Date:** 5/20/2024			**Bank Draft:**	DFT0003126

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
CITY HALL VISA FRAUD REVERSAL	Service	0.00	0.00	-1.95	0.00	0.00	0.00	-1.95

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
001-620-6580	MISC		-1.95	100.00%

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
CITY HALL VISA FRAUD REVERSAL	Service	0.00	0.00	-49.95	0.00	0.00	0.00	-49.95

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
001-621-6580	MISCELLANEOUS		-49.95	100.00%

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
CITY HALL VISA FRAUD REVERSAL	Service	0.00	0.00	-4.95	0.00	0.00	0.00	-4.95

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
001-621-6580	MISCELLANEOUS		-4.95	100.00%

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
CITY HALL VISA KEEP BONDU BEAUTIFUL...	Service	0.00	0.00	228.25	0.00	0.00	0.00	228.25

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
001-440-6507	OPERATING SUPPLIES		228.25	100.00%

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
CITY HALL VISA QUARTERLY BOLD LUNCH	Service	0.00	0.00	53.69	0.00	0.00	0.00	53.69

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
001-150-6230	TRAINING		5.75	10.71%
001-160-6230	TRAINING		5.75	10.71%
001-170-6230	TRAINING		0.61	1.14%
001-410-6230	TRAINING		3.84	7.15%
001-430-6230	TRAINING		1.15	2.14%
001-440-6230	TRAINING		1.92	3.58%
001-450-6230	TRAINING		0.58	1.08%
001-520-6230	TRAINING		3.84	7.15%
001-540-6230	TRAINING		7.13	13.28%
001-620-6230	TRAINING		3.64	6.78%
001-621-6230	TRAINING		6.33	11.79%
110-210-6230	TRAINING		5.02	9.35%
600-812-6230	TRAINING		3.62	6.74%
610-816-6230	TRAINING		3.23	6.02%
670-840-6230	TRAINING		0.13	0.24%
741-865-6230	TRAINING		1.15	2.14%

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
CITY HALL VISA PARKING FOR MEETING	Service	0.00	0.00	3.00	0.00	0.00	0.00	3.00

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
001-520-6240	MEETINGS & CONFERENCES		3.00	100.00%

Payable #	Payable Type	Post Date	Payable Date	Due Date	Discount Date	Amount	Tax	Shipping	Discount	Total
Payable Description	Bank Code				On Hold					

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
CITY HALL VISA NPELRA CONFERENCE JE...	Service	0.00	0.00	102.29	0.00	0.00	0.00	102.29

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
001-621-6240	MEETINGS & CONFERENCES		71.60	70.00%
600-812-6240	MEETINGS & CONFERENCES		15.34	15.00%
610-817-6240	MEETINGS & CONFERENCES		15.35	15.00%

Items

Item Description	Commodity	Units	Price	Amount	Tax	Shipping	Discount	Total
CITY HALL VISA NPELRA CONFERENCE OL..	Service	0.00	0.00	1,331.91	0.00	0.00	0.00	1,331.91

Distributions

Account Number	Account Name	Project Account Key	Amount	Percent
001-540-6240	MEETINGS & CONFERENCES		266.38	20.00%
001-621-6240	MEETINGS & CONFERENCES		266.38	20.00%
110-210-6240	MEETINGS & CONFERENCES		266.38	20.00%
600-812-6240	MEETINGS & CONFERENCES		266.38	20.00%
610-817-6240	MEETINGS & CONFERENCES		266.39	20.00%

Payable Summary

Type	Count	Gross	Tax	Shipping	Discount	Total	Manual Payment	Balance
Invoice	1	1,662.29	0.00	0.00	0.00	1,662.29	1,662.29	0.00
	Grand Total:	**1,662.29**	**0.00**	**0.00**	**0.00**	**1,662.29**	**1,662.29**	**0.00**

Account Summary

Account	Name	Amount
001-150-6230	TRAINING	5.75
001-160-6230	TRAINING	5.75
001-170-6230	TRAINING	0.61
001-410-6230	TRAINING	3.84
001-430-6230	TRAINING	1.15
001-440-6230	TRAINING	1.92
001-440-6507	OPERATING SUPPLIES	228.25
001-450-6230	TRAINING	0.58
001-520-6230	TRAINING	3.84
001-520-6240	MEETINGS & CONFERENCES	3.00
001-540-6230	TRAINING	7.13
001-540-6240	MEETINGS & CONFERENCES	266.38
001-620-6230	TRAINING	3.64
001-620-6580	MISC	-1.95
001-621-6230	TRAINING	6.33
001-621-6240	MEETINGS & CONFERENCES	337.98
001-621-6580	MISCELLANEOUS	-54.90
	Total:	**819.30**

Account	Name	Amount
110-210-6230	TRAINING	5.02
110-210-6240	MEETINGS & CONFERENCES	266.38
	Total:	**271.40**

Account	Name	Amount
600-812-6230	TRAINING	3.62
600-812-6240	MEETINGS & CONFERENCES	281.72
	Total:	**285.34**

Account	Name	Amount
610-816-6230	TRAINING	3.23
610-817-6240	MEETINGS & CONFERENCES	281.74
	Total:	**284.97**

Account	Name	Amount
670-840-6230	TRAINING	0.13
	Total:	**0.13**

Account	Name	Amount
741-865-6230	TRAINING	1.15
	Total:	**1.15**

Payroll Check Register

Checks

Pay Period: 5/20/2024-6/2/2024

Packet: PYPKT00564 - 05/20-06/02/2024 PAID ON 06/07/2024
Payroll Set: CITY OF BONDURANT, IA - 01

Employee	Employee #	Check Type	Date	Amount	Number

***** No Checks Created In This Packet *****

Payroll Check Register
Direct Deposits
Pay Period: 5/20/2024-6/2/2024

Packet: PYPKT00564 - 05/20-06/02/2024 PAID ON 06/07/2024
Payroll Set: CITY OF BONDURANT, IA - 01

Employee	Employee #	Date	Amount	Number
BAAS, JAMIE	4147	06/07/2024	87.92	105044
BAILEY, BOYCE E	7104	06/07/2024	1,325.88	105045
BERGESON, JOHN W	7121	06/07/2024	1,928.89	105046
BRIGGS, ASHTON S	1511	06/07/2024	823.39	105047
BRUCE, EMMA	3141	06/07/2024	818.67	105048
CARPENTER, JOHN C	5129	06/07/2024	1,541.52	105049
COLLISON, PATRICK F	5103	06/07/2024	2,200.56	105050
CORY, JOHN P	7120	06/07/2024	1,592.85	105051
CRITTENDEN, MATTHEW	1567	06/07/2024	1,355.99	105052
DE LOS SANTOS, JUAN DAVID	7128	06/07/2024	1,109.86	105053
DOMINGUEZ, MATTHEW P	1513	06/07/2024	860.81	105054
ELLIOTT, KYLE	1568	06/07/2024	1,142.57	105055
GANNAWAY, COURTNEY	1597	06/07/2024	1,193.77	105056
GILSON, DUSTY ALAN	7124	06/07/2024	1,776.48	105057
HAGAN, SHELBY L	5118	06/07/2024	2,577.47	105058
HARMISON, TROY G	1503	06/07/2024	1,759.31	105059
HIGGINS, DAVID P.	7105	06/07/2024	1,553.88	105060
HORTON, JOHN C	7112	06/07/2024	100.00	105061
HORTON, JOHN C	7112	06/07/2024	3,352.63	105061
HOWIESON, DANIEL	1572	06/07/2024	750.32	105062
HUFF, TIMOTHY J	1559	06/07/2024	2,068.44	105063
JESS, JENE' N	5123	06/07/2024	3,428.33	105064
JOHNSON, ANNASTASHA	5130	06/07/2024	1,390.46	105065
KENT, RONALD D	7115	06/07/2024	691.98	105066
KING, CHRISTINA M	3143	06/07/2024	446.18	105067
KLINKER, KRIS	7116	06/07/2024	564.05	105068
KLINKER-FELD, MICHELL M	3135	06/07/2024	2,442.57	105069
KLUS, KATIE	5134	06/07/2024	1,798.16	105070
KREUDER, AARON M	1441	06/07/2024	3,590.12	105071
KRUSE, OSCAR	1586	06/07/2024	879.07	105072
LUING, TIFFANY A	5133	06/07/2024	1,896.81	105073
LUNDQUIST, BRADLEY D	1555	06/07/2024	794.71	105074
MARSHMAN, CRAIG A	5125	06/07/2024	1,645.37	105075
MASON, KYLE	1598	06/07/2024	798.55	105076
MILLER, BRODY E	1582	06/07/2024	1,526.20	105077
MURRAY, MARGARET	5126	06/07/2024	2,954.59	105078
OLIVER, MARKETA S	8403	06/07/2024	300.00	105079
OLIVER, MARKETA S	8403	06/07/2024	3,601.98	105079
PEZLEY, ISAAC J	5132	06/07/2024	2,239.12	105080
RAUTERBERG, ANTHONY	1599	06/07/2024	2,652.09	105081
REYNOLDS, RAY A	1537	06/07/2024	944.46	105082
RICCIO, ANTHONY F	1583	06/07/2024	714.74	105083
SANDERS, JILL C	3128	06/07/2024	3,212.61	105084
SCHINCKE, MEGAN	3137	06/07/2024	971.39	105085
SCHINCKE, MEGAN	3137	06/07/2024	416.31	105085
SCHINCKE, MEGAN	3137	06/07/2024	125.00	105085
SEXTON, WILLIAM M	7125	06/07/2024	250.00	105086
SEXTON, WILLIAM M	7125	06/07/2024	1,098.13	105086
SPOERRY, DANIELLE M	1527	06/07/2024	1,397.49	105087
SUHR, CARLENE E.F.	3144	06/07/2024	1,405.90	105088
SUMMERS, AANNA N	1575	06/07/2024	2,002.66	105089

Packet: PYPKT00564 - 05/20-06/02/2024 PAID ON 06/07/2024
Payroll Set: CITY OF BONDURANT, IA - 01

Employee	Employee #	Date	Amount	Number
SUMMERS, ALAN C	1534	06/07/2024	2,366.53	105090
WELTHA, CLAYTON	1566	06/07/2024	1,094.29	105091

Payroll Check Register
Report Summary
Pay Period: 5/20/2024-6/2/2024

Packet: PYPKT00564 - 05/20-06/02/2024 PAID ON 06/07/2024
Payroll Set: CITY OF BONDURANT, IA - 01

Type	Count	Amount
Regular Checks	0	0.00
Manual Checks	0	0.00
Reversals	0	0.00
Voided Checks	0	0.00
Direct Deposits	53	79,561.06
Total	**53**	**79,561.06**

Payroll Check Register
Checks

Pay Period: 12/1/2023-5/31/2024

Packet: PYPKT00563 - SEMI ANNUAL ENDING 12-01-05/31/2024 PAID 06/07/202
Payroll Set: CITY OF BONDURANT, IA - 01

Employee	Employee #	Check Type	Date	Amount	Number
SILLANPAA, MATTHEW D	8121	Regular	06/07/2024	1,383.90	1093

Payroll Check Register
Direct Deposits
Pay Period: 12/1/2023-5/31/2024

Packet: PYPKT00563 - SEMI ANNUAL ENDING 12-01-05/31/2024 PAID 06/07/202
Payroll Set: CITY OF BONDURANT, IA - 01

Employee	Employee #	Date	Amount	Number
BUCKLIN, JEFFERY D	1562	06/07/2024	2,026.43	105092
COX, TARA K	8118	06/07/2024	1,383.90	105093
DRISCOLL, CHAD P	8120	06/07/2024	1,383.90	105094
ELROD, DOUG L	8117	06/07/2024	2,860.06	105095
HAHN, NATHAN D	1521	06/07/2024	312.59	105096
HIGGINS, DAVID P	1407	06/07/2024	385.78	105097
HOFFMAN, JOSHUA MATTHEW	1578	06/07/2024	2,250.09	105098
ISKE, BLAKE	1600	06/07/2024	511.17	105099
KOBER, ANDREW M	1557	06/07/2024	1,839.49	105100
KOBER, MICHAEL J	1540	06/07/2024	337.12	105101
MCFADDEN, AIDAN J	1592	06/07/2024	1,247.87	105102
MCKENZIE, ANGELA LEA	8119	06/07/2024	1,267.67	105103
MEYERES, KYLEIGH	1601	06/07/2024	320.75	105104
PEFFER, BOB L	8115	06/07/2024	807.27	105105
SCHROER, DAVID J	1528	06/07/2024	922.60	105106
SIDWELL, RICHARD A	1560	06/07/2024	277.05	105107
STARUK, JONATHAN B	1595	06/07/2024	353.39	105108
SVOBODA, ZACHARY	1594	06/07/2024	345.79	105109

Payroll Check Register
Report Summary
Pay Period: 12/1/2023-5/31/2024

Packet: PYPKT00563 - SEMI ANNUAL ENDING 12-01-05/31/2024 PAID 06/07/202
Payroll Set: CITY OF BONDURANT, IA - 01

Type	Count	Amount
Regular Checks	1	1,383.90
Manual Checks	0	0.00
Reversals	0	0.00
Voided Checks	0	0.00
Direct Deposits	18	18,832.92
Total	**19**	**20,216.82**

Refund Check Register

Refund Check Detail

UBPKT05446 - Refunds 01 UBPKT05444 Regular

Account	Name	Date	Check #	Amount	Code	Receipt	Amount	Type
01-01652-03	STEFANI, NICHOLAS	6/4/2024	63741	90.74			90.74	Generated From Billing
01-02116-04	LOMBARD, TARESA B	6/4/2024	63742	67.73			67.73	Generated From Billing
01-02375-13	DALES, BEN P	6/4/2024	63743	94.65			94.65	Generated From Billing
01-02418-13	DARLAND, MATTHEW K	6/4/2024	63744	130.31			130.31	Generated From Billing
01-03158-01	JAMES GERMANN	6/4/2024	63745	67.66			67.66	Generated From Billing
01-03600-03	ALLEN, DAVID AND ANN	6/4/2024	63746	119.38			119.38	Generated From Billing
04-03429-03	CAMPBELL, CRAIG	6/4/2024	63747	123.72			123.72	Generated From Billing
04-03455-05	MELING, NICHOLAS R	6/4/2024	63748	92.13			92.13	Generated From Billing
05-02583-01	DEBI BOYLAN	6/4/2024	63749	60.42			60.42	Generated From Billing
09-03228-05	METHFESSEL, WESLEY R	6/4/2024	63750	55.53			55.53	Generated From Billing
10-02811-05	ARRAH, CATHERINE	6/4/2024	63751	85.51			85.51	Generated From Billing
10-02867-02	JENNIFER HOPKINS	6/4/2024	63752	65.06			65.06	Generated From Billing
11-03032-02	WYATT & BRITTANY HANUS	6/4/2024	63753	0.18			0.18	Generated From Billing
16-01564-03	COOK, ANNA R	6/4/2024	63754	71.80			71.80	Generated From Billing
16-01624-04	KAGO, ESTHER W	6/4/2024	63755	106.37			106.37	Generated From Billing
16-01648-02	L & A CONCRETE LLC	6/4/2024	63756	103.47			103.47	Generated From Billing
16-01773-00	HAPPE HOMES	6/4/2024	63757	115.93			115.93	Generated From Billing
16-01801-00	GREENLAND HOMES	6/4/2024	63758	114.19			114.19	Generated From Billing
16-01851-02	COLE, TRACY L	6/4/2024	63759	116.79			116.79	Generated From Billing
16-01969-00	D R HORTON - IOWA LLC	6/4/2024	63760	120.25			120.25	Generated From Billing
16-01977-00	BERKEY HOMEBUILDERS, INC	6/4/2024	63761	108.12			108.12	Generated From Billing
Total Refunds: 21			**Total Refunded Amount:**	1,909.94				

Revenue Code Summary

Revenue Code	Amount
996 - UNAPPLIED CREDITS	1909.94
Revenue Total:	1909.94

General Ledger Distribution

Posting Date: 06/03/2024

Account Number	Account Name	Posting Amount	IFT
Fund: 600 - WATER			
600-000-1101	CLAIM ON POOLED CASH	-1,909.94	Yes

Account Number	Account Name		Posting Amount	IFT
600-050-2141	APPLIED CREDITS		1,909.94	
		600 Total:	0.00	
Fund: 999 - POOLED CASH				
999-000-1100	POOLED CASH		-1,909.94	
999-050-2300	DUE TO OTHER FUNDS		1,909.94	Yes
		999 Total:	0.00	
		Distribution Total:	0.00	

Tax Abatement Applications
June 17, 2024
City of Bondurant

Name	Address	Closing Date	Cost
Christina & Matthew Waterman	100 13th Street, NW	5/31/2022	$340,400

IOWA
Department of Revenue

Iowa Retail Permit Application for Cigarette/Tobacco/Nicotine/Vapor

tax.iowa.gov

Additional instructions are on the final page.

For period (MM/DD/YYYY) 7 / 1 / 24 through 06/30/ 25

Use this form to apply for a retail permit to sell cigarettes, tobacco, alternative nicotine, or vapor products at retail. If you need a different, non-retail cigarette or tobacco permit, use form 70-015. If approved, the permit is only valid for the location listed on the permit. You must obtain a separate retail permit for each location you own or operate.

Business Information:

Legal name/Doing business as (DBA): Git-N-Go Convenience Store #41

Iowa sales and use tax account number: 1-77-113619

Retail address: 3207 Henry St. City: Bondurant State: IA ZIP: 50035

Mailing address: 2716 Indianola Ave City: Des Moines State: IA ZIP: 50315

Phone: 515-967-5217

Legal Ownership Information:

Type of ownership: Sole Proprietor ☐ Partnership ☐ Corporation ☒ LLC ☐ LLP ☐

Name of sole proprietor, partnership, corporation, LLC, or LLP: Git-N-Go Convenience Stores Inc

Primary office address: 2716 Indianola Ave City: Des Moines State: IA ZIP: 50315

Phone: 515-288-8565 Fax: 515-288-0331 Email: offmanagergng@outlook.com

Retail Information:

Types of Sales: Over-the-counter ☒ Vending machine ☐ Vending machine that assembles cigarettes ☐ Delivery sales of alternative nicotine/vapor products (see instructions) ☐
Mobile sales (see instructions) ☐ VIN: _____ License plate number: _____

Types of Products Sold: (Check all that apply)
Cigarettes ☒ Tobacco ☒ Alternative nicotine products ☒ Vapor products ☒

Type of Establishment: (Select the options that best describe the establishment)

Alternative nicotine/vapor store ☐ Bar ☐ Convenience store/gas station ☒ Drug store ☐
Grocery store ☐ Hotel/motel ☐ Liquor store ☐ Restaurant ☐ Tobacco store ☐
Other (provide description) ☐ _____

Do you have other permits issued under Iowa Code chapter 453A at this retail location? If yes, provide permit number(s):
no

Do you intend to make retail sales to ultimate consumers? Yes ☒ No ☐

Include with this application a list of your suppliers of cigarettes, tobacco, alternative nicotine and vapor products on a separate sheet.

Identify partners or corporate officers (up to three) if the business is not a sole proprietorship.

Name: Dennis Flora Title: President
Address: 2716 Indianola Ave
City: Des Moines State: IA ZIP: 50315
Name: _____ Title: _____

Address: _____

City: _____ State: _____ ZIP: _____

Name: _____ Title: _____

Address: _____

City: _____ State: _____ ZIP: _____

If this application is approved and a permit is granted, I/we do hereby bind ourselves to a faithful observance of the laws governing the sale of cigarettes, tobacco, alternative nicotine, and vapor products.

Signature of Authorized Party

I, the undersigned, declare under penalties of perjury or false certificate, that I have examined this application, and to the best of my knowledge and belief, it is true, correct, and complete. I declare that I am authorized to act on behalf of the taxpayer, and will only act within my authority.

Printed Name/Title: Dawn Brickman, Office Manager

Authorized Signature: Dawn Brickman

Date: 5/14/24 Email: offmanagergng@outlook.com

Send this completed application and the applicable fee to your local jurisdiction. If your local jurisdiction permits electronic transmission of this application, your email or fax signature will constitute a valid signature. It is up to your local jurisdiction to approve this application and issue the permit. You must have an approved permit issued to you by the local jurisdiction before acting as a retailer in that jurisdiction. You must separately apply in each local jurisdiction in which you plan to act as a retailer. If you have any questions about the status of your application, contact your city clerk (within city limits) or your county auditor (outside city limits). NOTE: A completed application is NOT a valid permit even if submitted to your local jurisdiction with the applicable fee.

FOR CITY CLERK/COUNTY AUDITOR ONLY – MUST BE COMPLETE

- Fill in the amount paid for the permit: _____
- Fill in the date the permit was approved by the council or board: _____
- Fill in the permit number issued by the city/county: _____
- Fill in the name of the city or county issuing the permit: _____
- New ☐ Renewal ☐

Send completed/approved application to the Iowa Department of Revenue within 30 days of issuance. Make sure the information on the application is complete and accurate. A copy of the permit does not need to be sent; only the application is required. If a permit is being exchanged due to change of location within the same jurisdiction, permittee should complete an application with new location information and application should be sent to the Department as described above. Permittees who exchange a valid permit are not required to pay an additional fee when an exchange application is submitted. It is preferred that applications are sent via email, as this allows for a receipt confirmation to be sent to the local authority.

- Email: iapledge@iowaabd.com
- Fax: 515-281-7375

Git-n-Go Convenience Stores, Inc. **63336**

VENDOR NO: 685 NAME: CITY OF BONDURANT CHECK DATE: 05/31/2024

REFERENCE	INV DATE	INV DESCRIPTION	GROSS AMOUNT	DISCOUNT TAKEN	NET AMOUNT PAID
MAY2024-41	05/31/2024		75.00	0.00	75.00
		TOTAL >	75.00	0.00	75.00

RECEIVED
JUN 0 1 2024
CITY OF BONDURANT

DOCUMENT IS PRINTED ON CHEMICALLY REACTIVE PAPER - THE BACK OF THIS DOCUMENT INCLUDES A TAMPER EVIDENT CHEMICAL WASH WARNING BOX

THE BACK OF THIS DOCUMENT INCLUDES MICROPRINTED ENDORSEMENT LINES

ORIGINAL DOCUMENT HAS RED KEYHOLE ICON THAT DISAPPEARS WITH HEAT

Git-n-Go Convenience Stores, Inc.
2716 Indianola Avenue
Des Moines, Iowa 50315-2399
515-288-8565

US Bank
Des Moines, N.A.
Des Moines, Iowa 50304
33-54/730

63336

DATE: 05/31/2024

PAY ONLY 75 00 CENTS

$75.00

PAY Seventy-Five and 00/100 Dollars

TO THE ORDER OF
CITY OF BONDURANT
200 SECOND ST NE
BONDURANT, IA 50035

Dawn Brickman

HEAT SENSITIVE

⑈063336⑈ ⑆073000545⑆ 179 671 3⑈

IOWA
Department of Revenue

Iowa Retail Permit Application for Cigarette/Tobacco/Nicotine/Vapor

tax.iowa.gov

Additional instructions are on the final page.

For period (MM/DD/YYYY) 06 / 30 / 24 through 06/30/2025

Use this form to apply for a retail permit to sell cigarettes, tobacco, alternative nicotine, or vapor products at retail. If you need a different, non-retail cigarette or tobacco permit, use form 70-015. If approved, the permit is only valid for the location listed on the permit. You must obtain a separate retail permit for each location you own or operate.

Business Information:

Legal name/Doing business as (DBA): E Z Mart LLC

Iowa sales and use tax account number: 1-77-118228

Retail address: 1111 Lincoln St S.E City: Bondurant State: IA ZIP: 50035

Mailing address: P.O Box 157 City: Bondurant State: IA ZIP: 50035

Phone: 515-967-1900

Legal Ownership Information:

Type of ownership: Sole Proprietor ☐ Partnership ☐ Corporation ☐ LLC ☒ LLP ☐

Name of sole proprietor, partnership, corporation, LLC, or LLP:

Primary office address: Same As above City: State: ZIP:

Phone: 515-490-3290 Fax: Email: BP.EZmart@gmail.com

Retail Information:

Types of Sales: Over-the-counter ☒ Vending machine ☐ Vending machine that assembles cigarettes ☐ Delivery sales of alternative nicotine/vapor products (see instructions) ☐
Mobile sales (see instructions) ☐ VIN: License plate number:

Types of Products Sold: (Check all that apply)
Cigarettes ☒ Tobacco ☒ Alternative nicotine products ☒ Vapor products ☒

Type of Establishment: (Select the options that best describe the establishment)

Alternative nicotine/vapor store ☐ Bar ☐ Convenience store/gas station ☒ Drug store ☐
Grocery store ☐ Hotel/motel ☐ Liquor store ☐ Restaurant ☐ Tobacco store ☐
Other (provide description) ☐

Do you have other permits issued under Iowa Code chapter 453A at this retail location? If yes, provide permit number(s):

Do you intend to make retail sales to ultimate consumers? Yes ☐ No ☑

Include with this application a list of your suppliers of cigarettes, tobacco, alternative nicotine and vapor products on a separate sheet.

Identify partners or corporate officers (up to three) if the business is not a sole proprietorship.

Name: Gurmeet Kaur Title: Owner
Address: 4421 N.E 45th Ct
City: ~~Bondurant~~ ~~IA~~ Ankeny State: IA ZIP: 50021
Name: Title:

Address: _____

City: _____ State: _____ ZIP: _____

Name: _____ Title: _____

Address: _____

City: _____ State: _____ ZIP: _____

If this application is approved and a permit is granted, I/we do hereby bind ourselves to a faithful observance of the laws governing the sale of cigarettes, tobacco, alternative nicotine, and vapor products.

Signature of Authorized Party

I, the undersigned, declare under penalties of perjury or false certificate, that I have examined this application, and to the best of my knowledge and belief, it is true, correct, and complete. I declare that I am authorized to act on behalf of the taxpayer, and will only act within my authority.

Printed Name/Title: GURMEET KAUR

Authorized Signature: Gurmeet Kaur

Date: 6-06-2024 Email: _____

Send this completed application and the applicable fee to your local jurisdiction. If your local jurisdiction permits electronic transmission of this application, your email or fax signature will constitute a valid signature. It is up to your local jurisdiction to approve this application and issue the permit. You must have an approved permit issued to you by the local jurisdiction before acting as a retailer in that jurisdiction. You must separately apply in each local jurisdiction in which you plan to act as a retailer. If you have any questions about the status of your application, contact your city clerk (within city limits) or your county auditor (outside city limits). NOTE: A completed application is NOT a valid permit even if submitted to your local jurisdiction with the applicable fee.

FOR CITY CLERK/COUNTY AUDITOR ONLY – MUST BE COMPLETE

- Fill in the amount paid for the permit: _____
- Fill in the date the permit was approved by the council or board: _____
- Fill in the permit number issued by the city/county: _____
- Fill in the name of the city or county issuing the permit: _____
- New ☐ Renewal ☐

Send completed/approved application to the Iowa Department of Revenue within 30 days of issuance. Make sure the information on the application is complete and accurate. A copy of the permit does not need to be sent; only the application is required. If a permit is being exchanged due to change of location within the same jurisdiction, permittee should complete an application with new location information and application should be sent to the Department as described above. Permittees who exchange a valid permit are not required to pay an additional fee when an exchange application is submitted. It is preferred that applications are sent via email, as this allows for a receipt confirmation to be sent to the local authority.

- Email: iapledge@iowaabd.com
- Fax: 515-281-7375

Iowa Retail Permit Application for Cigarette/Tobacco/Nicotine/Vapor Instructions

General Instructions

- Complete all applicable fields. A permit will not be issued until this application is properly completed and has been approved by your local jurisdiction or the Iowa Department of Revenue.
- Fill in the month, day, and years that this application covers.
- All permits expire annually on June 30.
- A new application must be submitted every year.

Business Information

- Fill in the legal name/DBA name of the business.
- Fill in the 9-digit Iowa sales and use tax permit number.
- Fill in the retail location address, city, and ZIP code. This is the address that will appear on the permit, if approved. If you are making mobile sales (see below for further instructions), use this line to report the address of the location from which your vehicle will be dispatched.
- Fill in the mailing address or PO Box, city, state, and ZIP code.
- Fill in the 10-digit phone number of the business.

Legal Ownership Information

- Check the ownership type of the business.
- Fill in the name(s) of the sole proprietor, partnership, the corporation, the LLC, or the LLP that owns the business. This is not the store manager or the corporate president. Do not fill in the name of an individual unless the type of ownership is sole proprietor.
- Fill in the address, city, state, and ZIP code of the business' primary office.
- Fill in the 10-digit phone number, fax number, and email address of the legal owner.

Retail Information

- Check the box for the type of sales the business will make.
- If you will make mobile retail sales, include the vehicle identification number (VIN) and license plate number for the vehicle from which sales will be made. NOTE: Each vehicle is a separate retail location. If you plan to make retail sales from more than one vehicle, you must complete a separate application for each vehicle from which retail sales will be made.
- Check the types of products sold at the business.
- Check the box that best describes the type of business establishment.
- Print the name of the sole proprietor, the partner(s), or corporate officials (up to three).
- Sign and date the application. The application must be signed by an authorized party.
- Return this application and fee to your local jurisdiction: city clerk (within city limits) or county auditor (outside of city limits).

Permit Fees

- The price of a retail permit depends on the location of the business and the month issued

Location	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun
Outside of city limits	$50.00	$37.50	$25.00	$12.50
City of less than 15,000	$75.00	$56.25	$37.50	$18.75
City of 15,000 or more	$100.00	$75.00	$50.00	$25.00

For City Clerk/County Auditor Only

Send completed/approved applications within 30 days of issuance to iapledge@iowaabd.com or by fax to 515-281-7375.

Visit the Iowa Department of Revenue at tax.iowa.gov for information regarding minimum price, a list of approved brands, a list of licensed distributors, and answers to frequently asked questions.

Anna Johnson

From: noreply@incode.tylerhosting.cloud
Sent: Thursday, June 06, 2024 4:02 PM
To: Anna Johnson
Subject: Receipt #R00099811

DATE : 6/6/2024 4:00 PM
OPER : AJONHSON
TKBY : AJONHSON
TERM : 6
REC# : R00099811
PSREV6 CIGARETTE PERMIT
EZ MART CIG AND TOB PERMIT 75.00
CIGARETTE PERMIT FEES 75.00
001-199-1-4105 -75.00

Paid By:EZ MART CIG AND TOB PERMIT
Check 75.00 REF:239755

Special Event Packet

Special Event Permit—Guidelines and Requirements

As an individual or organization requesting use of City of Bondurant public property or right-of-way for a special event, you have basic responsibilities to fulfill in order to conduct your event with the approval of the City of Bondurant. The public property may include the use of the streets, trail system, or parkland. Receiving approval from the City of Bondurant does not preclude responsibility for any additional permits or approvals by the City or related to state and federal regulations. The City reserves the right to impose special guidelines and restrictions based on the nature of the proposed event and its attendant circumstances.

The City of Bondurant will determine whether an event is classified as a Special Event if outside of the description stated. The following general guidelines and responsibilities apply to activities such as parades, runs/walks, athletic events, street fairs, outdoor concerts, block parties, bicycling events, and/or fundraisers.

A. Upon issuance of the Special Events Permit, the applicant must comply with insurance provisions requiring a certificate of Insurance naming the City of Bondurant and its officials, agents, employees, and board members as a co-insured in the following amounts: General Liability and Dram Shop Insurance (if serving alcohol) coverage in an amount not less than $1,000,000 per occurrence. Please note that insurance requirements are waived for neighborhood-based block parties.

B. The application must include a **map of the specific area** to be used or route to travel. The map must delineate the City property to be used (Streets/Sidewalks/Trails/Parks, etc.) start and finish points and direction of flow, if applicable, as well as location(s) of outdoor toilet, trash receptacles, street barricades, and liquor dispensing area(s), if any.

C. The applicant must comply with all federal, state, county, and city laws; ordinances and regulations including all regulations adopted and established by the city.

D. The applicant must assume extra costs, if applicable, associated with public safety and sanitation at the level of service required by the City of Bondurant. This includes the number and type of barricades, number of portable toilets and trash receptacles, and the number and hours of police/security officers or other city staff as required.

E. If alcoholic beverages are to be sold or an entrance or admission is charged for an event at which alcoholic beverages will be served, a Liquor Permit and Dram Shop Insurance will be required. This permit, which is not included in the application for the Special Event Permit, requires consideration and approval by the Bondurant City Council and, in most instances, requires approval by the State of Iowa.

F. If the event is held in a secured area, allowance must be made for access for fire emergencies including a minimum of two (2) exits. Events held on public streets must include an allowance for a continuous, through traffic lane for use by public safety personnel in an emergency. Council approval and type III barricades are always required for any street closure. The barricades must be sufficient as to completely close the street or roadway but yet be easily and quickly removable solely for emergency vehicle access.

G. The use of a tent more than 200 square feet (enclosed) or canopy style (open on three sides) of more than 400 square feet require proof of the retardancy from the manufacturer or supplier as well as the proposed location and intended use of the tent.

H. Signage for the event must adhere to the City's Sign Ordinance. Compliance may require a sign permit, issued by the Planning and Development Department.

I. City Code section 53.03 for commercially zoned areas states the music end time is 12:00 midnight Sunday-Thursday and 2:00 AM Friday and Saturday. For residentially zoned areas the music end time is 10:00 PM Sunday-Thursday and 12:00 midnight Friday and Saturday. If the event will utilize amplified sound a noise permit will be needed. As indicated above, the cost of the permit, issued by the City Clerk must be included in the application fee for the Special Event Permit.

J. Any valid complaint of disturbance of the peace will result in a warning and if it continues, it shall be reason to terminate the event/block party.

K. The following number of portable toilets is required in accordance with estimated event attendance: For events with alcohol, one portable toilet for every 150 people and for events without alcohol, or one portable toilet for every 250 people.

L. The applicant must utilize police/security officers if recommended by the City or Polk County Sherriff Office. When alcohol is available at the event, the applicant must comply with the recommendations. In some instances off-duty officers may be hired; contact the Polk County Sherriff's office for details.

M. The applicant must propose a plan to address sanitation/garbage collection for the event.

N. If the event requires the closure of public streets, a separate page will need to list all property owners impacted by the street closure with their printed name, signature, and address. All property owners in the immediate affected area to be blocked off shall be notified in advance of the street closure.

O. Depending on the estimated event attendance consider contracting emergency medical services to be prepared in case of a medical emergency.

Special Event Application

Please complete this form and submit along with applicable fees to the City Clerk's Office, 200 2nd St NE, Bondurant, IA 50035 at least 30 days prior to proposed event. If you need additional space to describe your event, please attach additional pages to this application. Advertising your event prior to receiving a signed Special Event Application is discouraged.

(Please Print)

Event Name Bondurant Sidewalk Chalk Festival **Date(s) of Event** 7/13/2024

Location Bondurant Regional Trailhead

(Applicants must attach a map of the event layout that includes details like tent locations, portable restroom locations, sound stage, etc.)

Setup Time 7 a.m. **Starting Time** 9 a.m. **Ending Time** 3-4 p.m.

(Please Print)

Organization Hosting Event Bondurant Community Foundation

Contact Person Laura McNichols **Day Phone** 515-554-7444

Email lemcnichols@icloud.com

Addl. Contact Jen Keeler **Day Phone** 515-745-4412

Email bjak3@mac.com

Type of Event:

Check all that apply.

- ☐ Parade
- ☐ Fundraiser
- ☐ Walk/Run Event
- ■ Fair/Festival
- ☐ Outdoor Concert
- ☐ Block Party
- ☐ Bicycle Event
- ☐ Other (please explain) _____

Describe the Event (please attach additional pages if necessary): See attached.

City Properties: Trailhead/The Depot | Lake Petocka | City Park | BRSC

Event Details:
(provide estimated counts)

Estimated Attendance	200
Trash Containers	2
Portable Toilets	0

(circle what applies)

Open to the general public?	YES / NO
Tents	YES / NO
Inflatable Houses/Toys	YES / NO
Amplified Music	YES / NO
Alcoholic Beverages	YES / NO
Banners/Signs	YES / NO

Vendors:
(provide estimated counts)

Individual food and beverage vendors must obtain a *Temporary Event License* from the *Iowa Department of Inspections and Appeals*. The Event organizer will be responsible for this information. Failure to do so may result in fines or closing of the vendor.

- Number of Vendors 10-15
- List of Vendors and/or Type of Vendor

Vendors are still TBD - most vendors are part of the Farmer's Market.

- Permits for *Mobile Food Vendors* are required for food truck vendors per City Ordinance (Chapter 125). Current application and license must be on display in the Mobile Food Unit.
- Banners/Signs may be placed along roadways to guide people to your event, but in no way may be affixed to trees, street signs, park signs or City buildings. Signs are to be removed immediately following event. Grounds markings are allowed, however spray paint is prohibited—chalk or signage would be more appropriate. Failure to do so will result in maintenance fees and/or fines according to littering ordinances.
- Trash and debris cleanup: depending on the event attendance, a dumpster may be required. Park trash cans are for daily park users. Event attendance over 75 will required additional trash cans. Metro Waste Authority offers Event Recycling Stands that should be considered.

Special Provisions: (city provided—for example: trash containers, barricades, etc.)

Is there any special assistance that you will need the City to provide?

☑ Yes ☐ No

Will you need to borrow barricades from the City? ☑ Yes ☐ No

(This is available for not-for-profit organizations and residents. Businesses must provide their own barricades. **If yes, indicate on your event layout map the location of the barricades**. Barricades will be dropped onsite during business hours and picked up at the same location after the event. The street shall be opened for vehicular traffic no later than the concluding time of the event. The Special Event applicant is responsible and will be billed for all damages or lost barricades. The fee for damaged or lost barricades may be up to $300.)

Will you need to close the street for your event? ☐ Yes ☑ No

(Closure of all streets require City Council approval. If yes, indicate on your event layout map the location of the street closures and obtain signature from all property owner impacted by the street closure.)

Will you need portable restrooms? ☐ Yes ■ No

(See required amount enclosed in the application guidelines on pg. 2. If yes, they are at your expense.)

Provide details about the event garbage collection plans: Coordinate with City staff in conjunction with Blues

Will you charge admission / registration fees: ☐ Yes ■ No

If yes, is this for profit or not for profit? _____ A special event application fee may apply.

Will there be product for sale on site? ■ Yes ■ No

(If yes, product liability insurance may be required for sales of food and drinks. Please contact the Polk County Health Department for details.)

Will alcohol be served or sold? ☐ Yes ■ No

A liquor permit and Dram Shop Insurance are required for the sale of alcohol to the public during any event (required whether an admission fee is charged or not). City Council approval is required for the sale or service of alcohol. If alcohol is served, additional security may be required. Off-duty Polk County Sherriff deputies may be hired to provide additional security. Contact Polk County Sherriff Office at 515-286-3333.

Will you be using outdoor tents great than 200 square feet? ☐ Yes ■ No
Will you be using an outdoor canopy greater than 400 square feet? ☐ Yes ☑ No

Will you be using inflatable rides or devices? ☐ Yes ■ No
(If yes, location of the inflatable must be shown on the event layout map that must be submitted with this application.)

Will your event interfere with vehicle traffic? ☐ Yes ■ No
(If yes, provide a map of the route and how traffic control will be administered. Contact Polk County Sherriff Office for traffic/crowd safety 515-286-3333)

Will your event require a first aid booth, fire/rescue units present during the event?
☐ Yes ■ No

Will you be shooting off fireworks? ☐ Yes ■ No
(If yes, a fireworks permit is required. Contac the City Clerk's office at 515-630-6983)

Will you be posting temporary signage? ■ Yes ☐ No
(If yes, a temporary sign permit and fee may be required. Contact the Planning and Development Department at 515-630-6985. Also, please indicate on your event layout map the location of the signs.)

Will you need access to a water source? ☐ Yes ■ No
(Additional charges may apply. If yes, what is the water to be used for?) _____

Will you be using amplified sound? ☐ Yes ■ No
(If yes, a $20 fee for a day or less or $40 for more than a day is required at the time this application is submitted in order to obtain a noise permit)

Provide a description of the sound equipment that will be used during the event: _____

_____

Will you need access to electricity? ☐ Yes ■ No
(If yes, please explain. Additional fees may apply) _____
Electricity is limited and in most cases will need to be provided by the applicant.

I hereby certify the included statements are true and correct, to the best of my knowledge, and that false statement(s) may be grounds for denial of this application. It is understood that activities at all times during the event shall comply with all applicable City ordinances. It is further understood the individual and the organization or association will be responsible for any and all damages arising as a result of this event, and, if this application is approved by the City, the applicant shall be required to execute a Special Event Permit—Hold Harmless Agreement waiving any and all claims which the applicant may have as a result of this event against the City of Bondurant, Iowa, its officials, agents, employees, or board members. It is further understood a certificate of public liability insurance will be required before conducting the proposed event.

An event for which a Permit has either not been obtained or which is in violation occurs will be subject to a municipal infraction up to $750.

I have read the Special Event Application guidelines and requirement for issuance of the permit. I understand the conditions under which it is issued and agree to comply with these conditions for this event. I, or the organization I represent, have met or will meet all requirements established by the City. Further, I understand that if all requirements are not met, the Special Event Permit can be canceled by the City at any time including at the state of or during the event. If this event is sponsored by an organization, I hereby certify I have the legal authority to represent the applicant and/or the participants. It is further understood the City of Bondurant has the authority to grant or deny permission for this event.

Signature _____

Date 6/5/2024

Printed Name Laura McNichols

City Official Signature _____Date _____

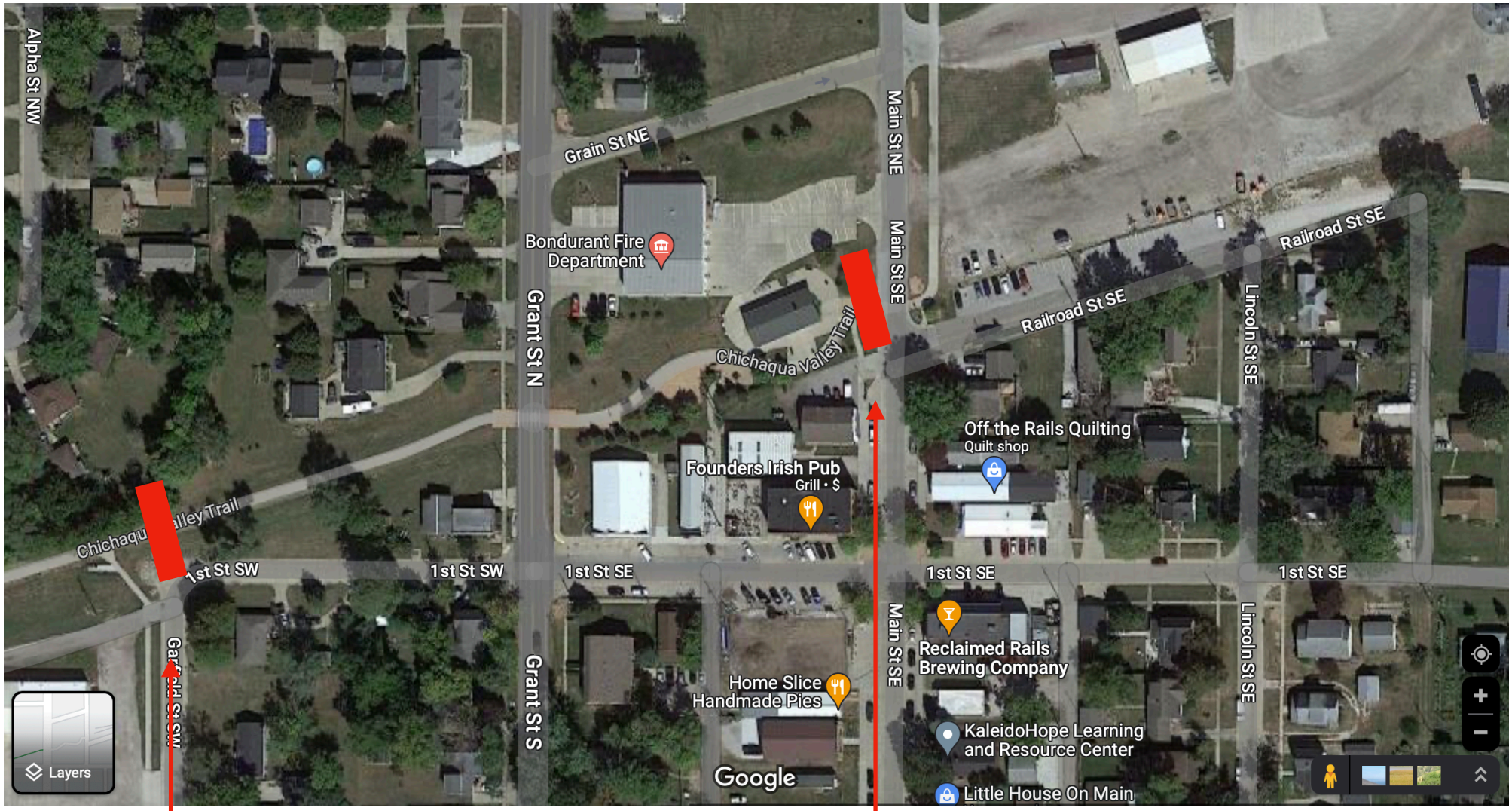
The Privacy Act of 1974 requires that each individual asked or required to furnish personal information be advised of the following: Authority: 5 P.L. 93-579
Purpose: To provide a contact in connection with permit activities.
Routine Uses: Permit is issued under the direction of the City Administrator. The names and address of those who obtain the permit are not reported, but are kept on file at the City of Bondurant to provide point of contact in case of emergency.

Check List and Fee Table to Calculate your application fee:
(no charge for not for profits, schools, and/or school organizations and city/county and/or city/county organizations)

☐ Noise Permit Fee	$20/a day or less $40/more than a day		**Please make check payable to The City of Bondurant.**
☐ Temporary Sign Permit Fee	$10/ 30 days		
☑ Certificate of Insurance with City names as additional insured		n/c	
☑ Map of event area layout			
☐ List of signatures and addresses of the impacted households by a street closure			
TOTAL DUE WITH APPLICATION		$0	

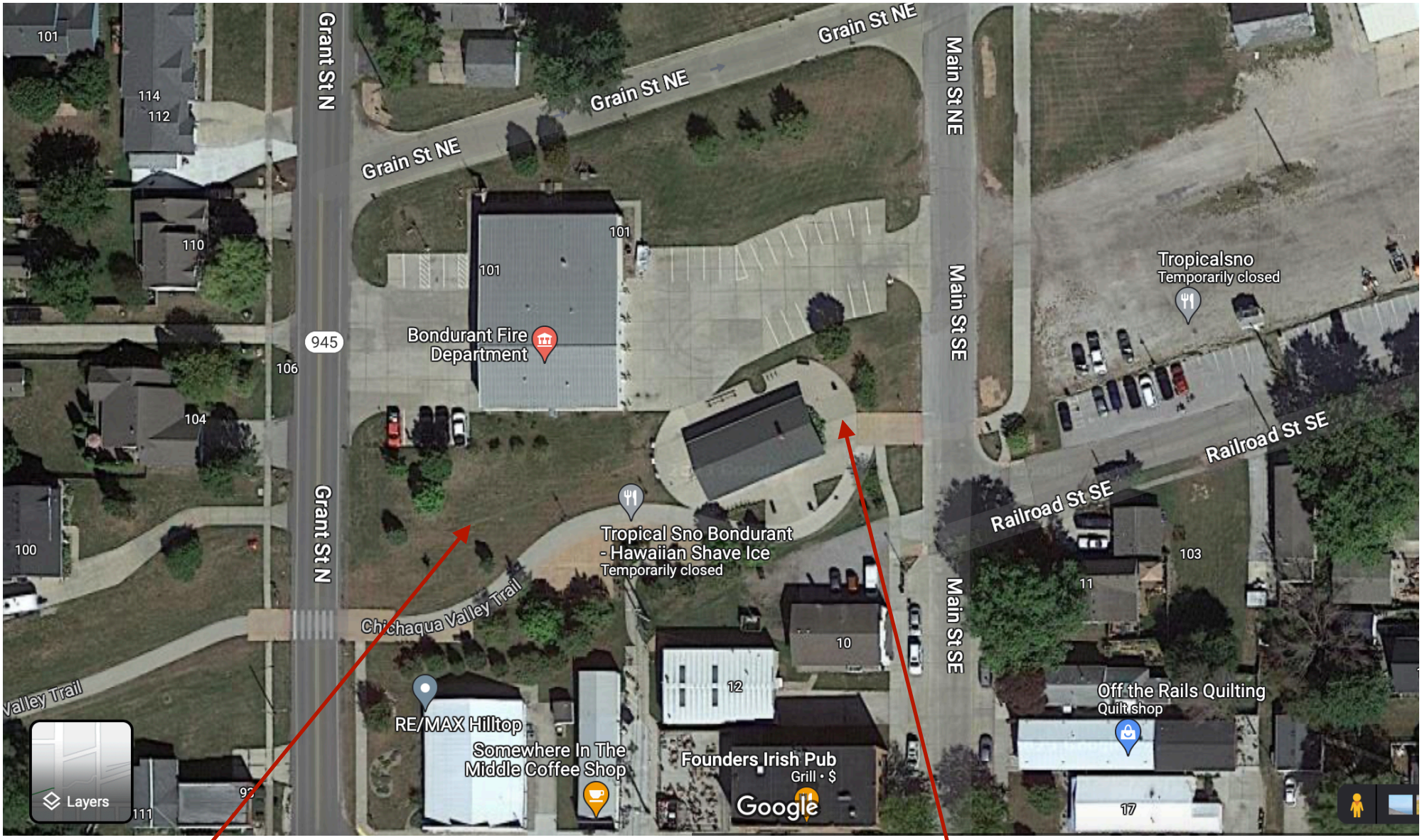
Describe the event:

The Bondurant Community Foundation will host a Sidewalk Chalk Festival at Bondurant Regional Trailhead in conjunction with the City of Bondurant's Bondu Blues & Brews Festival. Throughout the day, artists of all ages and abilities are invited to create artwork on sections of the sidewalk. There are three age categories, with prizes being awarded during the Bondu Blues & Brews Festival later in the evening. Additionally this year, vendors from the Farmer's Market are invited to be a part of the Sidewalk Chalk Festival and setup vendor booths during the event.



Work with City Staff to do the same as last year:
Barricade
Trail Closed Sign
Detour / Re-route

Work with City Staff to do the same as last year:
Barricade
Trail Closed Sign
Detour / Re-route



We will locate vendors in the grass areas and along the trail and around the Depot. Exact locations TBD once vendors and number of vendors are finalized.

Special Event Application

Please complete this form and submit along with applicable fees to the City Clerk's Office, 200 2nd St NE, Bondurant, IA 50035 at least 30 days prior to proposed event. If you need additional space to describe your event, please attach additional pages to this application. Advertising your event prior to receiving a signed Special Event Application is discouraged.

(Please Print)

Event Name 4th Street Neighborhood Street Party **Date(s) of Event** July 3, 2024

Location 4th Street SE

(Applicants must attach a map of the event layout that includes details like tent locations, portable restroom locations, sound stage, etc.)

Setup Time 6:00 PM **Starting Time** 6:30 PM **Ending Time** 11:00 PM

(Please Print)

Organization Hosting Event 4th Street Neighborhood

Contact Person Lincoln Dix **Day Phone** 319-430-3442

Email lincoln_dix@yahoo.com

Addl. Contact Adam Jackson **Day Phone** 641-745-0346

Email _____

Type of Event:

Check all that apply.

- ☐ Parade
- ☐ Fundraiser
- ☐ Walk/Run Event
- ☐ Fair/Festival
- ☐ Outdoor Concert
- ■ Block Party
- ☐ Bicycle Event
- ☐ Other (please explain) _____

Describe the Event (please attach additional pages if necessary): 4th of July block party. Pot luck, music, games, and fireworks.

City Properties: Trailhead/The Depot | Lake Petocka | City Park | BRSC

200 Second Street, Northeast | PO Box 37 | Bondurant, Iowa 50035
(515) 967-2418 | (515) 967-5732 Fax | info@cityofbondurant.com
www.cityofbondurant.com

Event Details:
(provide estimated counts)

Estimated Attendance	40
Trash Containers	0
Portable Toilets	0

(circle what applies)

Open to the general public?	YES / NO
Tents	YES / NO
Inflatable Houses/Toys	YES / NO
Amplified Music	YES / NO
Alcoholic Beverages	YES / NO
Banners/Signs	YES / NO

Vendors:
(provide estimated counts)

Individual food and beverage vendors must obtain a *Temporary Event License* from the *Iowa Department of Inspections and Appeals*. The Event organizer will be responsible for this information. Failure to do so may result in fines or closing of the vendor.

- Number of Vendors 0
- List of Vendors and/or Type of Vendor

N/A

- Permits for *Mobile Food Vendors* are required for food truck vendors per City Ordinance (Chapter 125). Current application and license must be on display in the Mobile Food Unit.
- Banners/Signs may be placed along roadways to guide people to your event, but in no way may be affixed to trees, street signs, park signs or City buildings. Signs are to be removed immediately following event. Grounds markings are allowed, however spray paint is prohibited—chalk or signage would be more appropriate. Failure to do so will result in maintenance fees and/or fines according to littering ordinances.
- Trash and debris cleanup: depending on the event attendance, a dumpster may be required. Park trash cans are for daily park users. Event attendance over 75 will required additional trash cans. Metro Waste Authority offers Event Recycling Stands that should be considered.

Special Provisions: (city provided—for example: trash containers, barricades, etc.)

Is there any special assistance that you will need the City to provide?

☐ Yes ☑ No

Will you need to borrow barricades from the City? ☒ Yes ☐ No

(This is available for not-for-profit organizations and residents. Businesses must provide their own barricades. **If yes, indicate on your event layout map the location of the barricades**. Barricades will be dropped onsite during business hours and picked up at the same location after the event. The street shall be opened for vehicular traffic no later than the concluding time of the event. The Special Event applicant is responsible and will be billed for all damages or lost barricades. The fee for damaged or lost barricades may be up to $300.)

Will you need to close the street for your event? ☑ Yes ☐ No

(Closure of all streets require City Council approval. If yes, indicate on your event layout map the location of the street closures and obtain signature from all property owner impacted by the street closure.)

Will you need portable restrooms? ☐ Yes ☒ No

(See required amount enclosed in the application guidelines on pg. 2. If yes, they are at your expense.)

Provide details about the event garbage collection plans: Will use residential garbage cans - wont generate much waste

Will you charge admission / registration fees: ☐ Yes ■ No

If yes, is this for profit or not for profit? N/A A special event application fee may apply.

Will there be product for sale on site? ☐ Yes ■ No

(If yes, product liability insurance may be required for sales of food and drinks. Please contact the Polk County Health Department for details.)

Will alcohol be served or sold? ☐ Yes ■ No

A liquor permit and Dram Shop Insurance are required for the sale of alcohol to the public during any event (required whether an admission fee is charged or not). City Council approval is required for the sale or service of alcohol. If alcohol is served, additional security may be required. Off-duty Polk County Sherriff deputies may be hired to provide additional security. Contact Polk County Sherriff Office at 515-286-3333.

Will you be using outdoor tents great than 200 square feet? ☐ Yes ■ No
Will you be using an outdoor canopy greater than 400 square feet? ☐ Yes ☐ No

Will you be using inflatable rides or devices? ☐ Yes ■ No
(If yes, location of the inflatable must be shown on the event layout map that must be submitted with this application.)

Will your event interfere with vehicle traffic? ☐ Yes ☐ No
(If yes, provide a map of the route and how traffic control will be administered. Contact Polk County Sherriff Office for traffic/crowd safety 515-286-3333)

Will your event require a first aid booth, fire/rescue units present during the event?
☐ Yes ■ No

Will you be shooting off fireworks? ■ Yes ☐ No
(If yes, a fireworks permit is required. Contac the City Clerk's office at 515-630-6983)

Will you be posting temporary signage? ☐ Yes ■ No
(If yes, a temporary sign permit and fee may be required. Contact the Planning and Development Department at 515-630-6985. Also, please indicate on your event layout map the location of the signs.)

Will you need access to a water source? ☐ Yes ■ No
(Additional charges may apply. If yes, what is the water to be used for?) _____

Will you be using amplified sound? ☐ Yes ■ No
(If yes, a $20 fee for a day or less or $40 for more than a day is required at the time this application is submitted in order to obtain a noise permit)

Provide a description of the sound equipment that will be used during the event: Just regular blue tooth speakers - nothing inordinately loud

Will you need access to electricity? ☐ Yes ■ No
(If yes, please explain. Additional fees may apply) _____
Electricity is limited and in most cases will need to be provided by the applicant.

I hereby certify the included statements are true and correct, to the best of my knowledge, and that false statement(s) may be grounds for denial of this application. It is understood that activities at all times during the event shall comply with all applicable City ordinances. It is further understood the individual and the organization or association will be responsible for any and all damages arising as a result of this event, and, if this application is approved by the City, the applicant shall be required to execute a Special Event Permit—Hold Harmless Agreement waiving any and all claims which the applicant may have as a result of this event against the City of Bondurant, Iowa, its officials, agents, employees, or board members. It is further understood a certificate of public liability insurance will be required before conducting the proposed event.

An event for which a Permit has either not been obtained or which is in violation occurs will be subject to a municipal infraction up to $750.

I have read the Special Event Application guidelines and requirement for issuance of the permit. I understand the conditions under which it is issued and agree to comply with these conditions for this event. I, or the organization I represent, have met or will meet all requirements established by the City. Further, I understand that if all requirements are not met, the Special Event Permit can be canceled by the City at any time including at the state of or during the event. If this event is sponsored by an organization, I hereby certify I have the legal authority to represent the applicant and/or the participants. It is further understood the City of Bondurant has the authority to grant or deny permission for this event.

Signature _____

Date 5/27/24

Printed Name Lincoln Dix

City Official Signature _____ Date _____

The Privacy Act of 1974 requires that each individual asked or required to furnish personal information be advised of the following: Authority: 5 P.L. 93-579
Purpose: To provide a contact in connection with permit activities.
Routine Uses: Permit is issued under the direction of the City Administrator. The names and address of those who obtain the permit are not reported, but are kept on file at the City of Bondurant to provide point of contact in case of emergency.

Check List and Fee Table to Calculate your application fee:
(no charge for not for profits, schools, and/or school organizations and city/county and/or city/county organizations)

☐ Noise Permit Fee	$20/a day or less $40/more than a day		**Please make check payable to The City of Bondurant.**
☐ Temporary Sign Permit Fee	$10/ 30 days		
☐ Certificate of Insurance with City names as additional insured		n/c	
☐ Map of event area layout			
☐ List of signatures and addresses of the impacted households by a street closure			
	TOTAL DUE WITH APPLICATION		

Street Closure Request – City of Bondurant

We, the property owners, do hereby acknowledge being notified of the closing of the following streets, as requested, for a Residential Block Party, on July 3, 2024 | 6:00 PM to 11:00 PM.

Street(s) to block off: 4th Street SE

Intersections: 9th Street SE and 4th Street SE

Name:	Address:
Scott Hammond	431 4th St SE
	427
	423
	418
	422 4th St. SE
Libby Sekar	426
Eric Fuhrer	430
Adam Jackson	434
Kelli Daly	427

RE: Application for Special Event / Street Closure - 4th St Block Party

Lincoln Dix <ldix@storeykenworthy.com>
Tue 6/4/2024 3:43 PM
To:Katie Klus <kklus@cityofbondurant.com>

Hi, Katie –

Hopefully this helps.

I marked where the street will be closed and starred where we would intend to light the fireworks.

In the past we have stayed on private property (not in the street) and are 600+ feet away from any adult or child care locations as well as any facility with combustible materials.

Thanks!

LINCOLN DIX | VICE PRESIDENT
(He/Him/His)
O: 515-558-6063 | ldix@storeykenworthy.com

From: Katie Klus <kklus@cityofbondurant.com>
Sent: Tuesday, June 04, 2024 10:43 AM
To: Lincoln Dix <ldix@storeykenworthy.com>
Subject: Re: Application for Special Event / Street Closure - 4th St Block Party

Lincoln,

Could you send on a map of the event layout, specifically where you plan to set off fireworks?

Katie Klus (she/her)
Communications & Events Coordinator
P: 515.630.6982 | F: 515.967.5732
E: kklus@cityofbondurant.com
W: www.cityofbondurant.com
City of Bondurant | 200 2nd St. NE
PO Box 37 | Bondurant, IA 50035

Bondurant
Life Connecting

From: Lincoln Dix <ldix@storeykenworthy.com>
Sent: Sunday, June 2, 2024 3:44 PM
To: Katie Klus <kklus@cityofbondurant.com>
Subject: Application for Special Event / Street Closure - 4th St Block Party

Hi, Katie –

Attached is the application for our neighborhood block party.

I do have the hard copy in case it's required to physically bring it to City Hall.

Thanks,

LINCOLN DIX | VICE PRESIDENT
(He/Him/His)
O: 515-558-6063 | ldix@storeykenworthy.com

From: Katie Klus <kklus@cityofbondurant.com>
Sent: Wednesday, May 29, 2024 12:11 PM
To: Lincoln Dix <ldix@storeykenworthy.com>
Subject: Re: New Communications & Events

Thanks! Anna had thought there was one, but we couldn't find it in Nicole's files. I'll get a new one created and add it to the website.

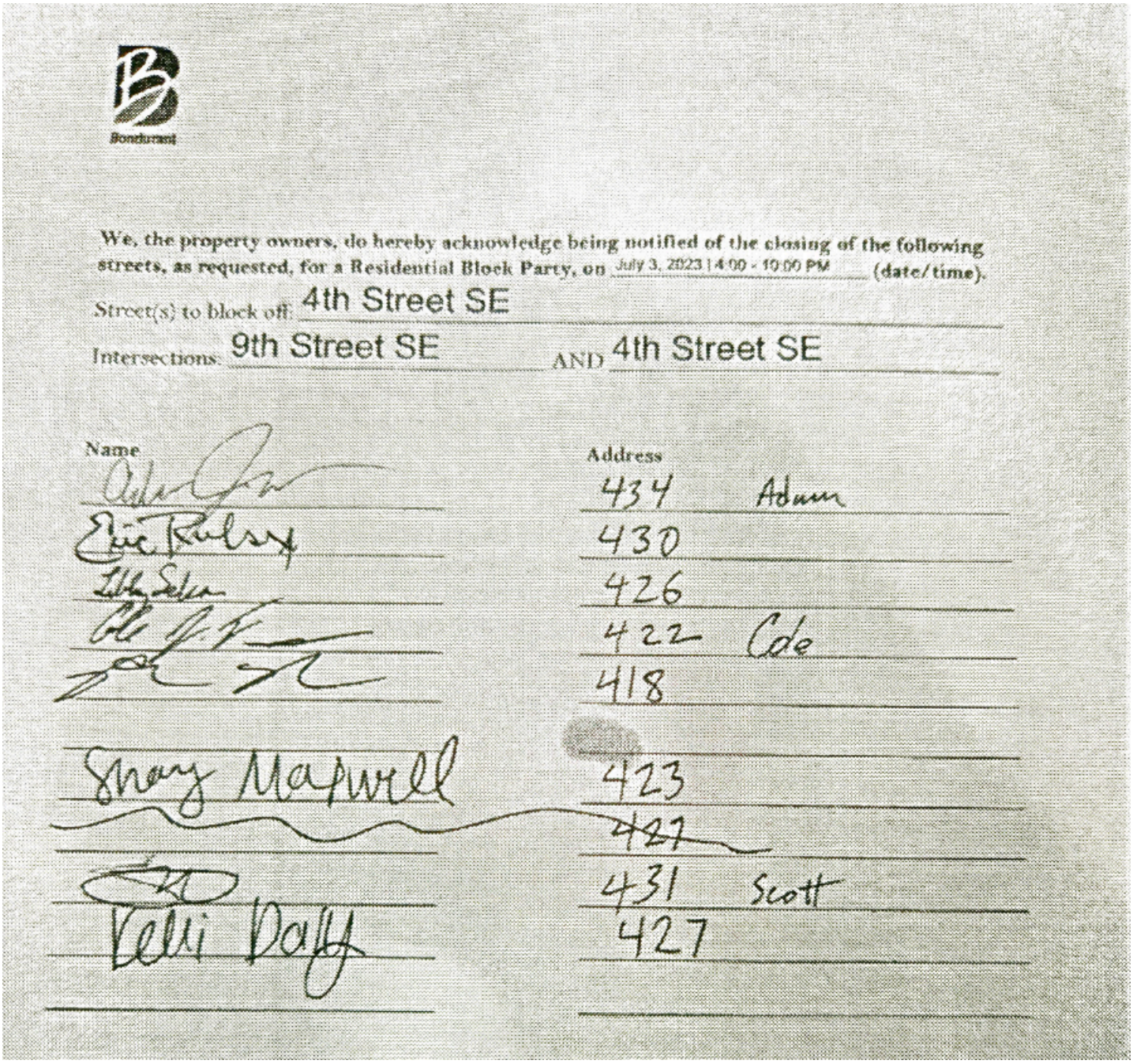
Katie Klus (she/her)
Communications & Events Coordinator
P: 515.630.6982 | F: 515.967.5732
E: kklus@cityofbondurant.com
W: www.cityofbondurant.com
City of Bondurant | 200 2nd St. NE
PO Box 37 | Bondurant, IA 50035

From: Lincoln Dix <ldix@storeykenworthy.com>
Sent: Wednesday, May 29, 2024 11:42 AM
To: Katie Klus <kklus@cityofbondurant.com>
Subject: RE: New Communications & Events

Thanks, Katie…will do.

I did some digging and was able to find this form last year. I will simply replicate this and get signatures from the neighbors.

Thought I'd pass it along to you as a point of reference.



Bondurant

We, the property owners, do hereby acknowledge being notified of the closing of the following streets, as requested, for a Residential Block Party, on July 3, 2023 | 4:00 - 10:00 PM (date/time).

Street(s) to block off: 4th Street SE

Intersections: 9th Street SE AND 4th Street SE

Name	Address
	434 Adam
Eric Ruby	430
Libby Eden	426
	422 Cole
	418
Shary Maxwell	423
	~~427~~
	431 Scott
Debi Daly	427

LINCOLN DIX | VICE PRESIDENT
(He/Him/His)
O: 515-558-6063 | ldix@storeykenworthy.com

From: Katie Klus <kklus@cityofbondurant.com>
Sent: Wednesday, May 29, 2024 10:06 AM
To: Lincoln Dix <ldix@storeykenworthy.com>
Subject: Re: New Communications & Events

There is no official signature page at this time. Please collect them and submit them using a Word/Excel format.

Thanks!

Katie Klus (she/her)
Communications & Events Coordinator
P: 515.630.6982 | F: 515.967.5732
E: kklus@cityofbondurant.com

W: www.cityofbondurant.com
City of Bondurant | 200 2nd St. NE
PO Box 37 | Bondurant, IA 50035

Bondurant
Life Connecting

From: Lincoln Dix <ldix@storeykenworthy.com>
Sent: Tuesday, May 28, 2024 9:15 AM
Cc: Katie Klus <kklus@cityofbondurant.com>
Subject: RE: New Communications & Events

Hi, Katie –

I was able to find the Special Events Form…but not the signature page for a requested street closure. The 4th Street SE neighborhood has an annual block party for the 4th of July and we'll be hosting it on July 3rd this year. We typically close down a very small section of 4th St SE that impacts 6-7 houses. I just need the document so I can go collect their signatures and turn in our paperwork for Council to review and approve.

Thanks,

LINCOLN DIX | VICE PRESIDENT
(He/Him/His)
O: 515-558-6063 | ldix@storeykenworthy.com

From: Shelby Hagan <shagan@cityofbondurant.com>
Sent: Tuesday, May 28, 2024 8:59 AM
To: Lincoln Dix <ldix@storeykenworthy.com>
Cc: Katie Klus <kklus@cityofbondurant.com>
Subject: Re: New Communications & Events

Copied her in!

Get Outlook for iOS

From: Lincoln Dix <ldix@storeykenworthy.com>
Sent: Monday, May 27, 2024 10:09:22 PM
To: Shelby Hagan <shagan@cityofbondurant.com>
Subject: New Communications & Events

Shelby –

Can you shoot me the email of the new C&E Coordinator? Need to get a form for a requested street closure for the 4th of July.

Thanks!

SK
STOREY KENWORTHY

LINCOLN DIX
(He/Him/His)
Vice President
O: 515-558-6063
ldix@storeykenworthy.com

Special Event Application

Please complete this form and submit along with applicable fees to the City Clerk's Office, 200 2nd St NE, Bondurant, IA 50035 at least 30 days prior to proposed event. If you need additional space to describe your event, please attach additional pages to this application. Advertising your event prior to receiving a signed Special Event Application is discouraged.

(Please Print)

Event Name Lincoln St NE 4th of July Party **Date(s) of Event** 7/4/24

Location Lincoln St NE, Bondurant, IA
(Applicants must attach a map of the event layout that includes details like tent locations, portable restroom locations, sound stage, etc.)

Setup Time 4pm **Starting Time** 5pm **Ending Time** 11pm

(Please Print)

Organization Hosting Event Tiffany Luing

Contact Person Tiffany Luing **Day Phone** 515-720-1079

Email tiffegg@hotmail.com

Addl. Contact _____ **Day Phone** _____

Email _____

Type of Event:
Check all that apply.

- ☐ Parade
- ☐ Fundraiser
- ☐ Walk/Run Event
- ☐ Fair/Festival
- ☐ Outdoor Concert
- ■ Block Party
- ☐ Bicycle Event
- ☐ Other (please explain) _____

Describe the Event (please attach additional pages if necessary): 4th of July party. We will block off streets, put out tables, chairs, tents, games, and let off fire works at dusk.

City Properties: Trailhead/The Depot | Lake Petocka | City Park | BRSC

200 Second Street, Northeast | PO Box 37 | Bondurant, Iowa 50035
(515) 967-2418 | (515) 967-5732 Fax | info@cityofbondurant.com
www.cityofbondurant.com

Event Details:
(provide estimated counts)

Estimated Attendance	30-50
Trash Containers	4
Portable Toilets	0

(circle what applies)

Open to the general public?	YES / NO
Tents	YES / NO
Inflatable Houses/Toys	YES / NO
Amplified Music	YES / NO
Alcoholic Beverages	YES / NO
Banners/Signs	YES / NO

Vendors:
(provide estimated counts)

Individual food and beverage vendors must obtain a *Temporary Event License* from the *Iowa Department of Inspections and Appeals*. The Event organizer will be responsible for this information. Failure to do so may result in fines or closing of the vendor.

- Number of Vendors 0
- List of Vendors and/or Type of Vendor

- Permits for *Mobile Food Vendors* are required for food truck vendors per City Ordinance (Chapter 125). Current application and license must be on display in the Mobile Food Unit.
- Banners/Signs may be placed along roadways to guide people to your event, but in no way may be affixed to trees, street signs, park signs or City buildings. Signs are to be removed immediately following event. Grounds markings are allowed, however spray paint is prohibited—chalk or signage would be more appropriate. Failure to do so will result in maintenance fees and/or fines according to littering ordinances.
- Trash and debris cleanup: depending on the event attendance, a dumpster may be required. Park trash cans are for daily park users. Event attendance over 75 will required additional trash cans. Metro Waste Authority offers Event Recycling Stands that should be considered.

Special Provisions: (city provided—for example: trash containers, barricades, etc.)

Is there any special assistance that you will need the City to provide?

☐ Yes ☐ No

Will you need to borrow barricades from the City? ☑ Yes ☐ No

(This is available for not-for-profit organizations and residents. Businesses must provide their own barricades. **If yes, indicate on your event layout map the location of the barricades.** Barricades will be dropped onsite during business hours and picked up at the same location after the event. The street shall be opened for vehicular traffic no later than the concluding time of the event. The Special Event applicant is responsible and will be billed for all damages or lost barricades. The fee for damaged or lost barricades may be up to $300.)

Will you need to close the street for your event? ☑ Yes ☐ No

(Closure of all streets require City Council approval. If yes, indicate on your event layout map the location of the street closures and obtain signature from all property owner impacted by the street closure.)

Will you need portable restrooms? ☐ Yes ■ No

(See required amount enclosed in the application guidelines on pg. 2. If yes, they are at your expense.)

Provide details about the event garbage collection plans: Will put out trash cans for collection.

Will you charge admission / registration fees: ☐ Yes ■ No

If yes, is this for profit or not for profit? _____ A special event application fee may apply.

Will there be product for sale on site? ☐ Yes ■ No

(If yes, product liability insurance may be required for sales of food and drinks. Please contact the Polk County Health Department for details.)

Will alcohol be served or sold? ☐ Yes ■ No

A liquor permit and Dram Shop Insurance are required for the sale of alcohol to the public during any event (required whether an admission fee is charged or not). City Council approval is required for the sale or service of alcohol. If alcohol is served, additional security may be required. Off-duty Polk County Sherriff deputies may be hired to provide additional security. Contact Polk County Sherriff Office at 515-286-3333.

Will you be using outdoor tents great than 200 square feet? ☐ Yes ☐ No
Will you be using an outdoor canopy greater than 400 square feet? ☐ Yes ■ No

Will you be using inflatable rides or devices? ☐ Yes ■ No
(If yes, location of the inflatable must be shown on the event layout map that must be submitted with this application.)

Will your event interfere with vehicle traffic? ■ Yes ☐ No
(If yes, provide a map of the route and how traffic control will be administered. Contact Polk County Sherriff Office for traffic/crowd safety 515-286-3333)

Will your event require a first aid booth, fire/rescue units present during the event?
☐ Yes ■ No

Will you be shooting off fireworks? ■ Yes ☐ No
(If yes, a fireworks permit is required. Contac the City Clerk's office at 515-630-6983)

Will you be posting temporary signage? ☐ Yes ■ No
(If yes, a temporary sign permit and fee may be required. Contact the Planning and Development Department at 515-630-6985. Also, please indicate on your event layout map the location of the signs.)

Will you need access to a water source? ☐ Yes ■ No
(Additional charges may apply. If yes, what is the water to be used for?) _____

Will you be using amplified sound? ☐ Yes ■ No
(If yes, a $20 fee for a day or less or $40 for more than a day is required at the time this application is submitted in order to obtain a noise permit)

Provide a description of the sound equipment that will be used during the event: _____

_____

Will you need access to electricity? ☐ Yes ■ No
(If yes, please explain. Additional fees may apply) _____
Electricity is limited and in most cases will need to be provided by the applicant.

I hereby certify the included statements are true and correct, to the best of my knowledge, and that false statement(s) may be grounds for denial of this application. It is understood that activities at all times during the event shall comply with all applicable City ordinances. It is further understood the individual and the organization or association will be responsible for any and all damages arising as a result of this event, and, if this application is approved by the City, the applicant shall be required to execute a Special Event Permit—Hold Harmless Agreement waiving any and all claims which the applicant may have as a result of this event against the City of Bondurant, Iowa, its officials, agents, employees, or board members. It is further understood a certificate of public liability insurance will be required before conducting the proposed event.

An event for which a Permit has either not been obtained or which is in violation occurs will be subject to a municipal infraction up to $750.

I have read the Special Event Application guidelines and requirement for issuance of the permit. I understand the conditions under which it is issued and agree to comply with these conditions for this event. I, or the organization I represent, have met or will meet all requirements established by the City. Further, I understand that if all requirements are not met, the Special Event Permit can be canceled by the City at any time including at the state of or during the event. If this event is sponsored by an organization, I hereby certify I have the legal authority to represent the applicant and/or the participants. It is further understood the City of Bondurant has the authority to grant or deny permission for this event.

Signature Tiffany Luing

Date 5/21/24

Printed Name Tiffany Luing

City Official Signature _____ Date _____

The Privacy Act of 1974 requires that each individual asked or required to furnish personal information be advised of the following: Authority: 5 P.L. 93-579
Purpose: To provide a contact in connection with permit activities.
Routine Uses: Permit is issued under the direction of the City Administrator. The names and address of those who obtain the permit are not reported, but are kept on file at the City of Bondurant to provide point of contact in case of emergency.

Check List and Fee Table to Calculate your application fee:
(no charge for not for profits, schools, and/or school organizations and city/county and/or city/county organizations)

☐ Noise Permit Fee	$20/a day or less $40/more than a day		**Please make check payable to The City of Bondurant.**
☐ Temporary Sign Permit Fee	$10/ 30 days		
☐ Certificate of Insurance with City names as additional insured		n/c	
☒ Map of event area layout			
☒ List of signatures and addresses of the impacted households by a street closure			
	TOTAL DUE WITH APPLICATION		

204 ASPEN DR NE
208 ASPEN DR NE
212 ASPEN DR NE
214 ASPEN DR NE
302
306 ASPEN DR NE
310 ASPEN DR NE
314 ASPEN DR NE
205 ASPEN DR NE
209 ASPEN DR NE
213 ASPEN DR NE
217 ASPEN DR NE
303 ASPEN DR NE
307 ASPEN DR NE
206 TAILFEATHER DR NE
210 TAILFEATHER DR NE
214 TAILFEATHER DR NE
218
222 TAILFEATHER DR NE
227 TAILFEATHER DR NE
211 TAILFEATHER DR NE
215
219 TAILFEATHER DR NE
223
218 7TH ST NE
222 7TH ST NE
226 7TH ST NE
230 7TH ST NE
234 7TH ST NE
302 7TH ST NE
306 7TH ST NE
310 7TH ST NE
221 7TH ST NE
225 7TH ST NE
229 7TH ST NE
233 7TH ST NE
303 7TH ST NE
307 7TH ST NE
718 LINCOLN ST NE
714
710
710 LINCOLN ST NE
706
702
646 LINCOLN ST NE
646
642
638 LINCOLN ST NE
638
622 LINCOLN ST NE
717 LINCOLN ST NE
713
709
705 LINCOLN ST NE
645
641 LINCOLN ST NE
637
633
629 LINCOLN ST NE
625
621 LINCOLN ST NE

4th of July Block Party scheduled for Lincoln St. NE, Bondurant, Iowa. Barricades will block of streets.

1. 629 Lincoln St NE

   Name: Derek Rodgers

   Signature:

2. 633 Lincoln St NE

   Name: Logan Reese

   Signature:

3. 637 Lincoln St NE

   Name: Brock Pope

   Signature:

4. 641 Lincoln St NE

   Name: Nicole Rundle Ballard

   Signature:

5. 645 Lincoln St NE

   Name: Amanda Cornelius

   Signature:

6. 705 Lincoln St NE

   Name: Tiffany Luing

   Signature:

14. 702 Lincoln St NE

Name:

Signature: Left notice after several ~~notices~~ attempts

15. 706 Lincoln St NE

Name: Angie Thurman

Signature: Angie Thurman

16. 710 Lincoln St NE

Name: Steve Wonderlin

Signature:

17. 714 Lincoln St NE

Name:

Signature: Left notice after several ~~notices~~ attempts

IOWA
Department of Revenue

RECEIVED
JUN 14 2024
CAT OF BOND/PERMIT

Iowa Retail Permit Application for Cigarette/Tobacco/Nicotine/Vapor

tax.iowa.gov

Additional instructions are on the final page.

For period (MM/DD/YYYY) 6 / 19 / 2024 through 06/30/2025

Use this form to apply for a retail permit to sell cigarettes, tobacco, alternative nicotine, or vapor products at retail. If you need a different, non-retail cigarette or tobacco permit, use form 70-015. If approved, the permit is only valid for the location listed on the permit. You must obtain a separate retail permit for each location you own or operate.

Business Information:

Legal name/Doing business as (DBA): World Class liquor and tobacco

Iowa sales and use tax account number: 88-1911051

Retail address: 96 Paine Cir SE, St 1 & 2 City: Bondurant State: IA ZIP: 50035

Mailing address: 1004 Dee St SE City: Bondurant State: IA ZIP: 50035

Phone: 515-357-2737

Legal Ownership Information:

Type of ownership: Sole Proprietor ☐ Partnership ☒ Corporation ☐ LLC ☒ LLP ☐

Name of sole proprietor, partnership, corporation, LLC, or LLP: Royallc

Primary office address: 1004 Dee St SE City: Bondurant State: IA ZIP: 50035

Phone: 515-357-2737 Fax: _____ Email: royallc2022@gmail.com

Retail Information:

Types of Sales: Over-the-counter ☒ Vending machine ☐ Vending machine that assembles cigarettes ☒ Delivery sales of alternative nicotine/vapor products (see instructions) ☐
Mobile sales (see instructions) ☐ VIN: _____ License plate number: _____

Types of Products Sold: (Check all that apply)
Cigarettes ☒ Tobacco ☒ Alternative nicotine products ☒ Vapor products ☒

Type of Establishment: (Select the options that best describe the establishment)

Alternative nicotine/vapor store ☒ Bar ☐ Convenience store/gas station ☐ Drug store ☐
Grocery store ☐ Hotel/motel ☐ Liquor store ☒ Restaurant ☐ Tobacco store ☒
Other (provide description) ☐ _____

Do you have other permits issued under Iowa Code chapter 453A at this retail location? If yes, provide permit number(s):

_____

Do you intend to make retail sales to ultimate consumers? Yes ☐ No ☐

Include with this application a list of your suppliers of cigarettes, tobacco, alternative nicotine and vapor products on a separate sheet.

Identify partners or corporate officers (up to three) if the business is not a sole proprietorship.

Name: _____ Title: _____

Address: _____

City: _____ State: _____ ZIP: _____

Name: _____ Title: _____

Address: _____

City: _____ State: _____ ZIP: _____

Name: _____ Title: _____

Address: _____

City: _____ State: _____ ZIP: _____

If this application is approved and a permit is granted, I/we do hereby bind ourselves to a faithful observance of the laws governing the sale of cigarettes, tobacco, alternative nicotine, and vapor products.

Signature of Authorized Party

I, the undersigned, declare under penalties of perjury or false certificate, that I have examined this application, and to the best of my knowledge and belief, it is true, correct, and complete. I declare that I am authorized to act on behalf of the taxpayer, and will only act within my authority.

Printed Name/Title: Roshan Dahal

Authorized Signature: _____

Date: 8/9/24 Email: royalle2022@gmail.com

Send this completed application and the applicable fee to your local jurisdiction. If your local jurisdiction permits electronic transmission of this application, your email or fax signature will constitute a valid signature. It is up to your local jurisdiction to approve this application and issue the permit. You must have an approved permit issued to you by the local jurisdiction before acting as a retailer in that jurisdiction. You must separately apply in each local jurisdiction in which you plan to act as a retailer. If you have any questions about the status of your application, contact your city clerk (within city limits) or your county auditor (outside city limits). NOTE: A completed application is NOT a valid permit even if submitted to your local jurisdiction with the applicable fee.

FOR CITY CLERK/COUNTY AUDITOR ONLY – MUST BE COMPLETE

- Fill in the amount paid for the permit: _____
- Fill in the date the permit was approved by the council or board: _____
- Fill in the permit number issued by the city/county: _____
- Fill in the name of the city or county issuing the permit: _____
- New ☐ Renewal ☐

Send completed/approved application to the Iowa Department of Revenue within 30 days of issuance. Make sure the information on the application is complete and accurate. A copy of the permit does not need to be sent; only the application is required. If a permit is being exchanged due to change of location within the same jurisdiction, permittee should complete an application with new location information and application should be sent to the Department as described above. Permittees who exchange a valid permit are not required to pay an additional fee when an exchange application is submitted. It is preferred that applications are sent via email, as this allows for a receipt confirmation to be sent to the local authority.

- Email: iapledge@iowaabd.com
- Fax: 515-281-7375

+

DATE : 6/14/2024 1:21 PM
OPER : AJONHSON
TKBY : AJ
TERM : 6
REC# : R00100588

BLDREV7 BUILDING ADDITION PERMIT 75.00
210 7TH ST NE KYLE TRUSTY 75.00
BUILDING ADDITION PERMIT 75.00
001-170-1-4120 -75.00

Paid By:210 7TH ST NE KYLE TRUSTY
Check 75.00 REF:8068

APPLIED	75.00
TENDERED	75.00
CHANGE	0.00

Iowa Retail Permit Application for Cigarette/Tobacco/Nicotine/Vapor Instructions

General Instructions

- Complete all applicable fields. A permit will not be issued until this application is properly completed and has been approved by your local jurisdiction or the Iowa Department of Revenue.
- Fill in the month, day, and years that this application covers.
- All permits expire annually on June 30.
- A new application must be submitted every year.

Business Information

- Fill in the legal name/DBA name of the business.
- Fill in the 9-digit Iowa sales and use tax permit number.
- Fill in the retail location address, city, and ZIP code. This is the address that will appear on the permit, if approved. If you are making mobile sales (see below for further instructions), use this line to report the address of the location from which your vehicle will be dispatched.
- Fill in the mailing address or PO Box, city, state, and ZIP code.
- Fill in the 10-digit phone number of the business.

Legal Ownership Information

- Check the ownership type of the business.
- Fill in the name(s) of the sole proprietor, partnership, the corporation, the LLC, or the LLP that owns the business. This is not the store manager or the corporate president. Do not fill in the name of an individual unless the type of ownership is sole proprietor.
- Fill in the address, city, state, and ZIP code of the business' primary office.
- Fill in the 10-digit phone number, fax number, and email address of the legal owner.

Retail Information

- Check the box for the type of sales the business will make.
- If you will make mobile retail sales, include the vehicle identification number (VIN) and license plate number for the vehicle from which sales will be made. NOTE: Each vehicle is a separate retail location. If you plan to make retail sales from more than one vehicle, you must complete a separate application for each vehicle from which retail sales will be made.
- Check the types of products sold at the business.
- Check the box that best describes the type of business establishment.
- Print the name of the sole proprietor, the partner(s), or corporate officials (up to three).
- Sign and date the application. The application must be signed by an authorized party.
- Return this application and fee to your local jurisdiction: city clerk (within city limits) or county auditor (outside of city limits).

Permit Fees

- The price of a retail permit depends on the location of the business and the month issued

Location	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun
Outside of city limits	$50.00	$37.50	$25.00	$12.50
City of less than 15,000	$75.00	$56.25	$37.50	$18.75
City of 15,000 or more	$100.00	$75.00	$50.00	$25.00

For City Clerk/County Auditor Only

Send completed/approved applications within 30 days of issuance to iapledge@iowaabd.com or by fax to 515-281-7375.

Visit the Iowa Department of Revenue at tax.iowa.gov for information regarding minimum price, a list of approved brands, a list of licensed distributors, and answers to frequently asked questions.

Meeting Minutes
Bondurant Community Library │ Library Board of Trustees
Wednesday, May1, 2024

Call to order: Meeting called to order at 6:00 PM by President Bryant.

1. **Roll Call:** *Members Present:* Josh Bryant, Julie Bergeson, Mike Kramer, Sue Ugulini, Travis Appelgate and Jen Keeler. Director Sanders and Assistant Director Klinker-Feld were also present.
   Guests present: Tara Cox, Bondurant City Council liaison.

2. **Perfecting and Approving the Agenda:** Motion to approve the agenda as by Ugulini, seconded by Kramer. Motion carried.

3. **Approval of Consent Agenda:**
   a. Minutes of past meeting – April 2024
   b. Financial Report
   c. Approve Warrant list / authorize expenditures
   d. Staff Report – April 2024
   e. Director's Report – April 2024
   f. Statistics – April 2024

Motion to approve the above consent agenda with edits by Keeler, seconded by Ugulini. Motion carried.

4. **Public Comments:** None.

5. **Library Foundation Update:** Book Sale May 3-5, 2024. Volunteers needed.

6. **Friends of the Library Update:** Book Sale May 3-5, 2024. Volunteers needed

7. **City Council Liaison Report**: Reviewed streets and water plan in a joint meeting with Planning & Zoning committee, city employees, Park & Rec committee. Bondurant will be represented at the Great Des Moines Partnership trip to Washington DC (DMDC). Many upcoming summer events. A new Communications Director has been hired and the Bondurant Chamber of Commerce is hiring for a new Executive Director.

8. **Old Business:** None.

9. **New Business:**

a) Trustee Training – Chapter 14 Trustee Handbook: *Public Library Standards.* Reviewed and discussed this chapter.

b) Review/Approve Public Relations Policy. Motion to approve by Bergeson, seconded by Ugulini. Motion carried.

c) Discuss/Decision Staff Salaries FY 2024-2025. Motion to approve by Kramer, seconded by Keeler. Motion carried.

10. **Board President Items:** President Bryant shared with Board an article about funding for Kossuth County libraries.

12. **Adjournment:** Motion to adjourn by Kramer, seconded by Appelgate. Motion carried.

Next Meeting: June 5, 2024 at 6 PM.

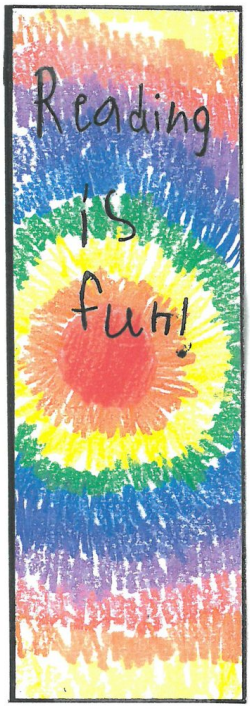
Librarian items May, 2024

- Director Sanders attended City Council meeting on May 6 and attended virtually on May 20. There was not enough staff to attend in person.
- No Library Staff meeting was held in May. There was not enough staff to allow for this meeting.
- Director Sanders attended the Bondurant Community Library Foundation meeting on May 15. The Friends of the Library did not hold a meeting in May
- AEA has notified the Library that they will no longer pick up Interlibrary Loan materials for delivery at other libraries in the Metro. AEA has for many years stopped at local libraries in the metro area and delivered Interlibrary Loan items to other libraries as a courtesy. With the recent budget cut and re-organization of the AEA's across the State they no longer have funding to provide this service to Libraries. This will definitely cause an increase in the postage line item in future fiscal years.
- Jennifer Adkisson has been hired as the new Adult Services Librarian, replacing Chantel Phipps-Bucklin who resigned the position in May. Her start date is scheduled for June 3 and comes to us from the Waukee Public Library. If you are stopping in the Library make sure to welcome Jennifer.
- Assistant Director Michell has been notified that the grant she submitted to the Polk County Betterment Grant on behalf of the Library Foundation was approved for $5000.00. She originally submitted it for $2500.00 and they approved it for $2500.00 additional funds. It was written for purchase of items for the Library of Things. This grant will certainly help this collection get off the ground in a big way. Thanks Michell and the Library Foundation.
- Signup for the Summer Reading Program began on May 20 and one week into the signup window we are at right at 700 signed up for the program. The Children's Library and Young Adult Librarian were able to visit all the buildings at the school this year to promote the summer program.
- The new door for the Study Room has been installed and re-keyed to match all the other locks in the Library.
- The DVD player in the meeting rooms has stopped working. CTI came and picked it up hoping to repair it. But, they have reported it will need to be replaced

and have a new one on order. This player is used in children's programming and with the adult fitness class on a regular basis.

- Staff manned a booth at the Farmer's Market on May 22. It was a great way to introduce the community to Carly our newer Children's Librarian and to get the word out about the Summer Reading Program. Over 100 participants were signed up for the Summer Reading Program at the Farmer's Market that night.
- We recently held a bookmark contest for all patrons.

TaaDaa here are the winners.



STAFF REPORT MAY 2024

Michell:

- Webinar "Brainfuse: Learn About Our Newest Service (CollegeNow) Plus Our Partnership with Barron's"

Megan S:

- Kids Lib
- Summer Reading school visits

Carly:

- Kids Lib
- Graduation from University of Iowa, Master's degree in Library & Information Science
- Summer Reading school visits

Events in May:

- 14 Story Times at the Library
- 5 Sessions of Baby Story & Play
- 8 Sessions of Fit for Life!
- Adult Craft Night
- Book Discussion for Adults
- Books on Tap book discussion at Reclaimed Rails
- Estate Planning workshop
- Adult Crafternoon
- Two Video Conferencing Workshops
- Book Club for grades 3-5
- Book Club for grades 6-8
- Teens Only Sunday Funday
- Pokémon Club
- STEAM Club
- After School CultureALL program
- After School BINGO
- After School Magic Show
- Summer Reading Program registration event at the Farmers Market

Stats for May, 2024

- Total Circulation for the month 9,443, 7,341 last year at this time.
- On-line usage (e-Books, Downloadable music, Hoopla (music, ebooks, streaming video), Rocket Language, Brainfuse, Adventure Pass 3,084, last year 1,540.
- Door Count 5,177, last year 2,675.
- Assisting patrons by phone, with the catalog, computers, etc. 574 and 307 last year.
- Story times- 19 were held with 333 attending.
- Total programming attendance 2,663 for adults, youth and children 2,480 last year. These numbers include visiting all of the school buildings promoting Summer Reading Program.
- Internet usage in house was 953, last year 605, 1,367 Wi-Fi users 1,744 last year, 43 hotspot were used this past month last year 125.
- Meeting room –May had 159 reservations by the community, last year 84.

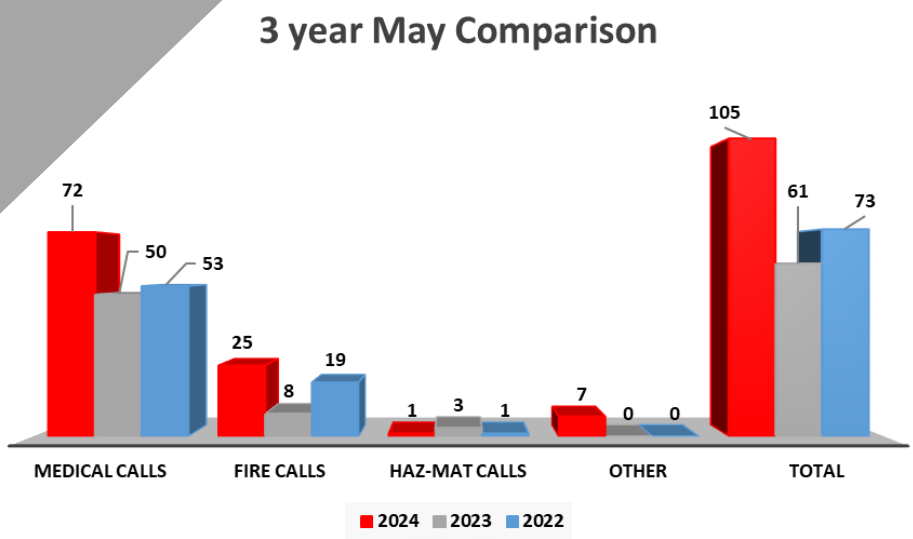
- Issued 80 new library cards. Last year we issued 91 cards during the month of May.
- The library did 23 requests for materials from other libraries and provided 48 to other libraries.
- 200 items were added to the collection and 937 were removed.
- 64 Mobile Printing, last year 7.
- 63 patrons used the Tablet Station

Bondurant Emergencies Services

May 2024

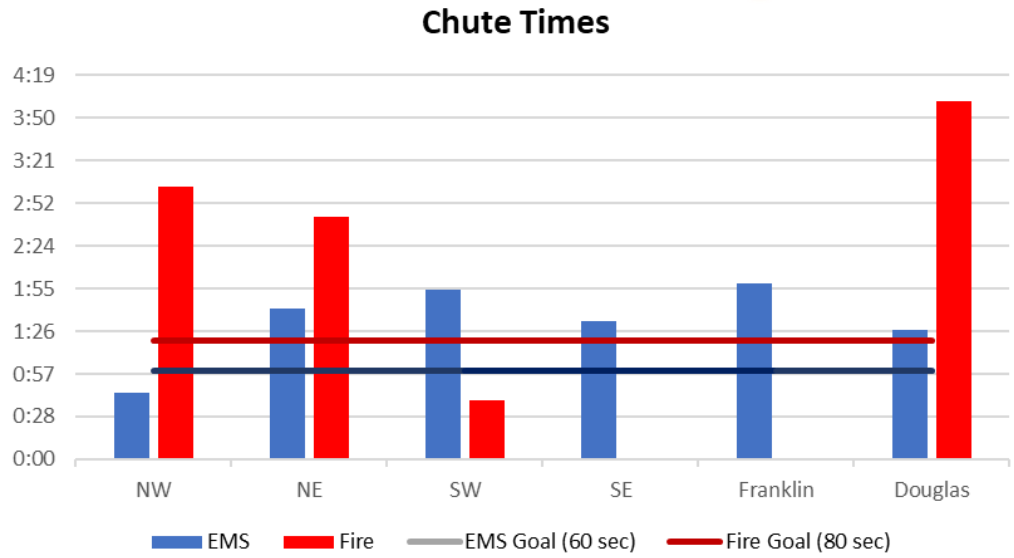
Monthly Report

Operational Statistics



Simultaneous Calls			
2023		2024	
2nd out calls	3	2nd out calls	23
3rd out calls	0	3rd out calls	3
4th+ out calls	0	4th+ out calls	0
TOTAL	**3**	**TOTAL**	**26**
5% Multiple Calls		25% Multiple Calls	
Simultaneous Calls Breakdown			
Medical 54%		Fire 46%	

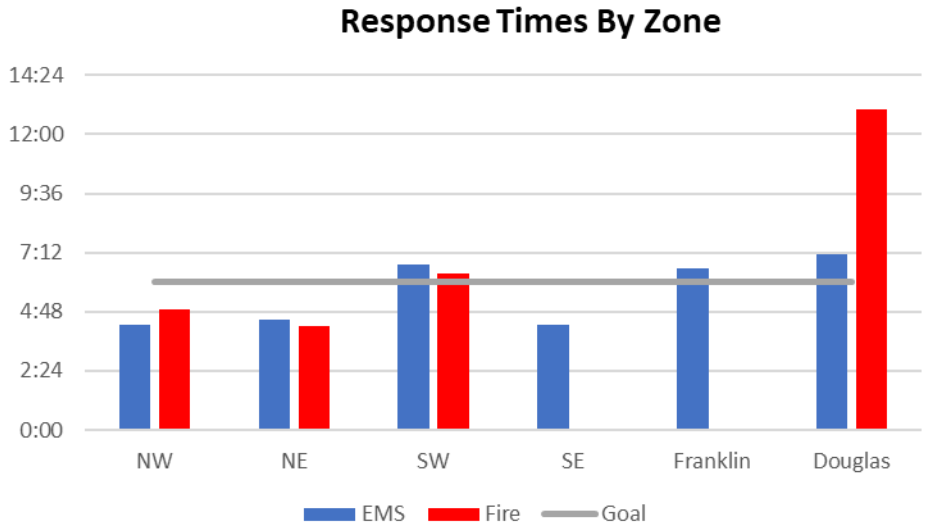
All-Time Record Month For May



Delayed response due to multiple calls

Chute– **8:44**

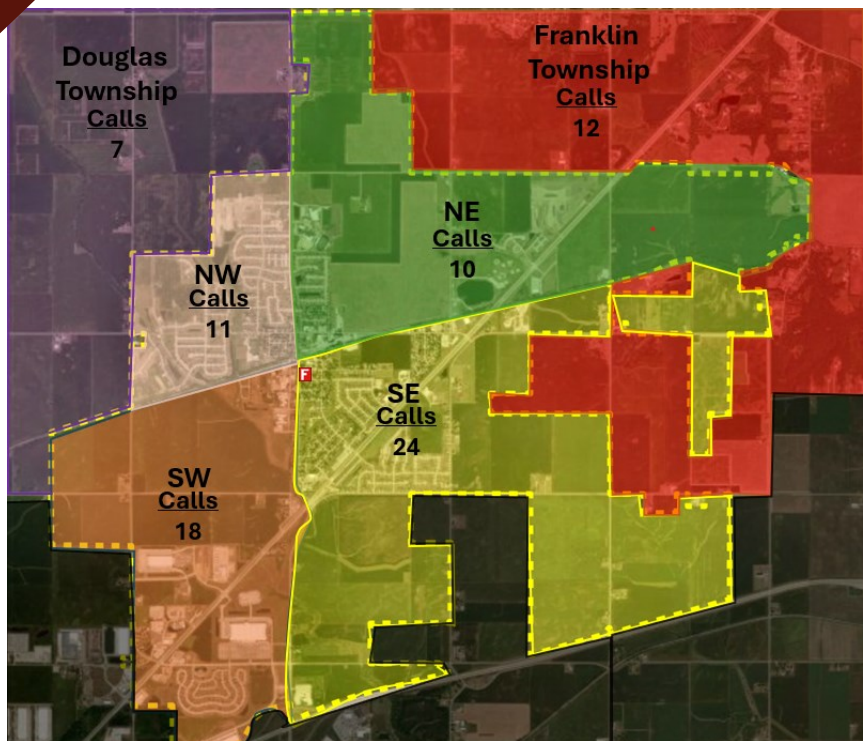
Response– **12:10**

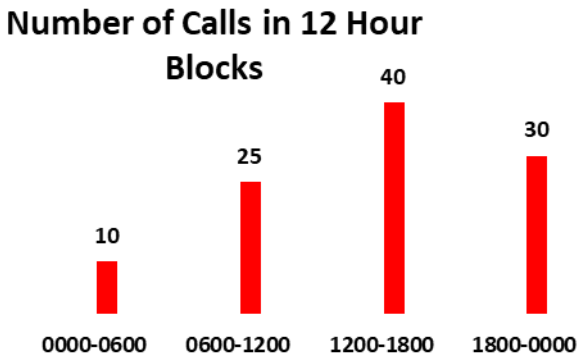


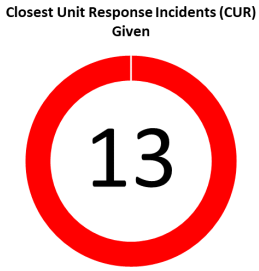
Bondurant
Life Connecting

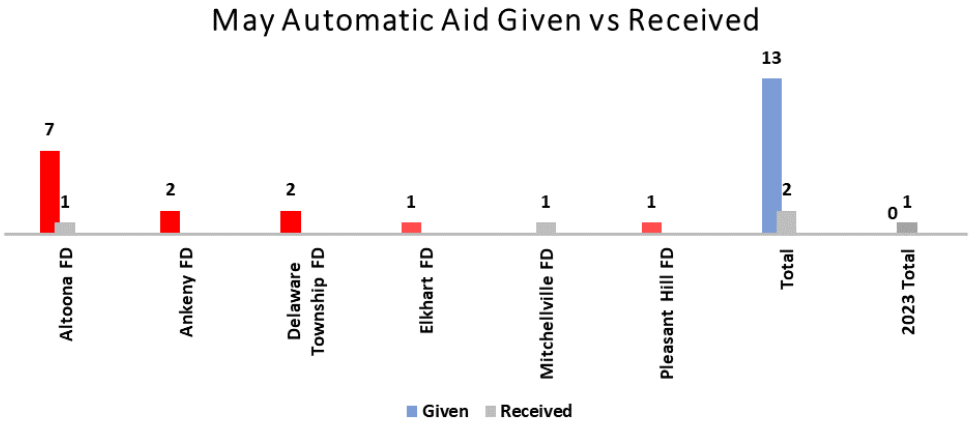
Operational Statistics

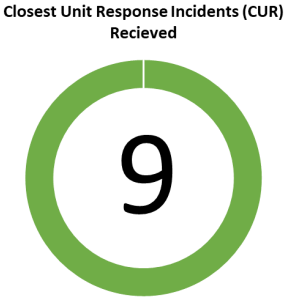
Number of Calls per District In May

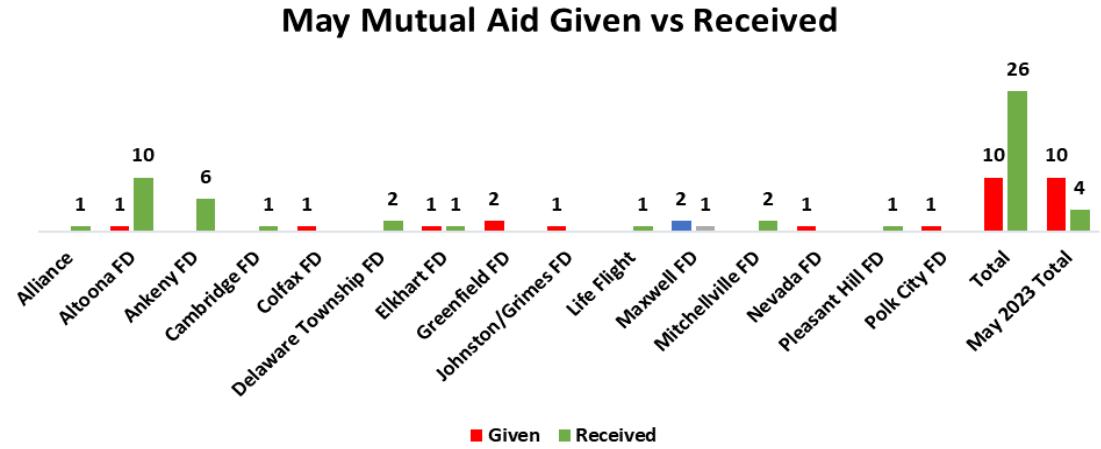








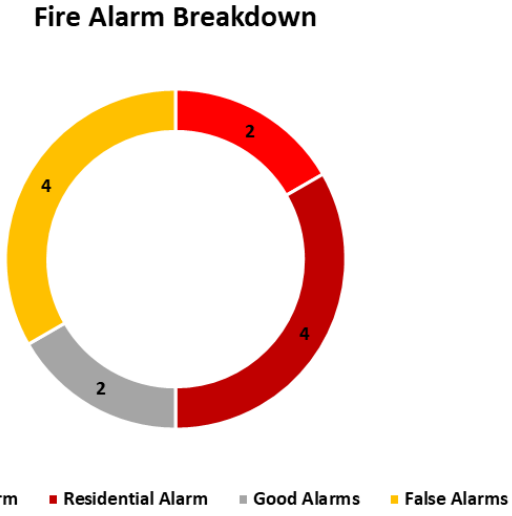


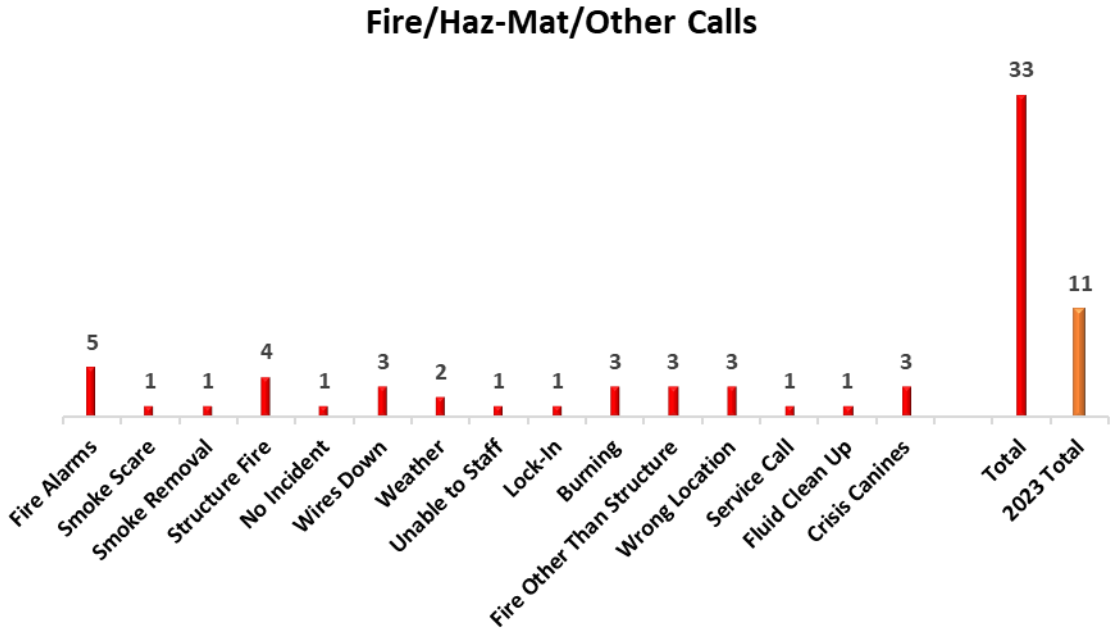


Bondurant Life Connecting

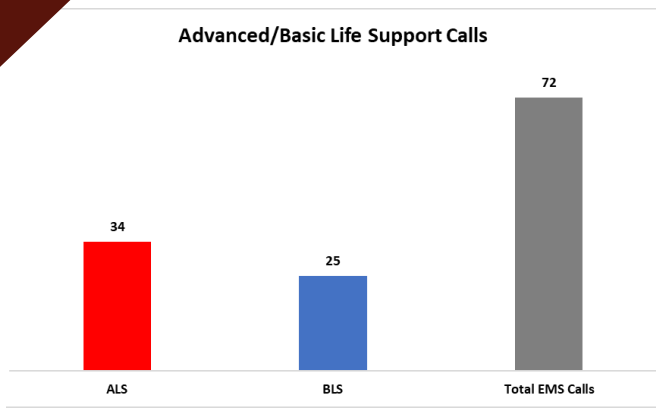
Fire Operational Statistics

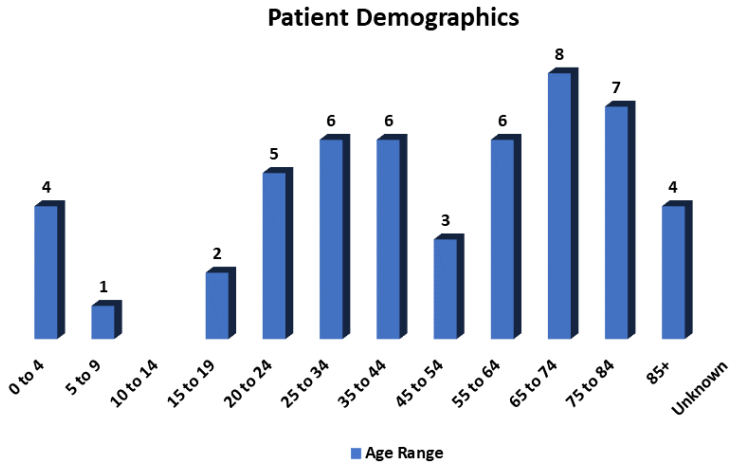
Fire Saved vs. Loss					
2023			2024		
Saved	Loss	Total Value	Saved	Loss	Total Value
$0	$	$0	$1,374,494	$826,750	$2,201,745

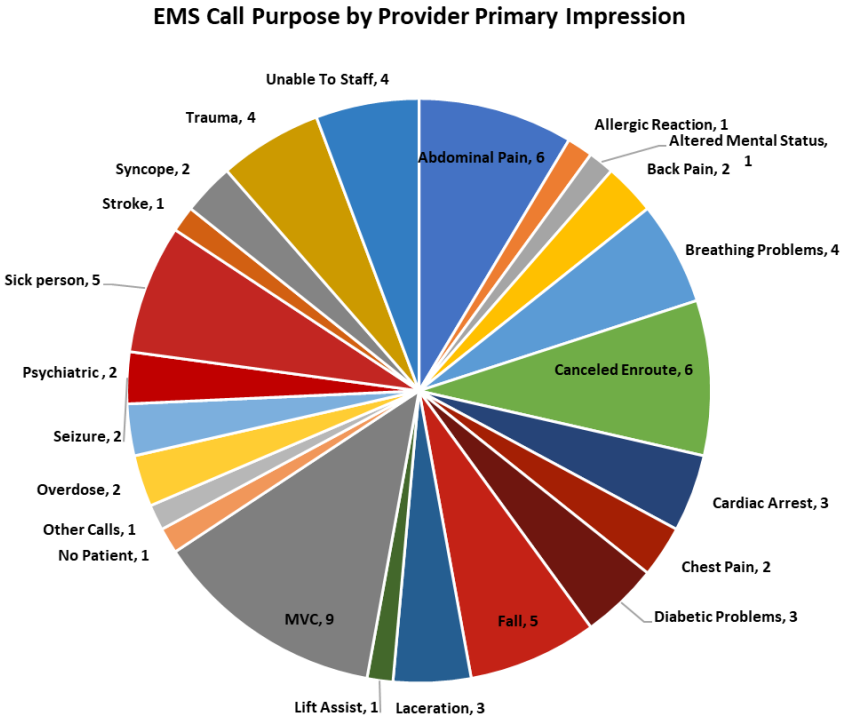


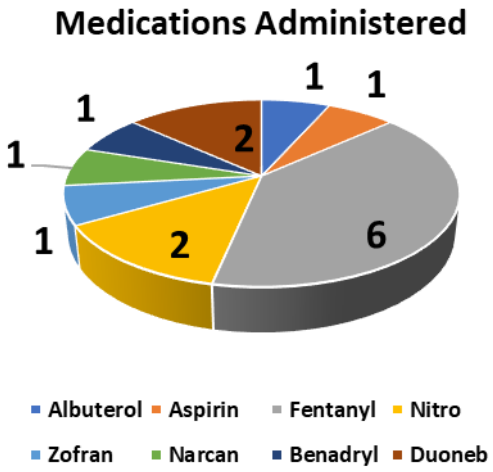


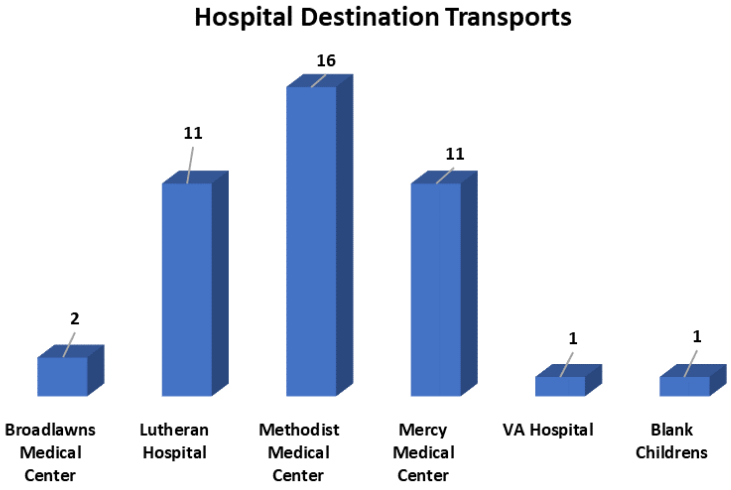
EMS Operational Statistics











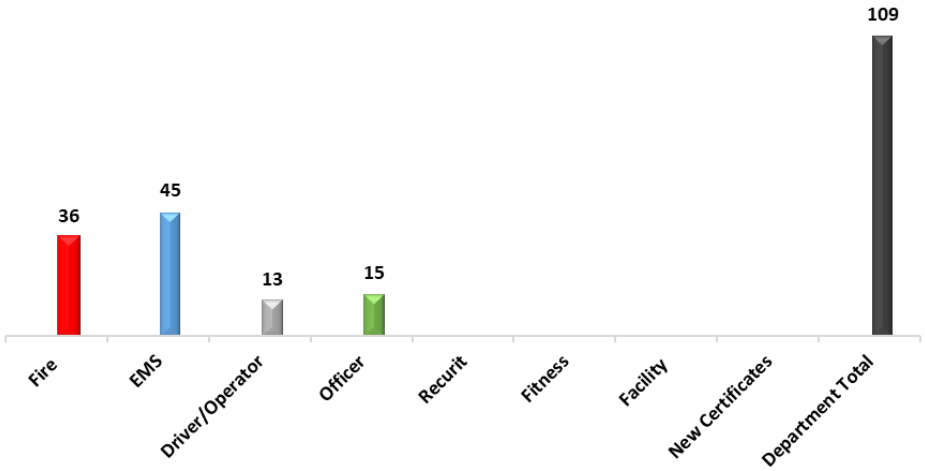
Bondurant
Life Connecting

Training Division

For the month of May, department members trained on the following:

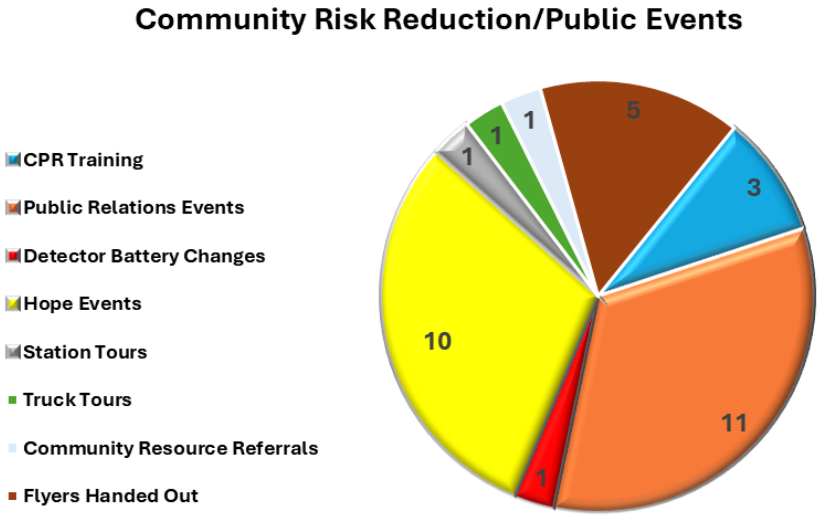
Engine Company	EMS Training
Engine Pump Training Hose pulling	Hereditary Angioedema w/NC1inh

Training Hours By Type



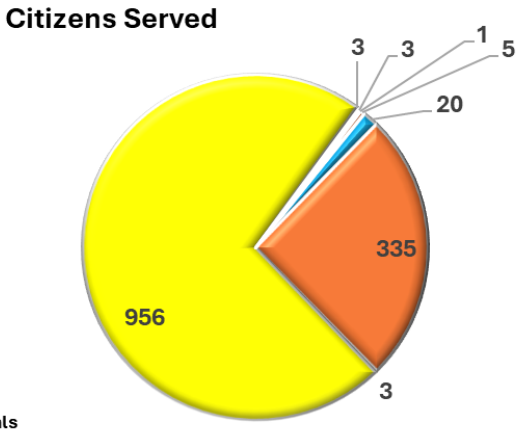
Community Risk Reduction/ Public Education

33 Events Attended



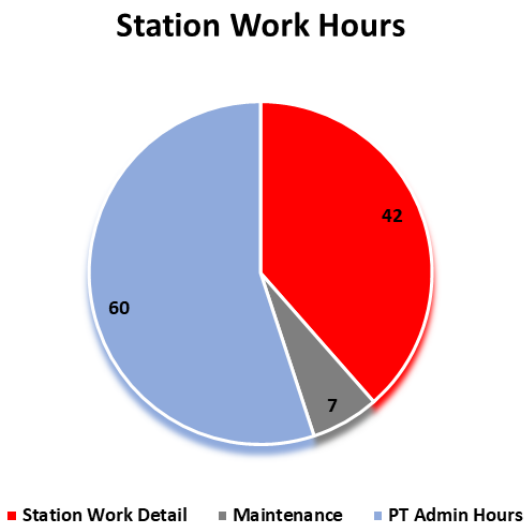
30.75 Total Hours Dedicated

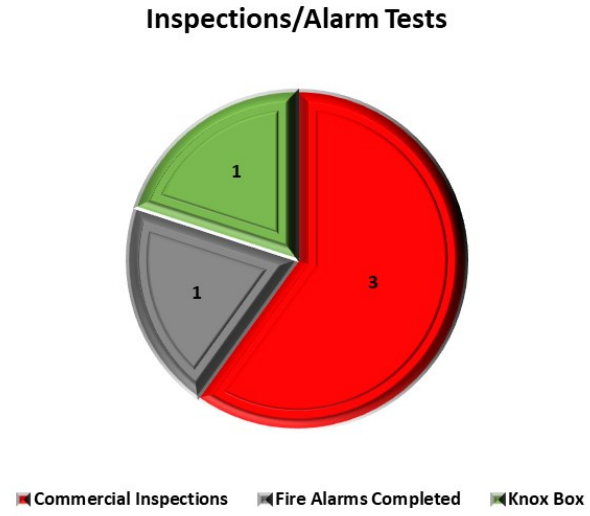
1,326 Total Citizens Outreached

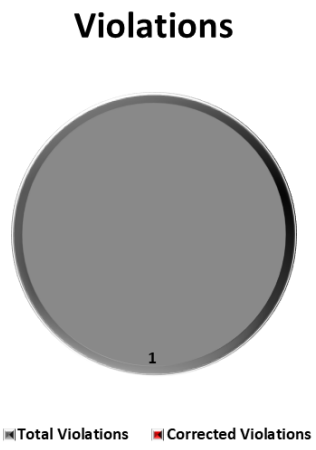


Bondurant
Life Connecting

Code Enforcement







Bondurant
Life Connecting

Incidents & Happenings

May 7th– Structure Fire
3200 Blk. Birch St. SW– Bondurant

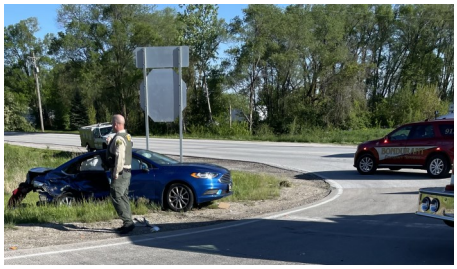
E412, C410, C421, B427, & A414 responded to a 2nd alarm residential structure fire. Smoke was showing from the front of the house on arrival. E412 made a quick attack on the fire and prevented further fire damage to the structure. 7 people were checked on for smoke inhalation. Crews were on scene for over 2 hours. We were assisted by Altoona, Delaware, Mitchellville, and Ankeny FD's. No injuries were reported.

May 8th– Motor Vehicle Collision
400 Blk. Hubbell Ave NE– Bondurant

Brush 417 & Car 421 responded to a vehicle fire. Breaks on a truck were on fire. About 5 gallons of water was used to extinguish.

May 8th– Structure Fire
200 Blk. 6th St. NE

C421, C410, E412, B417 responded to a residential structure fire. Units arrived to find nothing showing from the exterior. Crews found a fire in the bathroom ceiling, which was quickly extinguished. One mutual aid engine was requested and canceled enroute. No injuries were reported.



May 10– Motor Vehicle Collision
9400 Blk. Hubbell Ave– Bondurant

Engine 412, Car 410, C421, & Ambulance 414 responded to a two car MVC. Upon arrival, 2 cars with heavy damage. 2 patients were treated and released. We were assisted by Altoona FD for an engine.

May 20th– Structure Fire
11400 Blk. NE 72nd St.– Bondurant

E412, C421, B427, T416, & A414 responded to a 2nd alarm residential structure fire. A large storage shed was fully involved. E412 made a defensive attack on the fire and protected exposures. Crews were on scene for over 3 hours. We were assisted by Altoona, Delaware, Mitchellville, and Ankeny, Maxwell, Cambridge, and Elkhart FD's. No injuries were reported.

May 21st– Tornado Assistance
Mutual Aid– Elkhart & Maxwell

C421, C410, B427, B417, & A414 responded mutual aid for Elkhart and Maxwell to assist with tornado damage. Crews assisted with clearing the roadway, patient care, and assisting victims.

Bondurant
Life Connecting

Incidents & Happenings

May 22th– Smoke Scare/Removal
309 Shiloh Rose Pky. NW– Bondurant

E412, C410, C421, & A414 responded to a residential structure fire. E412 made a investigation and found smoke in the basement. The source was quickly found by crew. Crews were on scene for over around 30 minutes. Mutual aid was used to handle additional calls that came out during the incident.

May 23th– Crisis Canine Deployment
Tornado Response– Greenfield

C410 and Hope was deployed to Greenfield, IA, to assist with healing after a tornado that came through the city.

May 31st– Motor Vehicle Collision
9400 Blk. NE Hubbell Ave– Bondurant

C420 and A414 responded to a motor vehicle collision. Crews found 2 cars with heavy damage. Multiple patients were found on scene and additional ambulances were called from Ankeny (2) and Pleasant Hill to assist.

Public Relations

May 1st– Treat Day
Bondurant Station 41

May Day baskets and cupcakes were brought to the firefighters. Thank you Bondurant Auto Body, Ted's Body Shop, R&B Auto Glass, Trumans Automotive, and Serve Credit Union for the treats.

May 1st-5th– Light the Night for Fallen Firefighters
Bondurant Station 41

Bondurant FD lite up the front entrance way of Station 41 red, to remember the fallen firefighters.

May 6th– Hope event at Runnells Elementary

Runnells Elementary School– Runnells

Bondurant FD was invited to come out to Runnells Elementary with Hope

May 8th– Farmers Market

100 Blk. Main St.– Bondurant

Bondurant FD members attended the farmers market. Crew hand a great time interacting with community members and

Bondurant
Life Connecting

You've Been Caught Doing an Amazing Job!

Bondurant Fire Dept.

Today and everyday we appreciate you for your selfless service to our Communities! We are so fortunate to have the opportunity to serve you With treats and your finacial needs! Enjoy your special day and we hope to see you soon!

- Your friends at Serve Credit Union

Bondurant
Life Connecting

BUSINESS OF THE CITY COUNCIL
BONDURANT, IOWA
AGENDA STATEMENT

Item No. 5.f.
For Meeting of 6/17/2024

TITLE: Receive & File - Bondurant Emergency Services Facility Bid Package #2 - Precast (Supply Only) in the amount of $$712,439

CONTACT PERSON:
Marketa Oliver, ICMA-CM, SPHR, City Administrator
Aaron Kreuder, Fire Chief
John Horton, Public Works Director

BRIEF HISTORY & ANALYSIS: The City of Bondurant is working with Ryan Companies engaging the Construction Manager at Risk model for the design and construction of the new Bondurant Emergency Services Facility. Pursuant to Iowa Code section 26A.3.5 a., if the estimated total cost of trade contract work and materials packages is in excess of the adjusted competitive bid threshold established in section 314.1B, the construction manager-at-risk shall advertise for competitive bids, receive bids, prepare bid analyses, and **award contracts** to qualified firms on trade contract work and materials packages..."

Ryan Companies has recently bid out the Bid Package #2 for Precast (Supply Only). The estimate for this package was $900,000 and bids ranged from $712,439 to $853,956. The intent is for them to award the Bid Package to Advanced Precast Company. Attached is the bid sheet for the City Council to receive and file.

FUNDING SOURCE: TIF/GO Bond

STAFF RECOMMENDATION: Approve item on a roll call vote.

APPROVED FOR SUBMITTAL:

ATTACHMENTS:
1. Bondurant Emergency Services Facility Bid Package 2 - Precast

0777-000: BESP - Bondurant Emer

Prepared by Ryan Companies US Inc. - 111 E Grand Ave, Su

Bid Package Lead: Tyler Lange (tyler.lange@ryancompanies.com)

Project Location: 500 Campus Dr SE, Bondurant, IA 50035, United States of Ame

2: Precast (Supply Only)

Generated June 11, 2024

Base Bid

Estimated Cost

$900,000

LINE ITEMS

Precast (Supply Only)

Base Bid Total

Summary

Advanced Precast

Submitted by Mike Schlic

$712,439

Original Proposal, June 5

Unit

gency Services Facility Bid Package
uite 200, Des Moines, IA 50309, USA

erica

Company
chte

, 2024

	Qty	Unit Cost	Total Cost
			$712,439

ge #2 - Precast

Coreslab Structures, Inc. (Omaha)

Submitted by Mark Mccaulley

$814,000

Original Proposal, June 5, 2024

Unit	Qty	Unit Cost

Please see attached precast material proposal from Coreslab Structures.Mar

	Molin Concrete Products Co. Submitted by Brad Dicastri **$824,734** Original Proposal, June 5, 2024	
Total Cost	Unit	Qty
$814,000		
rk McCaulleyCoreslab Stri		

	Unit Cost	Total Cost
		$824,734

PDM Precast, Inc.
Submitted by Carrie Fain

$844,331

Original Proposal, June 5

Unit
Please find attached PDM

, 2024

	Qty	Unit Cost	Total Cost
			$844,331

M's proposal for Bid Package #2 - Precast. Thanks.Carrie Fain515-559-8156

Enterprise Precast Concrete, Inc.

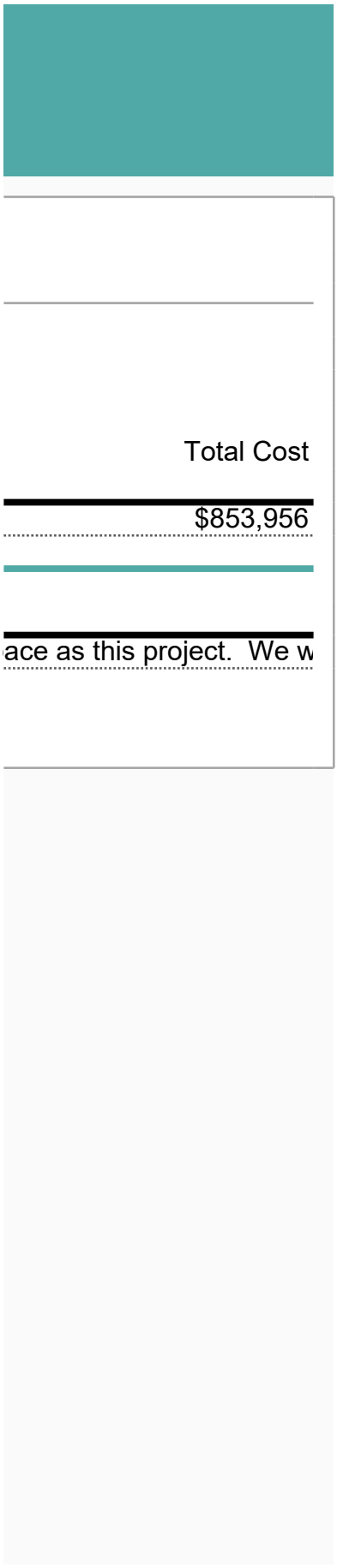
Submitted by Martin Lane

$853,956

Original Proposal, June 5, 2024

Unit	Qty	Unit Cost

We are bidding another project today that would use the same production sp


Total Cost
$853,956
ace as this project. We w

BUSINESS OF THE CITY COUNCIL
BONDURANT, IOWA
AGENDA STATEMENT

Item No. 5.g.
For Meeting of 6/17/2024
Resolution

TITLE: - Resolution approving Pay Request No. 1 to Gerard Tank & Steel for the Water Tower Project in the amount of $697,752.68

CONTACT PERSON:
John Horton, Public Works Director

BRIEF HISTORY & ANALYSIS: Staff recommend the attached resolution to approve pay app #1 in the amount of $697,752.68 related to the Water Tower Project.

This pay application has been reviewed by City Staff and Engineers from Veenstra & Kim for accuracy and is for work completed from August 2023 through May 31st, 2024, for the project. The Water Tower project is progressing. All the foundation and most of the underground work has been completed, and the tower shaft is just over halfway constructed. We have requested an updated timeline from the contractor as the spring rains in May have delayed the project. Staff will update the council once there is a better understanding of the timeline from the contractor.

FUNDING SOURCE: SRF Funds

STAFF RECOMMENDATION: Approve resolution on a roll call vote.

APPROVED FOR SUBMITTAL:

ATTACHMENTS:
1. RESOLUTION NO. 240617-123
2. Pay Request No. 1

CITY OF BONDURANT
RESOLUTION NO. 240617-123

RESOLUTION APPROVING PAY REQUEST NO. 1 TO GERARD TANK AND STEEL FOR THE WATER TOWER PROJECT IN THE AMOUNT OF $697,752.68

WHEREAS the Water Tower Project Pay Request No. 1 was submitted on June 6th, 2024; AND

WHEREAS, the pay request no. 1 is for work completed through May 31st, 2024, on the Water Tower Project; AND

WHERAS, City Staff and engineers from Veenstra & Kimm have reviewed the pay application for accuracy.

NOW, THEREFORE, BE IT RESOLVED, by the City Council of the City of Bondurant, Iowa, that the pay request no. 1 to Gerard Tank & Steel in the amount of $697,752.68 is hereby approved.

Passed this 17th day of June 2024,

By: _____
Doug Elrod, Mayor

ATTEST: I, Shelby Hagan, City Clerk of Bondurant, hereby certify that at a meeting of the City Council held on the above date, among other proceedings the above was adopted.

IN WITNESS WHEREOF, I have hereunto set my hand the day and year above written.

_____
Shelby Hagan, City Clerk

Name	Yay	Nay	Abstain	Absent
Cox				
Driscoll				
McKenzie				
Peffer				
Sillanpaa				

VEENSTRA & KIMM INC.
3000 Westown Parkway
West Des Moines, Iowa 50266

515.225.8000 // 800.241.8000
www.v-k.net

June 6, 2024

Marketa Oliver
City Administrator
City of Bondurant
200 Second Street NE
P.O. Box 37
Bondurant, Iowa 50035

BONDURANT, IOWA
WATER TOWER - REBID
PARTIAL PAYMENT ESTIMATE NO. 1

Enclosed is a copy of Partial Payment Estimate No. 1 for the Water Tower project under the contract between the City of Bondurant and Gerard Tank & Steel. Partial Pay Estimate No. 1 is for the period ending May 31, 2024, in the amount of $697,752.68.

If you have any questions or comments concerning the project, please contact the writer at 515-669-7768.

VEENSTRA & KIMM, INC.

Callin Hornsby

CRH
428106
cc: Steph Melhus – Gerard Tank & Steel (electronic)

VEENSTRA & KIMM INC.
3000 Westown Parkway
West Des Moines, Iowa 50266

515 225 8000 // 800 241 8000
www.v-k.net

Date: *May 31, 2024*

PAY ESTIMATE NO. 1.

Project Title	Water Tower City of Bondurant, Iowa		Contractor	Gerard Tank & Steel, Inc. 1540 East 11th Street, PO Box 513 Concordia, KS 66901
Original Contract Amount & Date	$4,438,273.10	10-Jul-23	Pay Period	1-Aug-23 to 31-May-24

BID ITEMS

Bid Item No.	Specification Section / Description	Unit	Estimated Quantity	Unit Price	Extended Price	Quantity Completed	Value Completed
1	1,000,000 Gallon Composite Water Tower						
1.1	Rommed Aggregate Piers	LS	1	$ 81,000.00	$ 81,000.00	100.00%	$ 81,000.00
1.2	Foundation	LS	1	$ 510,350.00	$ 510,350.00	99.00%	$ 505,246.50
1.3	Concrete Support Shaft	LS	1	$ 811,000.00	$ 811,000.00	8.00%	$ 64,880.00
1.4	Fabricated Steel - Delivered	LS	1	$ 844,308.10	$ 844,308.10	0.00%	$ -
1.5	Steel Erection	LS	1	$ 1,112,200.00	$ 1,112,200.00	0.00%	$ -
1.6	Field Coating	LS	1	$ 440,000.00	$ 440,000.00	0.00%	$ -
1.7	Electrical	LS	1	$ 185,000.00	$ 185,000.00	0.00%	$ -
1.8	Miscellaneous Start ip	LS	1	$ 32,000.00	$ 32,000.00	0.00%	$ -
2	7" PCC Driveway	SY	1,175.0	$ 135.00	$ 158,625.00	0	$ -
3	18" RCP Culvert	LF	55	$ 40.00	$ 2,200.00	55	$ 2,200.00
4	18" RCP FES	EA	2	$ 1,000.00	$ 2,000.00	2	$ 2,000.00
5	72" High Chain Link Fence	LF	720	$ 52.00	$ 37,440.00	0	$ -
6	72" High Chain Link Fence Double Gate	EA	2	$ 1,300.00	$ 2,600.00	0	$ -
7	PVC Water Main in Open Cut - 16"	LF	465	$ 110.00	$ 51,150.00	465	$ 51,150.00
8	Hydrant	EA	1	$ 9,000.00	$ 9,000.00	0	$ -
9	Gate Valve - 16"	EA	2	$ 14,000.00	$ 28,000.00	2	$ 28,000.00
10	Site Improvement	LS	1	$ 4,000.00	$ 4,000.00	0.00%	$ -
11	Seeding - SUDAS Type 2	ACRE	2	$ 3,000.00	$ 6,000.00	0	$ -
12	Exterior Decorative Lighting	LS	1	$ 121,400.00	$ 121,400.00	0.00%	$ -
CO 1	Intall Level Control Valve and Bypass Valve Facilities	LS	1	$ 181,000.00	$ 181,000.00	0.00%	$ -
			TOTAL ORIGINAL CONTRACT		$ 4,619,273.10		$ 734,476.50

V-K Job No. 428106

SUMMARY

	Original Contract Price	Value Completed
Bid Items Subtotal	$4,438,273.10	$ 734,476.50

APPROVED CHANGE ORDERS

Change Order No.	Description/Notes	Total Approved	Value Completed
CO 1	Intall Level Control Valve and Bypass Valve Facilities	$ 181,000.00	
	TOTAL ALL CHANGE ORDERS	$ 181,000.00	$ -
	Revised Contract Price	**$ 4,619,273.10**	**$ 734,476.50**

Total Materials Stored		$ -
Value of Completed Work and Materials Stored		**$ 734,476.50**
Less Retained Percentage (5%)		$ 36,723.83
Total Earned Less Retainage		**$ 697,752.68**

PREVIOUSLY APPROVED PARTIAL PAYMENTS

Less Estimate(s) Previously Approved	Pay Estimate No.1	$ -
Less Total Pay Estimates Previously Approved		**$ -**

Percent Complete	15.9%	**Amount Due This Estimate**	**$ 697,752.68**

The amount $697,752.68 is recommended for approval for payment in accordance with the terms of the contract.

Quantities Complete Submitted By:	**Recommended By:**	**Approved By:**
Gerard Tank & Steel, Inc.	**Veenstra & Kimm, Inc.**	**City of Bondurant, Iowa**
Signature	Signature	Signature
Title: Secretary/Treasurer	Title: Project Engineer	Title: Mayor
Date: 5/24/2024	Date: 6/6/2024	Date

BUSINESS OF THE CITY COUNCIL
BONDURANT, IOWA
AGENDA STATEMENT

Item No. 5.h.
For Meeting of 6/17/2024
Resolution

TITLE: - Resolution authorizing the Mayor to execute an amendment #1 in the amount of $25,120 to the Agreement with OPN Architects for Commissioning Services related to the Bondurant Emergency Services Facility

CONTACT PERSON:
Marketa Oliver, ICMA-CM, SPHR, City Administrator

BRIEF HISTORY & ANALYSIS: On August 21, 2023, the City Council approved an agreement with OPN for architectural services for the Bondurant Emergency Services facility in an amount not to exceed $1,126,355. Of that amount, $1,066,445 is for design, documentation, and construction administration services; $22,100 is for BIM management for Record Documents; and $37,810 is for Design, Documentation, and Administration Services.

Their proposal (and the proposals of the other architectural firms) noted that commissioning services would be outside the scope of their services and would need to be a separate agreement once more was known about the building and the layout and design. Commissioning services include: reviewing contractor submittals applicable to the systems being commissioned, witnessing applicable equipment startups; developing functional performance testing procedures applicable to the systems being commissioned; conducting commissioning team meetings and site observations during the construction as needed; overseeing and documenting functional testing results for equipment including HVAC equipment, Domestic Hot Water (30% sampling), lighting systems and building automation system; maintaining commissioning issues log and track corrective action reports; and providing a commissioning report with meeting minutes, field reports, issues log, and functional performance tests results.

The attached resolution approved the amendment to the agreement in an amount of $25,120.

FUNDING SOURCE: TIF/GO Bonds

STAFF RECOMMENDATION: Approve resolution on a roll call vote.

APPROVED FOR SUBMITTAL:

ATTACHMENTS:
1. RESOLUTION NO. 240617-124
2. Amendment No. 01 to BESF Professional Services Agreement

CITY OF BONDURANT
RESOLUTION NO. 240617-124

RESOLUTION AUTHORIZING THE MAYOR TO EXECUTE AMENDMENT#1 IN THE AMOUNT OF $25,120 TO THE AGREEMENT WITH OPN ARCHITECTS FOR COMMISSIONING SERVICES RELATED TO THE BONDURANT EMERGENCY SERVICES FACILITY

WHEREAS on August 21, 2023, the City Council approved an agreement with OPN for architectural services for the Bondurant Emergency Services facility in an amount not to exceed $1,126,355; and

WHEREAS of that amount, $1,066,445 is for design, documentation, and construction administration services; $22,100 is for BIM management for Record Documents; and $37,810 is for Design, Documentation, and Administration Services; and

WHEREAS the proposal noted that commissioning services would be outside the scope of their services and would need to be a separate agreement once more was known about the building and the layout and design; and

WHEREAS, OPN has submitted Amendment #1 to their agreement for Commissioning Services in an amount of $25,120; and

WHEREAS, Commissioning services include: reviewing contractor submittals applicable to the systems being commissioned, witnessing applicable equipment startups; developing functional performance testing procedures applicable to the systems being commissioned; conducting commissioning team meetings and site observations during the construction as needed; overseeing and documenting functional testing results for equipment including HVAC equipment, Domestic Hot Water (30% sampling), lighting systems and building automation system; maintaining commissioning issues log and track corrective action reports; and providing a commissioning report with meeting minutes, field reports, issues log, and functional performance tests results.

NOW THEREFORE BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF BONDURANT, that Mayor is authorized to execute Amendment #1 to the agreement with OPN Architects for the above-referenced amount.

Passed this 17th day of June 2024,

By: _____
Doug Elrod, Mayor

ATTEST: I, Shelby Hagan, City Clerk of Bondurant, hereby certify that at a meeting of the City Council held on the above date, among other proceedings the above was adopted.

IN WITNESS WHEREOF, I have hereunto set my hand the day and year above written.

_____

Shelby Hagan, City Clerk

Council Action	Ayes	Nays	Abstain	Absent
Cox				
Driscoll				
McKenzie				
Peffer				
Sillanpaa				

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Amendment to the Professional Services Agreement

PROJECT: *(name and address)*
Bondurant Emergency Services Facility
Bondurant, Iowa 50035

OPN Project Number: 23827000

AGREEMENT INFORMATION:
Date: August 15, 2023

AMENDMENT INFORMATION:
Amendment Number: 001

Date: February 16, 2024

OWNER: *(name and address)*
City of Bondurant
200 Second Street, Northeast
P.O. Box 37
Bondurant, Iowa 50035

ARCHITECT: *(name and address)*
OPN Architects, Inc.
100 Court Avenue, Suite 100
Des Moines, IA 50309

The Owner and Architect amend the Agreement as follows:
Add Commissioning Scope of Services:
-provide commissioning services per jurisdiction (IECC 2012)
-review contractor submittals applicable to the systems being commissioned.
-witness applicable equipment startups
-develop functional performance testing procedures applicable to the systems being commissioned.
-conduct commissioning team meetings and site observations during construction as needed.
-oversee and document functional testing results for the following equipment:
    HVAC equipment
    Domestic Hot Water (30% sampling)
    Lighting systems
    Building automation system
-maintain commissioning issues log and track corrective action reports.
-provide a commissioning report with meeting minutes, field reports, issues log, and functional performance test results.

The Architect's compensation and schedule shall be adjusted as follows:

Compensation Adjustment:
TUNE Add: $25,120.00

Total: $25,120.00

Schedule Adjustment:
None

SIGNATURES:

OPN Architects, Inc.	City of Bondurant, Iowa
ARCHITECT *(Firm name)*	**OWNER** *(Firm name)*
-See attached signatures page-	-See attached signatures page-

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User Notes: (3B9ADA3F)

SIGNATURE	**SIGNATURE**
Danielle C. Hermann, AIA, Principal	Marketa Oliver, City Administrator
PRINTED NAME AND TITLE	**PRINTED NAME AND TITLE**
February 19, 2024	
DATE	**DATE**

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User Notes: (3B9ADA3F)

Signatures Page

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User Notes: (3B9ADA3F)

BUSINESS OF THE CITY COUNCIL
BONDURANT, IOWA
AGENDA STATEMENT

Item No. 5.i.
For Meeting of 6/17/2024
Resolution

TITLE: - Resolution appointing Jacob Huxford to the City's Tree Board

CONTACT PERSON:
Marketa Oliver, ICMA-CM, SPHR, City Administrator

BRIEF HISTORY & ANALYSIS: The attached resolution approves the appointment of Jacob Huxford to the City's Tree Board. In May 2024 the Bondurant City Council approved an ordinance increasing the amount of members on the Tree Board from five members to five to seven members. The Tree Board will be full, with seven members upon Jacob's appointment. The Tree Board is tasked with advising the Parks & Recreation Board in areas related to planting and maintaining tree-related projects, including the upcoming arboretum project along the Chichaqua Valley Trail extension through the Grain District.

FUNDING SOURCE: N/A

STAFF RECOMMENDATION: Approve resolution on a roll call vote.

APPROVED FOR SUBMITTAL:

ATTACHMENTS:
1. RESOLUTION NO. 240617-125

CITY OF BONDURANT
RESOLUTION NO. 240617-125

RESOLUTION APPOINTING JACOB HUXFORD TO THE CITY TREE BOARD

WHEREAS the City Tree Board consists of up to seven (7) members appointed by the City Council; AND

WHEREAS the term of office of the members of the Board shall be four (4) years; AND

WHEREAS all members of the Board shall serve without compensation; AND

WHEREAS the City has received an application from Jacob Huxford; AND

WHEREAS this resolution appoints Jacob Huxford to the Tree Board through the current term of December 31, 2028.

NOW, THEREFORE, BE IT RESOLVED, by the City Council of the City of Bondurant, Iowa, that Jacob Huxford is hereby appointed to the City Tree Board as presented.

Passed and adopted this 17th day of June 2024,

_____
Doug Elrod, Mayor

ATTEST: I, Shelby Hagan, City Clerk of Bondurant, hereby certify that at a meeting of the City Council held on the above date, among other proceedings the above was adopted.

IN WITNESS WHEREOF, I have hereunto set my hand the day and year above written.

_____
Shelby Hagan, City Clerk

Council Action	Ayes	Nays	Abstain	Absent
Cox				
Driscoll				
McKenzie				
Peffer				
Sillanpaa				

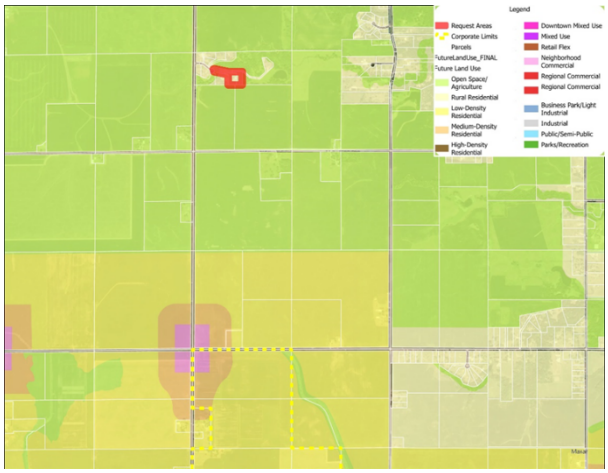
BUSINESS OF THE CITY COUNCIL
BONDURANT, IOWA
AGENDA STATEMENT

Item No. 5.j.
For Meeting of 6/17/2024
Resolution

TITLE: - Resolution regarding approval of a waiver of review of the Parcel 2024-88, a Plat of Survey located in unincorporated Polk County within two miles of Bondurant's City Limits

CONTACT PERSON:
Maggie Murray, Planning & Community Development Director
Isaac Pezley, City Planner

BRIEF HISTORY & ANALYSIS: The City is in receipt of a plat of survey request located in unincorporated Polk County within 2 miles of Bondurant's city limits. Polk County has zoning jurisdiction on this land - meaning that a permitted use review is conducted by Polk County and not the City of Bondurant. The City's Future Land Use Map as part of the 2022 Comprehensive Plan shows this area as Open Space/Agriculture and Rural Residential. The subject property is located north of the Bondurant's corporate limits at 7282 and 7288 NE 105th Place. The proposed Plat of Survey has been created to add additional space to Lot 8 of Crawford Creek, 7282 NE 105th Place, to add a detached garage. The applicant, Robert Burrows, owns both properties affected by the proposed Plat of Survey. The subject property is currently used for residential purposes. The red outlined area below shows the location of the proposed Plat of Survey.



FUNDING SOURCE: NA

STAFF RECOMMENDATION: The Planning and Zoning Commission will review the submitted Plat of Survey at their June 13, 2024 meeting.

APPROVED FOR SUBMITTAL:

ATTACHMENTS:
1. RESOLUTION NO. 240617-126
2. Plat of Survey

CITY OF BONDURANT
RESOLUTION NO. 240617-126

RESOLUTION REGARDING APPROVAL OF A WAIVER OF REVIEW OF THE PARCEL 2024-88, A PLAT OF SURVEY LOCATED IN UNINCORPORATED POLK COUNTY WITHIN TWO MILES OF BONDURANT'S CITY LIMITS

WHEREAS, Erin Griffin, Snyder & Associates, Inc, has submitted a plat of survey on the behalf of the property owners, Robert burrows, for Parcel 2024-88, which is described as follows:

A PART OF LOT 7, CRAWFORD CREEK, AN OFFICIAL PLAT, POLK COUNTY, IOWA DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF SAID LOT 7; THENCE NORTH 00°15'04" WEST ALONG THE WEST LINE OF SAID LOT 7, A DISTANCE OF 315.02 FEET TO THE NORTHWEST CORNER OF SAID LOT 7; THENCE NORTH 89°43'58" EAST, 12.00 FEET; THENCE SOUTH 00°15'04" EAST, 315.03 FEET TO THE SOUTH LINE OF SAID LOT 7; THENCE SOUTH 89°47'22" WEST ALONG SAID SOUTH LINE, 12.00 FEET TO THE POINT OF BEGINNING AND CONTAINING 0.09 ACRES (3,780 S.F.).

PROPERTY SUBJECT TO ANY AND ALL EASEMENTS OF RECORD.

NOW, THEREFORE, BE IT RESOLVED, that the City Council of the City of Bondurant, Iowa, hereby approve of a waiver of review of the submitted Plat of Survey, subject to the following Code clarification item:

Passed this 17th day of June 2024,

By: _____
Doug Elrod, Mayor

ATTEST: I, Shelby Hagan, City Clerk of Bondurant, hereby certify that at a meeting of the City Council held on the above date, among other proceedings the above was adopted.

IN WITNESS WHEREOF, I have hereunto set my hand the day and year above written.

_____
Shelby Hagan, City Clerk

Action	Yay	Nay	Abstain	Absent
Cox				
Driscoll				
McKenzie				
Peffer				
Sillanpaa				

INDEX LEGEND

SURVEYOR'S NAME / RETURN TO:
ERIN D. GRIFFIN
SNYDER & ASSOCIATES, INC.
2727 S.W. SNYDER BLVD
ANKENY, IOWA 50023
515-964-2020
egriffin@snyder-associates.com
SERVICE PROVIDED BY:
SNYDER & ASSOCIATES, INC.
SURVEY LOCATED:
PT. LOT 7
CRAWFORD CREEK
SECTION 7-80-22
REQUESTED BY:
ROBERT BURROWS

PLAT OF SURVEY

BOUNDARY LINE ADJUSTMENT

PARCEL 2024-88 DESCRIPTION

A PART OF LOT 7, CRAWFORD CREEK, AN OFFICIAL PLAT, POLK COUNTY, IOWA DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF SAID LOT 7; THENCE NORTH 00°15'04" WEST ALONG THE WEST LINE OF SAID LOT 7, A DISTANCE OF 315.02 FEET TO THE NORTHWEST CORNER OF SAID LOT 7; THENCE NORTH 89°43'58" EAST, 12.00 FEET; THENCE SOUTH 00°15'04" EAST, 315.03 FEET TO THE SOUTH LINE OF SAID LOT 7; THENCE SOUTH 89°47'22" WEST ALONG SAID SOUTH LINE, 12.00 FEET TO THE POINT OF BEGINNING AND CONTAINING 0.09 ACRES (3,780 S.F.).

PROPERTY SUBJECT TO ANY AND ALL EASEMENTS OF RECORD.

ZONING

ER: ESTATE RESIDENTIAL DISTRICT

NOTES

THIS BOUNDARY LINE ADJUSTMENT WILL REMOVE 0.09 ACRES (IDENTIFIED AS PARCEL 2024-88) FROM LOT 7 AND ADD TO LOT 8. THIS WILL RESULT IN LOT 7 BEING REDUCED FROM 1.83 TO 1.74 ACRES IN SIZE AND LOT 8 INCREASING FROM 1.94 ACRES TO 2.03 IN SIZE.

INTENT OF SURVEY

THE INTENT OF THIS SURVEY IS TO COMBINE PARCEL PARCEL 2024-88 WITH LOT 8, CRAWFORD CREEK TO FORM A SINGLE PROPERTY. THE OWNER IS REQUIRED TO COMBINE BOTH PROPERTIES WITH A SIGNED LOT TIE AGREEMENT.

DATE OF SURVEY

04/22/2024

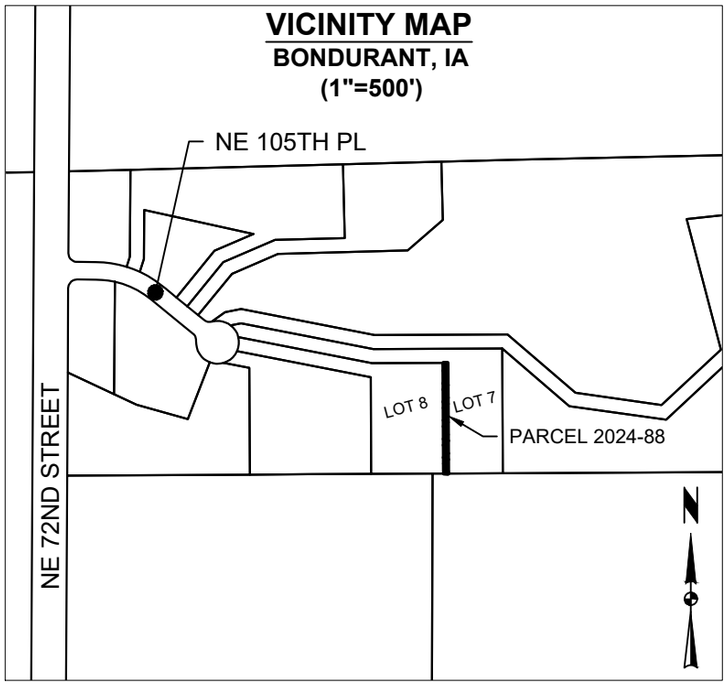
OWNER

ROBERT D. & CATHERINE A. BURROWS
7278 NE 105TH PL
BONDURANT, IA 50035-1331

BASIS OF BEARING

THE WEST LINE OF LOT 7, CRAWFORD CREEK, AN OFFICIAL PLAT, IS ASSUMED TO BEAR NORTH 00°15'04" WEST.

VICINITY MAP
BONDURANT, IA
(1"=500')



LEGEND

FEATURES	FOUND	SET
Section Corner	▲	△
1/2" Rebar, Yellow Plastic Cap #19710 (Unless Otherwise Noted)	●	○
ROW Marker	■	□
ROW Rail	⊢⊣	⊢⊣
Control Point	⊙CP	
Bench Mark	⊕	
Platted Distance	P	
Measured Bearing & Distance	M	
Recorded As	R	
Deed Distance	D	
Calculated Distance	C	
Yellow Plastic Cap	YPC	
Centerline		
Section Line		
1/4 Section Line		
1/4 1/4 Section Line		
Easement Line		

LICENSED PROFESSIONAL LAND SURVEYOR
ERIN D. GRIFFIN
19710
IOWA

I hereby certify that this land surveying document was prepared and the related survey work was performed by me or under my direct personal supervision and that I am a duly licensed Professional Land Surveyor under the laws of the State of Iowa.

Erin D. Griffin, PLS Date

License Number 19710

My License Renewal Date is December 31, 2025

Pages or sheets covered by this seal:
Sheets 1 and 2, of 2

PT. LOT 7, CRAWFORD CREEK

PLAT OF SURVEY - BOUNDARY LINE ADJUSTMENT

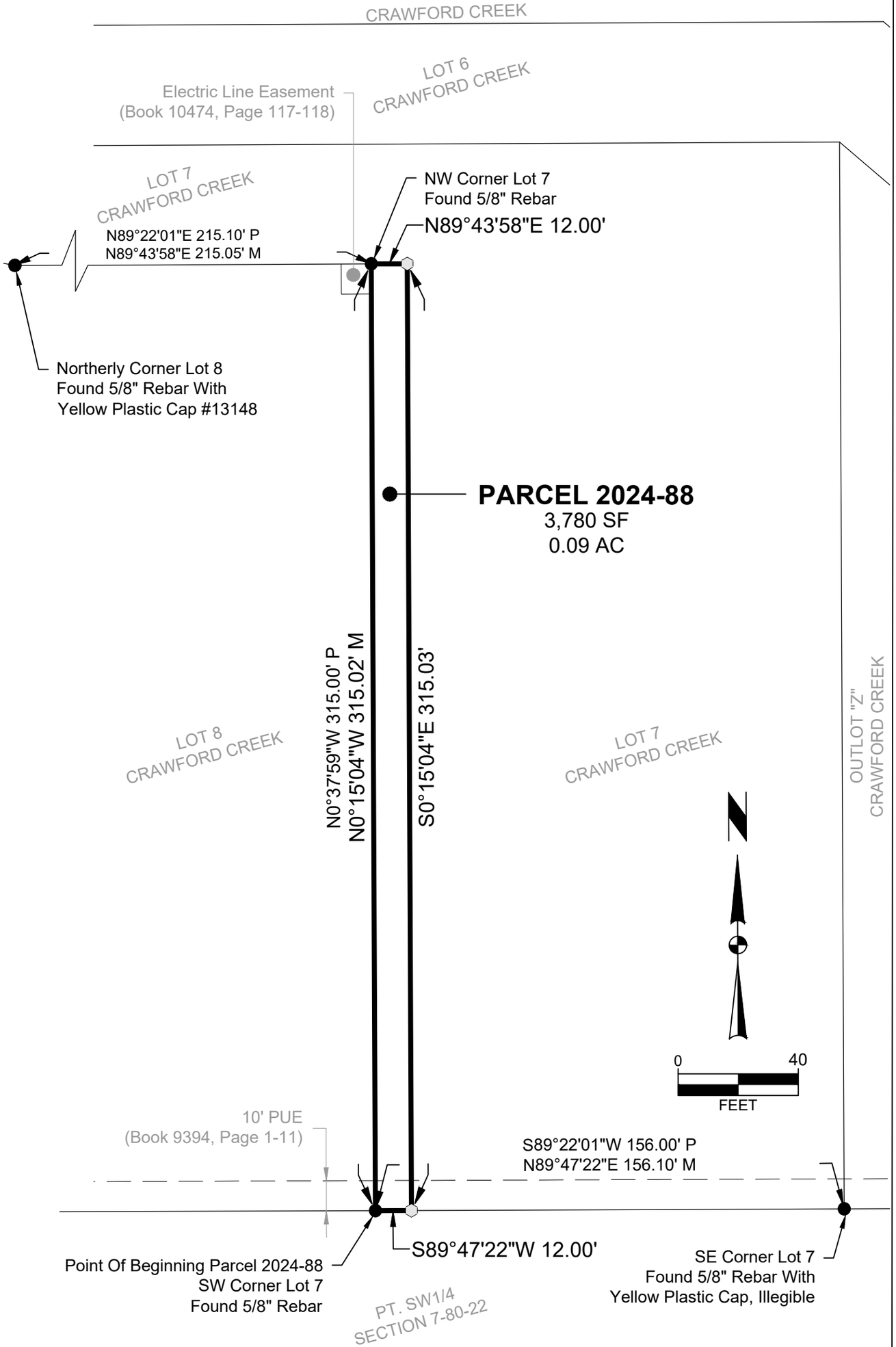
SNYDER & ASSOCIATES

2727 S.W. SNYDER BLVD
ANKENY, IOWA 50023
515-964-2020

SHEET 1 OF 2
PN: 124.0525.01
T-R-S:80N-22W-7
DATE: 04/24/2024
PM/TECH: EDG/AJD

V:\Projects\2024\124.0525.01\CADD\PLOS_1240525.dwg

PLAT OF SURVEY
BOUNDARY LINE ADJUSTMENT



PT. LOT 7, CRAWFORD CREEK

PLAT OF SURVEY - BOUNDARY LINE ADJUSTMENT

SNYDER & ASSOCIATES

2727 S.W. SNYDER BLVD
ANKENY, IOWA 50023
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SHEET 2 OF 2
PN: 124.0525.01
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BUSINESS OF THE CITY COUNCIL
BONDURANT, IOWA
AGENDA STATEMENT

Item No. 5.k.
For Meeting of 6/17/2024
Resolution

TITLE: - Resolution approving additional Civic Campus Phase I easement and right-of-entry documents for the Myers 1 Certified Site area and authorizing payment for such land rights in the amount of $66,159

CONTACT PERSON:
Maggie Murray, Planning & Community Development Director

BRIEF HISTORY & ANALYSIS: The attached resolution approves the necessary easement and right-of-entry documents and also payment for such land rights associated with additional easement needs included as part of Phase I of the Civic Campus construction project. The City Council previously approved a resolution establishing other easements necessary for Phase I during their meeting on June 3, 2024, for land in the areas of Parcels 8022-32-200-004, 8022-32-176-001, and 8022-29-400-017. The resolution being considered is for land needs associated with the Myers 1 Certified Site area. The right-of-entry document has been prepared to ensure the City and its contractors have access to the Myers 1 easement areas prior to the easements being recorded.

FUNDING SOURCE: TIF/GO Bond

STAFF RECOMMENDATION: Approve resolution on a roll call vote.

APPROVED FOR SUBMITTAL:

ATTACHMENTS:
1. RESOLUTION NO. 240617-127
2. 42892 E-08-P1 Business Park Easement_
3. 42892 E-08-P2 Business Park Easement_
4. 42892 E-08-T1 Business Park Easement_
5. Temporary Right of Entry 08-T2 Business Park

CITY OF BONDURANT
RESOLUTION NO. 240617-127

RESOLUTION APPROVING ADDITIONAL CIVIC CAMPUS PHASE I EASEMENT AND RIGHT-OF-ENTRY DOCUMENTS FOR THE AREA OF THE MYERS I CERTIFIED SITE AND AUTHORIZING PAYMENT FOR SUCH LAND RIGHTS IN THE AMOUNT OF $66,159

WHEREAS the Building Bondurant Comprehensive Plan included the following Policy: Follow and Implement the recommendations outlined in the Civic Campus Master Plan to help support City Departments in maintaining an efficient infrastructure system; and

WHEREAS the City of Bondurant is in the process of the design and construction of certain public improvements associated with Phase I of implementing the Civic Campus Master Plan so that proper access and service is available to the first building to be constructed in the Civic Campus, which will be the Bondurant Emergency Services Facility; and

WHEREAS the construction of the public improvements requires the acquisition of certain real estate interests, including temporary easements, permanent easements, and the acquisition of property by fee title; and

WHEREAS City staff and engineers have made certain offers for the acquisition of real property interests with those offers being considered by the respective property owner, and

WHEREAS it is necessary for the City to approve the acquisitions, authorize the payment of the agreed to compensation for the property acquisitions and to move forward with the completion and closing on the property acquisitions upon acceptance by the property owners.

WHEREAS the City Administrator is authorized to undertake such steps as are necessary to close the appropriate transactions including the authorization for payment of any costs associated with the closing of transactions.

NOW, THEREFORE, BE IT RESOLVED, by the City Council of the City of Bondurant, Iowa, that the easement and right-of-entry documents between the City of Bondurant and Bondurant Business Park II LLC is hereby approved, including authorizing payment for such land rights in the amount of $66,159, and the Mayor, City Administrator, and City Clerk are authorized to take necessary actions to effect the execution and recording of said documents.

Passed this 17th day of June 2024,

By: _____
Doug Elrod, Mayor

ATTEST: I, Shelby Hagan, City Clerk of Bondurant, hereby certify that at a meeting of the City Council held on the above date, among other proceedings the above was adopted.

IN WITNESS WHEREOF, I have hereunto set my hand the day and year above written.

_____
Shelby Hagan, City Clerk

Council Action	Ayes	Nays	Abstain	Absent
Cox				
Driscoll				
McKenzie				
Peffer				
Sillanpaa				

PERPETUAL SANITARY SEWER EASEMENT

Recorder's Cover Sheet

Preparer Information: (name, address and phone number)
Veenstra & Kimm, Inc.
William J. Weber
3000 Westown Parkway
West Des Moines, Iowa 50266
(515) 225-8000

Return Document To: (name and complete address)
City of Bondurant, Iowa
Attn: Marketa Oliver, City Administrator
200 2nd Street NE
P.O. Box 37
Bondurant, Iowa 50035

Grantor: **Bondurant Business Park II, L.L.C.**

Grantee: **City of Bondurant, Iowa**

PERPETUAL SANITARY SEWER EASEMENT

KNOW ALL BY THESE PRESENT:

That we, the undersigned, Bondurant Business Park II, L.L.C., (hereinafter referred to as "Grantor(s)"), in consideration of $_____ in hand paid by the CITY OF BONDURANT, IOWA, the receipt of which is hereby acknowledged do hereby sell, grant and convey unto the City of Bondurant, Iowa, a municipal corporation, in the County of Polk, State of Iowa, an easement under, through and across the following described real estate:

A PART OF THE NORTHWEST QUARTER OF SECTION 32, TOWNSHIP 80 NORTH, RANGE 22 WEST OF THE FIFTH PRINCIPAL MERIDIAN, POLK COUNTY, IOWA AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:

Perpetual Easement (see attached Exhibit 08-P1)

COMMENCING AT THE NORTH QUARTER CORNER OF SAID SECTION 32; THENCE SOUTH 00°02'07" EAST ALONG THE EAST LINE OF SAID NORTHWEST QUARTER, 40.00 FEET TO THE SOUTH RIGHT-OF-WAY LINE OF NE 78th STREET AS SHOWN ON THE ACQUISITION PLAT FOR ROAD RIGHT-OF-WAY RECORDED IN BOOK 19672, PAGE 826 IN THE POLK COUNTY RECORDER'S OFFICE AND THE POINT OF BEGINNING; THENCE CONTINUING SOUTH 00°02'07" EAST ALONG SAID EAST LINE, 20.00 FEET; THENCE NORTH 89°47'36" WEST, 1222.60 FEET TO SAID SOUTH RIGHT-OF-WAY LINE; THENCE NORTHEASTERLY ALONG SAID SOUTH RIGHT-OF-WAY LINE AND ALONG A 460.00 FOOT RADIUS CURVE CONCAVE TO THE SOUTHEAST WHOSE ARC LENGTH IS 136.14 FEET AND WHOSE CHORD BEARS NORTH 81°43'41" EAST, 135.65 FEET; THENCE SOUTH 89°47'36" EAST ALONG SAID SOUTH RIGHT-OF-WAY LINE, 1088.35 FEET TO THE POINT OF BEGINNING AND CONTAINING 23,565 SQUARE FEET (0.54 ACRES).

That said easement is granted unto the City of Bondurant, Iowa, for the purpose of the construction, installation and maintenance of the following described public improvement:

Civic Campus Improvements

In connection herewith it is specifically agreed that by this easement, the City of Bondurant shall have the right to enter upon said premises as shall be necessary to construct, reconstruct, inspect, repair, operate and maintain and service any and all of said improvements and all appurtenances thereto, together with the right to use and operate said improvements as it deems necessary.

The said municipal corporation shall restore said described land to a satisfactory condition after construction and/or maintenance in substantially the same condition as prior to entry.

It is further agreed that no permanent improvement shall be built or placed upon the above described easement, and that if such improvements are built or constructed, in violation of this easement, the City of Bondurant shall in no way be responsible for any damages thereto resulting from the construction, reconstruction, maintenance or repair of the aforesaid improvements.

That the grantors do hereby covenant with the said grantee, and successors in interest, that said grantors hold said real estate by title and fee simple; that they have good and lawful authority to sell and convey the same; that said premises are free and clear of all liens and encumbrances whatsoever except as may be herein above stated; that said grantors covenant to warrant and defend the said premises against the lawful claims of all persons whomsoever, except as may be above stated.

Each of the undersigned hereby relinquishes all rights of dower, homestead and distributive share, if any, in and to the interests conveyed by this Easement.

Words phrases herein including acknowledgment hereof shall be construed as in the singular or plural number, and as masculine or feminine gender, according to the context.

Signed this _____ day of _____, 2024.

BONDURANT BUSINESS PARK II, L.L.C.

_____
Signature

_____
Printed Name

Title, _____

Acknowledgment

STATE OF_____)
) ss.
COUNTY OF_____)

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

_____, Notary Public

EASEMENT DRAWING

FOR SANITARY SEWER BEING CONVEYED TO
THE CITY OF BONDURANT, IOWA

PARCEL NO.:
231/00021-009-001
231/00021-009-002

PROPERTY OWNER:
BONDURANT BUSINESS PARK II, L.L.C.
2540 73RD STREET
URBANDALE, IA 50322
BOOK 19023, PAGE 740
BOOK 19056, PAGE 122

PHYSICAL ADDRESS:
NA

LEGAL DESCRIPTION:

A PART OF THE NORTHWEST QUARTER OF SECTION 32, TOWNSHIP 80 NORTH, RANGE 22 WEST OF THE FIFTH PRINCIPAL MERIDIAN, POLK COUNTY, IOWA AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:

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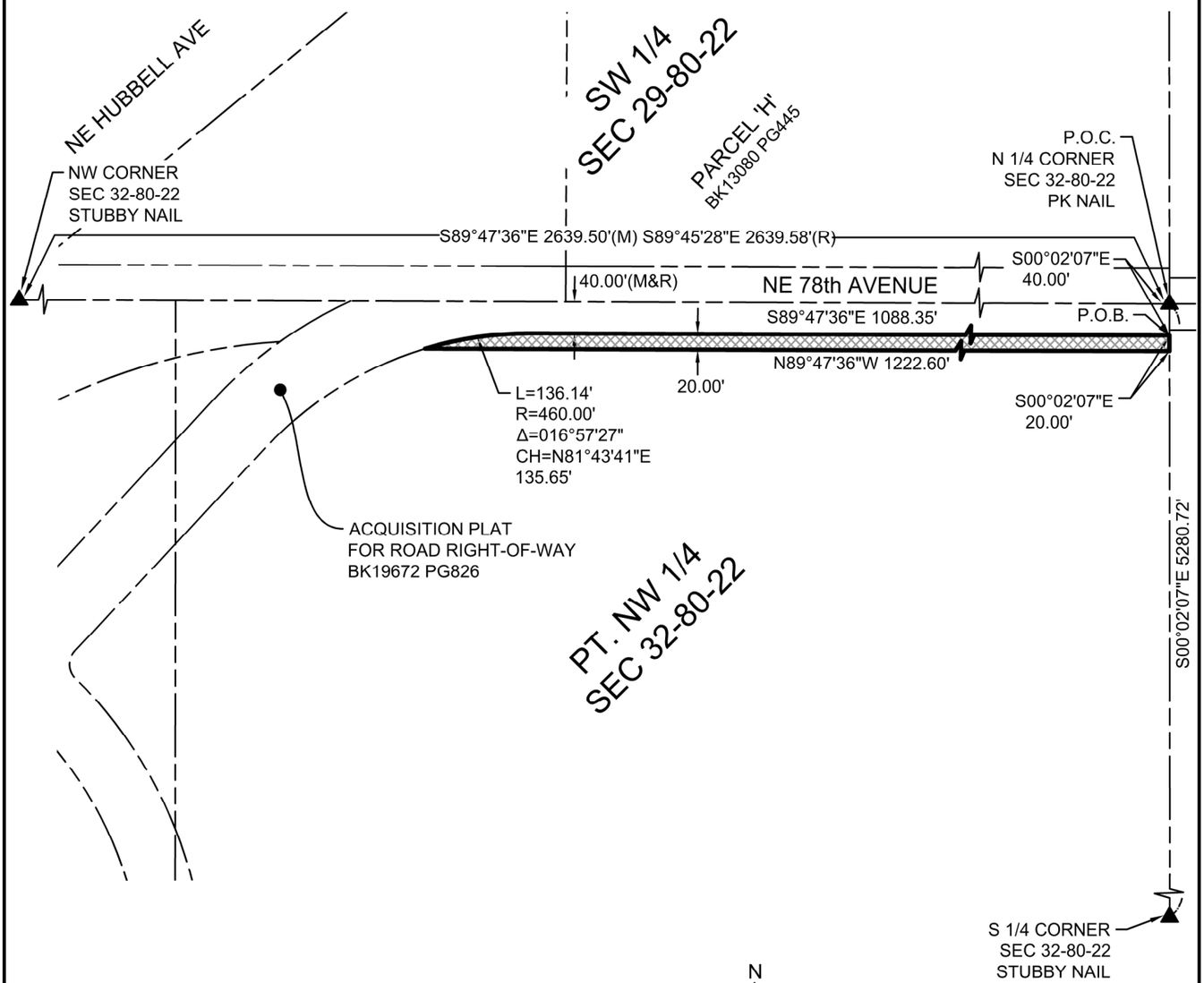

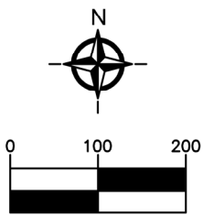

1 Inch = 200 ft.

LEGEND

▲	FOUND SECTION CORNER MONUMENT
●	FOUND PROPERTY MONUMENT
(M)	MEASURED BEARING OR DIMENSION
(R)	RECORDED BEARING OR DIMENSION
———	SECTION LINE
– – – –	PROPERTY LINE
▨	PERPETUAL EASEMENT AREA 23,565 SQ.FT. (0.54 ACRES)

CIVIC CAMPUS IMPROVEMENTS

VEENSTRA & KIMM INC.
3000 WESTOWN PKWY - WEST DES MOINES, IA 50265 - (515) 225-8000

EXHIBIT 08-P1 SHEET 1 OF 1

DRAWN TJP CHECKED MDL APPROVED MDL DATE 01-04-2024

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PERPETUAL STORM WATER DRAINAGE EASEMENT

Recorder's Cover Sheet

Preparer Information: (name, address and phone number)
Veenstra & Kimm, Inc.
William J. Weber
3000 Westown Parkway
West Des Moines, Iowa 50266
(515) 225-8000

Return Document To: (name and complete address)
City of Bondurant, Iowa
Attn: Marketa Oliver, City Administrator
200 2nd Street NE
P.O. Box 37
Bondurant, Iowa 50035

Grantor: **Bondurant Business Park II, L.L.C.**

Grantee: **City of Bondurant, Iowa**

PERPETUAL STORM WATER DRAINAGE EASEMENT

KNOW ALL BY THESE PRESENT:

That we, the undersigned, Bondurant Business Park II, L.L.C., (hereinafter referred to as "Grantor(s)"), in consideration of $_____ in hand paid by the CITY OF BONDURANT, IOWA, the receipt of which is hereby acknowledged do hereby sell, grant and convey unto the City of Bondurant, Iowa, a municipal corporation, in the County of Polk, State of Iowa, an easement under, through and across the following described real estate:

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Perpetual Easement (see attached Exhibit 08-P2)

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That said easement is granted unto the City of Bondurant, Iowa, for the purpose of the construction, installation and maintenance of the following described public improvement:

Civic Campus Improvements

In connection herewith it is specifically agreed that by this easement, the City of Bondurant shall have the right to enter upon said premises as shall be necessary to construct, reconstruct, inspect, repair, operate and maintain and service any and all of said improvements and all appurtenances thereto, together with the right to use and operate said improvements as it deems necessary.

The said municipal corporation shall restore said described land to a satisfactory condition after construction and/or maintenance in substantially the same condition as prior to entry.

It is further agreed that no permanent improvement shall be built or placed upon the above described easement, and that if such improvements are built or constructed, in violation of this easement, the City of Bondurant shall in no way be responsible for any damages thereto resulting from the construction, reconstruction, maintenance or repair of the aforesaid improvements.

That the grantors do hereby covenant with the said grantee, and successors in interest, that said grantors hold said real estate by title and fee simple; that they have good and lawful authority to sell and convey the same; that said premises are free and clear of all liens and encumbrances whatsoever except as may be herein above stated; that said grantors covenant to warrant and defend the said premises against the lawful claims of all persons whomsoever, except as may be above stated.

Each of the undersigned hereby relinquishes all rights of dower, homestead and distributive share, if any, in and to the interests conveyed by this Easement.

Words phrases herein including acknowledgment hereof shall be construed as in the singular or plural number, and as masculine or feminine gender, according to the context.

Signed this _____ day of _____, 2024.

BONDURANT BUSINESS PARK II, L.L.C.

_____
Signature

_____
Printed Name

Title, _____

Acknowledgment

STATE OF_____)
) ss.
COUNTY OF_____)

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

_____, Notary Public

EASEMENT DRAWING

FOR STORM WATER DRAINAGE BEING CONVEYED TO
THE CITY OF BONDURANT, IOWA

PARCEL NO.:
231/00021-009-001
231/00021-009-002

PROPERTY OWNER:
BONDURANT BUSINESS PARK II, L.L.C.
2540 73RD STREET
URBANDALE, IA 50322
BOOK 19023, PAGE 740
BOOK 19056, PAGE 122

PHYSICAL ADDRESS:
NA

LEGAL DESCRIPTION:

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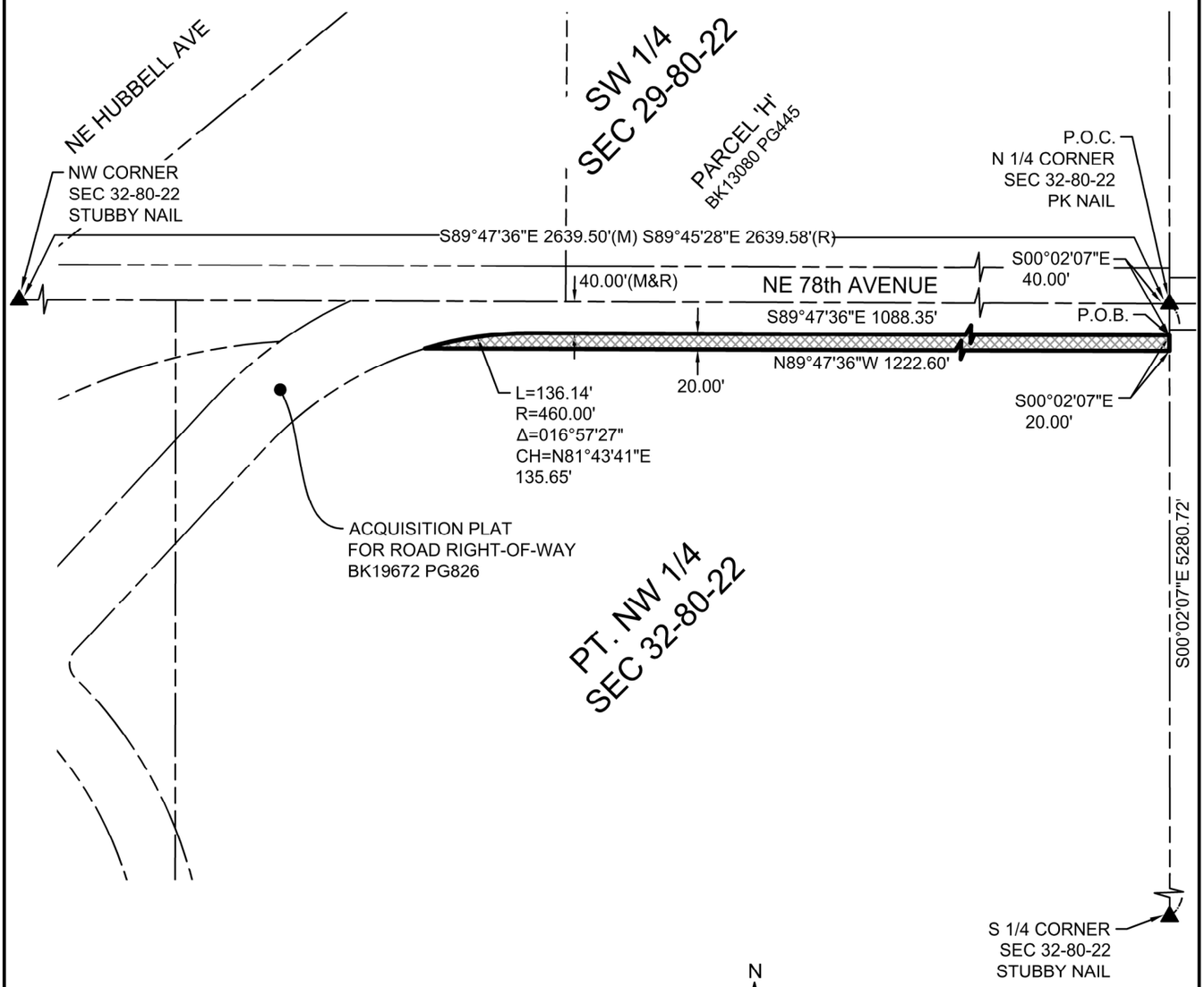

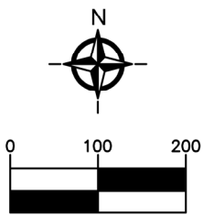

1 Inch = 200 ft.

LEGEND

▲	FOUND SECTION CORNER MONUMENT
●	FOUND PROPERTY MONUMENT
(M)	MEASURED BEARING OR DIMENSION
(R)	RECORDED BEARING OR DIMENSION
———	SECTION LINE
– – – –	PROPERTY LINE
▨	PERPETUAL EASEMENT AREA 23,565 SQ.FT. (0.54 ACRES)

CIVIC CAMPUS IMPROVEMENTS

VEENSTRA & KIMM INC.
3000 WESTOWN PKWY - WEST DES MOINES, IA 50265 - (515) 225-8000

EXHIBIT 08-P2 SHEET 1 OF 1

DRAWN TJP CHECKED MDL APPROVED MDL DATE 01-04-2024

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TEMPORARY CONSTRUCTION EASEMENT

Recorder's Cover Sheet

Preparer Information: (name, address and phone number)
Veenstra & Kimm, Inc.
William J. Weber
3000 Westown Parkway
West Des Moines, Iowa 50266
(515) 225-8000

Return Document To: (name and complete address)
City of Bondurant, Iowa
Attn: Marketa Oliver, City Administrator
200 2nd Street NE
P.O. Box 37
Bondurant, Iowa 50035

Grantor: **Bondurant Business Park II, L.L.C.**

Grantee: **City of Bondurant, Iowa**

TEMPORARY CONSTRUCTION EASEMENT

KNOW ALL BY THESE PRESENT:

That we, the undersigned, Bondurant Business Park II, L.L.C., (hereinafter referred to as "Grantor(s)"), in consideration of $_____ in hand paid by the CITY OF BONDURANT, IOWA, the receipt of which is hereby acknowledged do hereby sell, grant and convey unto the City of Bondurant, Iowa, a municipal corporation, in the County of Polk, State of Iowa, an easement under, through and across the following described real estate:

A PART OF THE NORTHWEST QUARTER OF SECTION 32, TOWNSHIP 80 NORTH, RANGE 22 WEST OF THE FIFTH PRINCIPAL MERIDIAN, POLK COUNTY, IOWA AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:

Temporary Easement (see attached Exhibit 08-T1)

COMMENCING AT THE NORTH QUARTER CORNER OF SAID SECTION 32; THENCE SOUTH 00°02'07" EAST ALONG THE EAST LINE OF SAID NORTHWEST QUARTER, 60.00 FEET TO THE POINT OF BEGINNING; THENCE CONTINUING SOUTH 00°02'07" EAST ALONG SAID EAST LINE, 30.00 FEET; THENCE NORTH 89°47'36" WEST, 1218.18 FEET; THENCE SOUTHWESTERLY ALONG A 430.00 FOOT RADIUS CURVE CONCAVE TO THE SOUTHEAST WHOSE ARC LENGTH IS 221.23 FEET AND WHOSE CHORD BEARS SOUTH 57°55'27" WEST, 218.80 FEET; THENCE SOUTH 43°11'06" WEST, 349.80 FEET; THENCE SOUTHEASTERLY ALONG A 590.00 FOOT RADIUS CURVE CONCAVE TO THE SOUTHWEST WHOSE ARC LENGTH IS 463.29 FEET AND WHOSE CHORD BEARS SOUTH 22°26'37" EAST, 451.47 FEET; THENCE SOUTH 00°03'06"WEST, 589.19 FEET; THENCE SOUTHEASTERLY ALONG A 450.00 FOOT RADIUS CURVE CONCAVE TO THE EAST WHOSE ARC LENGTH IS 236.33 FEET AND WHOSE CHORD BEARS SOUTH 14°59'37" EAST, 233.62 FEET; THENCE SOUTH 30°02'20" EAST, 158.97 FEET; THENCE SOUTHEASTERLY ALONG A 590.00 FOOT RADIUS CURVE CONCAVE TO THE SOUTHWEST WHOSE ARC LENGTH IS 161.24 FEET AND WHOSE CHORD BEARS SOUTH 22°12'34" EAST, 160.74 FEET; THENCE NORTH 89°47'36" WEST, 31.06 FEET; THENCE NORTHWESTERLY ALONG A 560.00 FOOT RADIUS CURVE CONCAVE TO THE SOUTHWEST WHOSE ARC LENGTH IS 145.22 FEET AND WHOSE CHORD BEARS NORTH 22°36'35" WEST, 144.82 FEET; THENCE NORTH 30°02'20" WEST, 158.97 FEET; THENCE NORTHWESTERLY ALONG A 480.00 FOOT RADIUS CURVE CONCAVE TO THE EAST WHOSE ARC LENGTH IS 252.09 FEET AND WHOSE CHORD BEARS NORTH 14°59'37" WEST, 249.20 FEET; THENCE NORTH 00°03'06" EAST, 589.19 FEET; THENCE NORTHWESTERLY ALONG A 560.00 FOOT RADIUS CURVE CONCAVE TO THE SOUTHWEST WHOSE ARC LENGTH IS 444.36 FEET AND WHOSE CHORD BEARS NORTH 22°40'49" WEST, 432.79 FEET; THENCE NORTHWESTERLY ALONG A 25.00 FOOT RADIUS CURVE CONCAVE TO THE EAST WHOSE ARC LENGTH IS 38.66 FEET AND WHOSE CHORD BEARS NORTH 01°06'49" WEST, 34.92 FEET; THENCE NORTH 43°11'06" EAST, 354.66 FEET; THENCE

NORTHEASTERLY ALONG A 460.00 FOOT RADIUS CURVE CONCAVE TO THE SOUTHEAST WHOSE ARC LENGTH IS 241.37 FEET AND WHOSE CHORD BEARS NORTH 58°13'02" EAST, 238.61 FEET; THENCE SOUTH 89°47'36" EAST, 1222.60 FEET TO THE POINT OF BEGINNING AND CONTAINING 102,705 SQUARE FEET (2.36 ACRES).

That said easement is granted unto the City of Bondurant, Iowa, for the purpose of the construction, installation and maintenance of the following described public improvement:

Civic Campus Improvements

In connection herewith it is specifically agreed that by this easement, the City of Bondurant shall have the right to enter upon said premises as shall be necessary to construct, reconstruct, inspect, repair, operate and maintain and service any and all of said improvements and all appurtenances thereto, together with the right to use and operate said improvements as it deems necessary.

The temporary construction easement shall be for a period of 24 months from the date of construction at which time the temporary construction easement will cease and terminate.

The said municipal corporation shall restore said described land to a satisfactory condition after construction and/or maintenance in substantially the same condition as prior to entry.

That the grantors do hereby covenant with the said grantee, and successors in interest, that said grantors hold said real estate by title and fee simple; that they have good and lawful authority to sell and convey the same; that said premises are free and clear of all liens and encumbrances whatsoever except as may be herein above stated; that said grantors covenant to warrant and defend the said premises against the lawful claims of all persons whomsoever, except as may be above stated.

Each of the undersigned hereby relinquishes all rights of dower, homestead and distributive share, if any, in and to the interests conveyed by this Easement.

Words phrases herein including acknowledgment hereof shall be construed as in the singular or plural number, and as masculine or feminine gender, according to the context.

Signed this _____ day of _____, 2024.

BONDURANT BUSINESS PARK II, L.L.C.

_____
Signature

_____
Printed Name

Title, _____

Acknowledgment

STATE OF_____)
) ss.
COUNTY OF_____)

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

_____, Notary Public

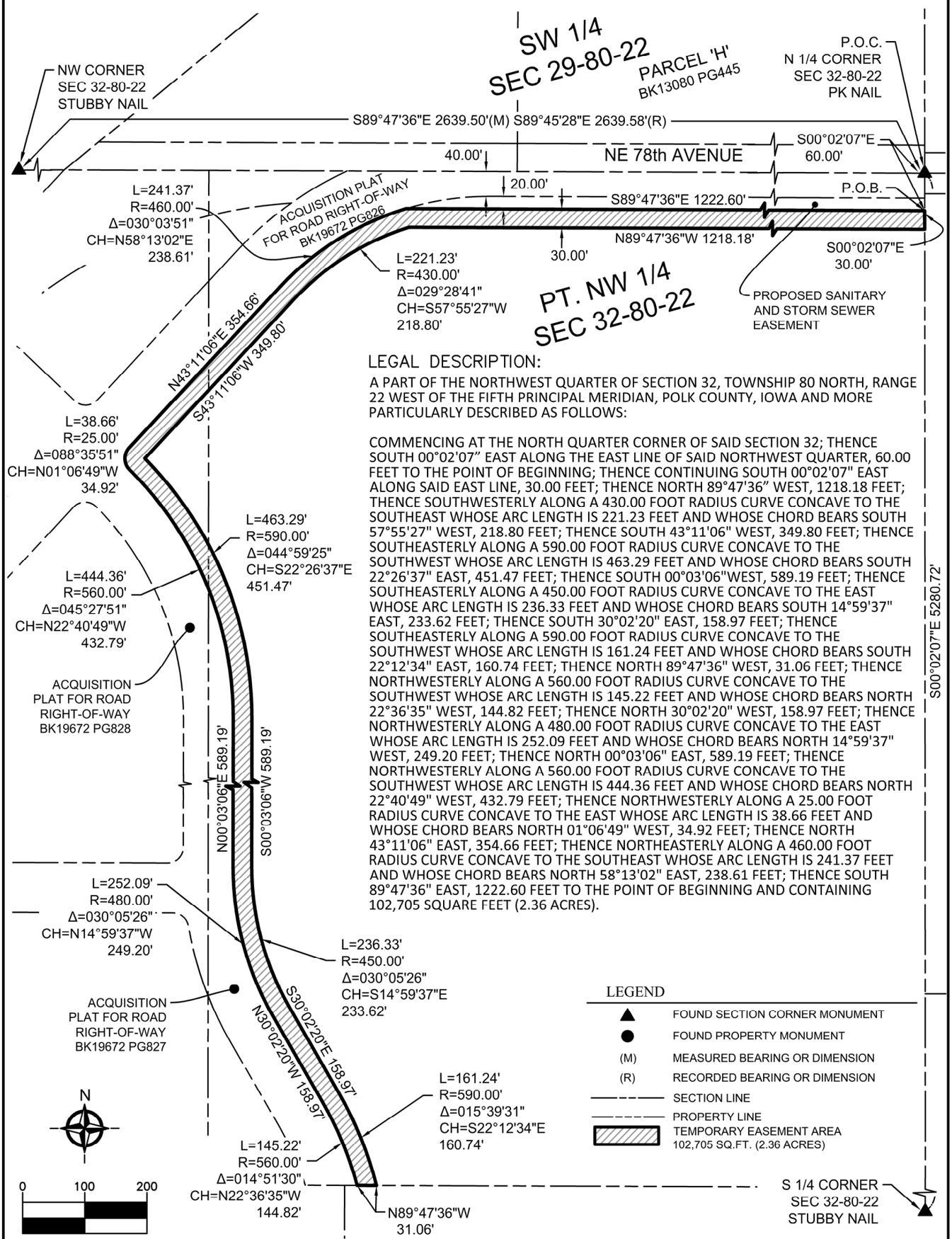
EASEMENT DRAWING

FOR TEMPORARY CONSTRUCTION BEING CONVEYED TO
THE CITY OF BONDURANT, IOWA

PROPERTY OWNER:
BONDURANT BUSINESS PARK II, L.L.C.
2540 73RD STREET
URBANDALE, IA 50322
BOOK 19023, PAGE 740
BOOK 19056, PAGE 122

PARCEL NO.:
231/00021-009-001
231/00021-009-002

PHYSICAL ADDRESS:
NA



LEGAL DESCRIPTION:

A PART OF THE NORTHWEST QUARTER OF SECTION 32, TOWNSHIP 80 NORTH, RANGE 22 WEST OF THE FIFTH PRINCIPAL MERIDIAN, POLK COUNTY, IOWA AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTH QUARTER CORNER OF SAID SECTION 32; THENCE SOUTH 00°02'07" EAST ALONG THE EAST LINE OF SAID NORTHWEST QUARTER, 60.00 FEET TO THE POINT OF BEGINNING; THENCE CONTINUING SOUTH 00°02'07" EAST ALONG SAID EAST LINE, 30.00 FEET; THENCE NORTH 89°47'36" WEST, 1218.18 FEET; THENCE SOUTHWESTERLY ALONG A 430.00 FOOT RADIUS CURVE CONCAVE TO THE SOUTHEAST WHOSE ARC LENGTH IS 221.23 FEET AND WHOSE CHORD BEARS SOUTH 57°55'27" WEST, 218.80 FEET; THENCE SOUTH 43°11'06" WEST, 349.80 FEET; THENCE SOUTHEASTERLY ALONG A 590.00 FOOT RADIUS CURVE CONCAVE TO THE SOUTHWEST WHOSE ARC LENGTH IS 463.29 FEET AND WHOSE CHORD BEARS SOUTH 22°26'37" EAST, 451.47 FEET; THENCE SOUTH 00°03'06"WEST, 589.19 FEET; THENCE SOUTHEASTERLY ALONG A 450.00 FOOT RADIUS CURVE CONCAVE TO THE EAST WHOSE ARC LENGTH IS 236.33 FEET AND WHOSE CHORD BEARS SOUTH 14°59'37" EAST, 233.62 FEET; THENCE SOUTH 30°02'20" EAST, 158.97 FEET; THENCE SOUTHEASTERLY ALONG A 590.00 FOOT RADIUS CURVE CONCAVE TO THE SOUTHWEST WHOSE ARC LENGTH IS 161.24 FEET AND WHOSE CHORD BEARS SOUTH 22°12'34" EAST, 160.74 FEET; THENCE NORTH 89°47'36" WEST, 31.06 FEET; THENCE NORTHWESTERLY ALONG A 560.00 FOOT RADIUS CURVE CONCAVE TO THE SOUTHWEST WHOSE ARC LENGTH IS 145.22 FEET AND WHOSE CHORD BEARS NORTH 22°36'35" WEST, 144.82 FEET; THENCE NORTH 30°02'20" WEST, 158.97 FEET; THENCE NORTHWESTERLY ALONG A 480.00 FOOT RADIUS CURVE CONCAVE TO THE EAST WHOSE ARC LENGTH IS 252.09 FEET AND WHOSE CHORD BEARS NORTH 14°59'37" WEST, 249.20 FEET; THENCE NORTH 00°03'06" EAST, 589.19 FEET; THENCE NORTHWESTERLY ALONG A 560.00 FOOT RADIUS CURVE CONCAVE TO THE SOUTHWEST WHOSE ARC LENGTH IS 444.36 FEET AND WHOSE CHORD BEARS NORTH 22°40'49" WEST, 432.79 FEET; THENCE NORTHWESTERLY ALONG A 25.00 FOOT RADIUS CURVE CONCAVE TO THE EAST WHOSE ARC LENGTH IS 38.66 FEET AND WHOSE CHORD BEARS NORTH 01°06'49" WEST, 34.92 FEET; THENCE NORTH 43°11'06" EAST, 354.66 FEET; THENCE NORTHEASTERLY ALONG A 460.00 FOOT RADIUS CURVE CONCAVE TO THE SOUTHEAST WHOSE ARC LENGTH IS 241.37 FEET AND WHOSE CHORD BEARS NORTH 58°13'02" EAST, 238.61 FEET; THENCE SOUTH 89°47'36" EAST, 1222.60 FEET TO THE POINT OF BEGINNING AND CONTAINING 102,705 SQUARE FEET (2.36 ACRES).

LEGEND

- ▲ FOUND SECTION CORNER MONUMENT
- ● FOUND PROPERTY MONUMENT
- (M) MEASURED BEARING OR DIMENSION
- (R) RECORDED BEARING OR DIMENSION
- SECTION LINE
- PROPERTY LINE
- TEMPORARY EASEMENT AREA 102,705 SQ.FT. (2.36 ACRES)

CIVIC CAMPUS IMPROVEMENTS

VEENSTRA & KIMM INC.
3000 WESTOWN PKWY - WEST DES MOINES, IA 50265 - (515) 225-8000

EXHIBIT 08-T1 SHEET 1 OF 1

DRAWN TJP CHECKED MDL APPROVED MDL DATE 01-04-2024

P:\42892\42892-SURVEY\PLATS\42892 EAS-08 T1.dwg 5/22/2024 8:38 AM

Prepared by: Veenstra & Kimm, Inc., 3000 Westown Parkway, West Des Moines, Iowa 50266

Project: Civic Campus Improvements Parcel #231/00021-009-001
Project Location: Campus Drive 231/00021-009-002

TEMPORARY RIGHT-OF-ENTRY

The Bondurant Business Park II, L.L.C. (hereinafter referred to as the "Grantor" does hereby grant unto the City of Bondurant (hereinafter referred to as the "CITY"), a Temporary Right-of-Entry under, over, through and across the following described property:

A PART OF THE NORTHWEST QUARTER OF SECTION 32, TOWNSHIP 80 NORTH, RANGE 22 WEST OF THE FIFTH PRINCIPAL MERIDIAN, POLK COUNTY, IOWA AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTH QUARTER CORNER OF SAID SECTION 32; THENCE SOUTH 00°02'07" EAST ALONG THE EAST LINE OF SAID NORTHWEST QUARTER, 40.00 FEET TO THE POINT OF BEGINNING; THENCE CONTINUING SOUTH 00°02'07" EAST ALONG SAID EAST LINE, 50.00 FEET; THENCE NORTH 89°47'36" WEST, 1218.18 FEET; THENCE SOUTHWESTERLY ALONG A 430.00 FOOT RADIUS CURVE CONCAVE TO THE SOUTHEAST WHOSE ARC LENGTH IS 221.23 FEET AND WHOSE CHORD BEARS SOUTH 57°55'27" WEST, 218.80 FEET; THENCE SOUTH 43°11'06" WEST, 349.80 FEET; THENCE SOUTHEASTERLY ALONG A 590.00 FOOT RADIUS CURVE CONCAVE TO THE SOUTHWEST WHOSE ARC LENGTH IS 463.29 FEET AND WHOSE CHORD BEARS SOUTH 22°26'37" EAST, 451.47 FEET; THENCE SOUTH 00°03'06"WEST, 589.19 FEET; THENCE SOUTHEASTERLY ALONG A 450.00 FOOT RADIUS CURVE CONCAVE TO THE EAST WHOSE ARC LENGTH IS 236.33 FEET AND WHOSE CHORD BEARS SOUTH 14°59'37" EAST, 233.62 FEET; THENCE SOUTH 30°02'20" EAST, 158.97 FEET; THENCE SOUTHEASTERLY ALONG A 590.00 FOOT RADIUS CURVE CONCAVE TO THE SOUTHWEST WHOSE ARC LENGTH IS 161.24 FEET AND WHOSE CHORD BEARS SOUTH 22°12'34" EAST, 160.74 FEET; THENCE NORTH 89°47'36" WEST, 31.06 FEET; THENCE NORTHWESTERLY ALONG A 560.00 FOOT RADIUS CURVE CONCAVE TO THE SOUTHWEST WHOSE ARC LENGTH IS 145.22 FEET AND WHOSE CHORD BEARS NORTH 22°36'35" WEST, 144.82 FEET; THENCE NORTH 30°02'20" WEST, 158.97 FEET; THENCE NORTHWESTERLY ALONG A 480.00 FOOT RADIUS CURVE CONCAVE TO THE EAST WHOSE ARC LENGTH IS 252.09 FEET AND WHOSE CHORD BEARS NORTH 14°59'37" WEST, 249.20 FEET; THENCE NORTH 00°03'06" EAST, 589.19 FEET; THENCE NORTHWESTERLY ALONG A 560.00 FOOT RADIUS CURVE CONCAVE TO THE SOUTHWEST WHOSE ARC LENGTH IS 444.36 FEET AND WHOSE CHORD BEARS NORTH 22°40'49" WEST, 432.79 FEET; THENCE NORTHWESTERLY ALONG A 25.00 FOOT RADIUS CURVE CONCAVE TO THE EAST WHOSE ARC LENGTH IS 38.66 FEET AND WHOSE CHORD BEARS NORTH 01°06'49" WEST, 34.92 FEET; THENCE NORTH 43°11'06" EAST, 354.66 FEET; THENCE NORTHEASTERLY ALONG A 460.00 FOOT RADIUS CURVE CONCAVE TO THE SOUTHEAST WHOSE ARC LENGTH IS 377.51 FEET AND WHOSE CHORD BEARS NORTH 66°41'45" EAST, 367.01 FEET; THENCE SOUTH 89°47'36" EAST, 1088.35 FEET TO THE POINT OF BEGINNING AND CONTAINING 126,270 SQUARE FEET (2.90 ACRES).

(hereinafter referred to as the "Property") for the limited purpose of allowing the CITY, its agents, contractors and employees access thereto for the purposes of beginning the Construction on the Civic Campus Improvements **Project**, (hereinafter referred to as the "Project") as per the plans and specifications for the construction of the project now on file in the office of the Public Works Director.

The said Right-of-Entry shall be for the limited purpose of allowing personnel and equipment thereon to build the Project.

1. **DURATION**. It is understood and agreed that this Easement allowing entry in, upon and onto the Easement Area described shall be in effect beginning on the date that the Grantor signs this document until the proposed acquisitions, perpetual and temporary easements are signed, recorded and in effect for the construction of this project above described and the CITY's performance of its obligation hereunder.

Signed this _____ day of _____, 2024

BONDURANT BUSINESS PARK II, L.L.C.

_____
Signature

_____
Printed Name

Title, _____

ACKNOWLEDGEMENT

State of _____)
ss.
County of _____)

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

_____, Notary Public

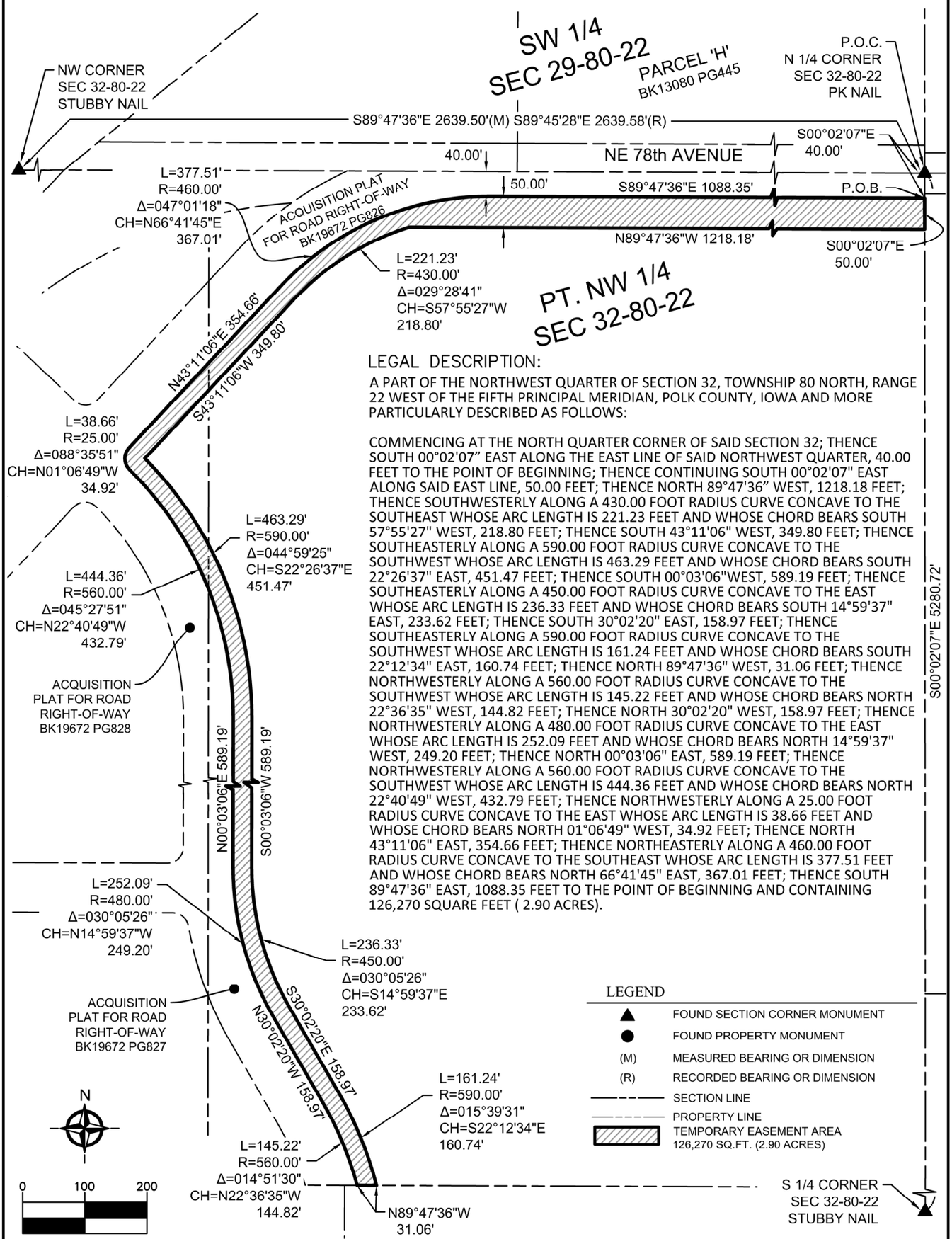
EASEMENT DRAWING

FOR TEMPORARY RIGHT-OF-ENTRY BEING CONVEYED TO
THE CITY OF BONDURANT, IOWA

PROPERTY OWNER:
BONDURANT BUSINESS PARK II, L.L.C.
2540 73RD STREET
URBANDALE, IA 50322
BOOK 19023, PAGE 740
BOOK 19056, PAGE 122

PARCEL NO.:
231/00021-009-001
231/00021-009-002

PHYSICAL ADDRESS:
NA



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LEGEND

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CIVIC CAMPUS IMPROVEMENTS

VEENSTRA & KIMM INC.
3000 WESTOWN PKWY - WEST DES MOINES, IA 50265 - (515) 225-8000

EXHIBIT 08-T2

SHEET 1 OF 1

DRAWN TJP CHECKED MDL APPROVED MDL DATE 01-04-2024

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BUSINESS OF THE CITY COUNCIL
BONDURANT, IOWA
AGENDA STATEMENT

Item No. 5.l.
For Meeting of 6/17/2024
Resolution

TITLE: - Resolution approving Pay Request No. 2 to Brothers Cleaning Corporation DBE Brothers Concrete for the Bondurant City Park Reconstruction Project in the amount of $286,770.96

CONTACT PERSON:
John Horton, Public Works Director

BRIEF HISTORY & ANALYSIS: Staff recommend the attached resolution to approve pay app #2 in the amount of $286,770.96 related to the Bondurant City Park Reconstruction Project.

This pay application has been reviewed by City Staff and Architects from RDG Planning and Design for accuracy and is for work completed on the project from January 19th,2024 through June 7th, 2024. We continue to make progress and the playground installation is slated to begin in July.

FUNDING SOURCE: CIP Budget

STAFF RECOMMENDATION: Approve resolution on a roll call vote.

APPROVED FOR SUBMITTAL:

ATTACHMENTS:
1. RESOLUTION NO. 240617-128
2. Bondurant City Park Phase 1 Pay Request No. 2

CITY OF BONDURANT
RESOLUTION NO. 240617-128

RESOLUTION APPROVING PAY REQUEST NO. 2 TO BROTHERS CLEANING CORP. dbe BROTHERS CONCRETE FOR THE BONDURANT CITY PARK RECONSTRUCTION PROJECT IN THE AMOUNT OF $286,770.96

WHEREAS, the Bondurant City Park Reconstruction Project Pay Request No. 2 was submitted on June 12th, 2024; AND

WHEREAS the pay request no. 2 is for work completed from January 19th, 2024, thru June 7th, 2024, on the Bondurant City Park Reconstruction Project; AND

WHERAS, City Staff and architects from RDG have reviewed the pay request for accuracy.

NOW, THEREFORE, BE IT RESOLVED, by the City Council of the City of Bondurant, Iowa, that the pay request no. 2 to Brothers Cleaning Corp. in the amount of $286,770.96 hereby approved.

Passed this 17th day of June 2024,

By: _____
Doug Elrod, Mayor

ATTEST: I, Shelby Hagan, City Clerk of Bondurant, hereby certify that at a meeting of the City Council held on the above date, among other proceedings the above was adopted.

IN WITNESS WHEREOF, I have hereunto set my hand the day and year above written.

_____
Shelby Hagan, City Clerk

Name	Yay	Nay	Abstain	Absent
Cox				
Driscoll				
McKenzie				
Peffer				
Sillanpaa				

APPLICATION AND CERTIFICATION FOR PAYMENT

TO:	City of Bondurant, Iowa 200 2nd Street NE, POB 37 Bondurant, Iowa 50035	**PROJECT NAME :**	Bondurant City Park Phase 1	**APPLICATION NO:**	~~00001~~ No. 2
				APPLICATION PERIOD TO	6/7/2024
				PROJECT NO:	
				CONTRACT DATE	11/10/2024
FROM:	Brothers Cleaning Corporation DBE Brothers Concrete 4000 Colfax Ave. Des Moines, IA 50317	**CERTIFYING AGENT :**	RDG Planning and Design 301 Grand Avenue Des Moines, IA		
CONTRACT FOR:	General Contract for Phase 1 - Bondurant City Park	**OWNER CONTRACT NO.**	3005.078.01		

ORIGINAL CONTRACT AMOUNT		$	392,453.04
NET CHARGE BY CHANGE ORDERS		$	617,299.50
REVISED CONCTRACT SUM		$	$1,009,752.54
TOTAL WORK COMPLETED & STORED TO DATE		$	$447,288.54
TOTAL RETAINAGE:	5.0%	$	$22,364.43
WORK COMPLETED AND STORED LESS RETAINAGE:		$	$424,924.11
PREVIOUS CERTICATES FOR PAYMENT		$	$138,153.15
AMOUNT DUE		$	$286,770.96
REMAINING CONTRACT BALANCE (RETAINAGE INCLUDED)			$584,828.43

The undersigned contractor certifies that, to the best of his or her knowledge, the work covered by this estimate has been completed in accordance with the contract documents and that all amounts due for materials, supplies and labor on this project have been or will be paid from money received from this progress estimate.

CONTRACTOR:

BY: Jose Cancino Date: 6/7/2024

Brothers Cleaning Corporation, dba Brothers Concrete

I have reviewed this pay application and recommend payment

BY: Date: 6/12/24

Mike, Bell, ASLA

RDG Planning & Design

Change Orders:

No.	Description	Cost
1	Playground	$617,299.50
2		
3		
4		

Summary of Payments:

No	Date	Amount
1	18-Jan	$ 138,153.89
2	---	$ -
4	---	$ -
	Total	$ -

A	B						C	D	E	F	G	H	I
						WORK COMPLETED							
ITEM	DESCRIPTION OF WORK	QTY	UNIT	UNIT PRICE	SCHEDULED VALUE	QTY COMPLETED	FROM PREVIOUS APPLICATION QTYs ONLY	FROM PREVIOUS APPLICATION (D+E)	THIS PERIOD	MATERIALS PRESENTLY STORED (NOT IN D OR E)	TOTAL COMPLETED AND STORED TO DATE (D+E+F)	% (G/C)	BALANCE TO FINISH (C - G)	RETAINAGE FOR THIS BILLING
EARTH WORK														
1	Vegetarion and Material Removals	1	LS	$ 38,970.00	$ 38,970.00	-	1.0		$ -		$ -	0%	$ 38,970.00	
2	Grading	1	LS	$ 5,000.00	$ 5,000.00	1.00	1.0		$ 5,000.00		$ 5,000.00	100%	$ -	
WATER MAIN														
3	Fire Hydrant Relocate	1	EA	$ 3,500.00	$ 3,500.00		1.0		$ -		$ -	0%	$ 3,500.00	
CONCRETE AND RELATED WORK														
4	Pavement, 6" PCC	3250	SF	$ 6.50	$ 21,125.00	-	3,250.0		$ -		$ -	0%	$ 21,125.00	
5	Curb and Gutter - 2'-6'', PCC	972	LF	$ 28.00	$ 27,216.00	350.0	622.0		$ 9,800.00		$ 9,800.00	36%	$ 17,416.00	
6	Pavement removals and Sidewalk	8918	SF	$ 1.68	$ 14,982.24	2,118.0	6,800.0		$ 3,558.24		$ 3,558.24	24%	$ 11,424.00	
7	Sidewalk, Class A, 5" PCC	1528	SF	$ 6.85	$ 10,466.80	-	1,528.0		$ -		$ -	0%	$ 10,466.80	
8	Sidewalk, 6" PCC, ADA Ramp	1059	SF	$ 6.50	$ 6,883.50	280.0	779.0		$ 1,820.00		$ 1,820.00	26%	$ 5,063.50	
9	Detectable Warnings	154	SF	$ 65.00	$ 10,010.00	26.0	128.0		$ 1,690.00		$ 1,690.00	17%	$ 8,320.00	
10	Sidewalk, 5" PCC	15425	SF	$ 5.50	$ 84,837.50	8,250.0	3,661.0		$ 45,375.00		$ 45,375.00	53%	$ 39,462.50	
11	Pavement, Sidewalk, Seal Joint	1	LS	$ 2,080.00	$ 2,080.00	-	-		$ -		$ -	0%	$ 2,080.00	
12	Basketball Hoop/ Fottings	2	EA	$ 1,850.00	$ 3,700.00	-	-		$ -		$ -	0%	$ 3,700.00	
13	Saw Cut Existing Concrete	1280	LF	$ 3.50	$ 4,480.00	-	1,280.0		$ -		$ -	0%	$ 4,480.00	
14	Steel Pipe Bollard w/sign	2	EA	$ 2,200.00	$ 4,400.00	-	-		$ -		$ -	0%	$ 4,400.00	
TRAFFIC CONTROL														
14	Paint Pavement Markings, Waterborne	1	LS	$ 1,872.00	$ 1,872.00	1.0	-		$ 1,872.00		$ 1,872.00	100%	$ -	
15	Paint Pavement Markings, Symbol, Waterborne	2	LS	$ 550.00	$ 1,100.00	2.0	-		$ 1,100.00		$ 1,100.00	100%	$ -	
	Traffic control, Conctruction Fence	1	LS	$ 4,500.00	$ 4,500.00	0.25	0.75		$ 1,125.00		$ 1,125.00	25%	$ 3,375.00	
SITEWORK AND LANDSCAPING														
	Limestone Edge	1	LS	$ 5,500.00	$ 5,500.00	-	-		$ -		$ -	0%	$ 5,500.00	
	Retaining Wall with Fotting	1	LS	$ 85,680.00	$ 85,680.00	0.5	-		$ 42,840.00		$ 42,840.00	50%	$ 42,840.00	
	Restoration	1	LS	$ 5,500.00	$ 5,500.00	-	-		$ -		$ -	0%	$ 5,500.00	
	SWPPP Management	1	LS	$ 2,500.00	$ 2,500.00	0.50	0.5		$ 1,250.00		$ 1,250.00	50%	$ 1,250.00	
	Mulch Planting bed	1	LS	$ 2,950.00	$ 2,950.00	-	-		$ -		$ -	0%	$ 2,950.00	
	Mobilization	1	LS	$ 17,500.00	$ 17,500.00	0.30	0.7		$ 5,250.00		$ 5,250.00	30%	$ 12,250.00	
	Half Court Marking	1	LS	$ 2,200.00	$ 2,200.00	-	-		$ -		$ -	0%	$ 2,200.00	
	Guardrail	1	LS	$ 8,000.00	$ 8,000.00	-	-		$ -		$ -	0%	$ 8,000.00	
	Basketball hoop	1	LS	$ 17,500.00	$ 17,500.00	-	-		$ -		$ -	0%	$ 17,500.00	
0														
	2nd St Improvements: P.C.C - replace with pavers	1104	SF	$ 6,072.00	$ 6,072.00	-	-		$ -		$ -	0%	$ 6,072.00	
	2nd St Improvements: Add power pedestals and bollards in planting beds	8	EA	$ 21,752.00	$ 21,752.00	-	-		$ -		$ -	0%	$ 21,752.00	
	2nd St Improvements: Add electrical feed for power pedestals /bollards	1	LS	$ 19,584.00	$ 19,584.00	-	-		$ -		$ -	0%	$ 19,584.00	
	2nd St Improvements: Add plant material in planter beds	8	EA	$ 7,100.00	$ 7,100.00	-	-		$ -		$ -	0%	$ 7,100.00	
	Site Improvements: Central P.C.C. walkway with Subgrade and subbase	2258	SF	$ 28,902.00	$ 28,902.00	0.4	-		$ 11,560.80		$ 11,560.80	40%	$ 17,341.20	
	Site Improvements: Central temporary walkway Subgrade and	2280	SF	$ 29,184.00	$ 29,184.00	0.3	-		$ 8,755.20		$ 8,755.20	30%	$ 20,428.80	
	Landscaping: Mulch Beds (Temporary)	6620	SF	$ 8,275.00	$ 8,275.00	-	-		$ -		$ -	0%	$ 8,275.00	
	Landscaping: Stone Edging	60	LF	$ 2,500.00	$ 2,500.00	-	-		$ -		$ -	0%	$ 2,500.00	
	Playground: Installation of Playground Equipment	1	LS	$ 128,500.00	$ 128,500.00	-	-		$ -		$ -	0%	$ 128,500.00	
	Playground: Surface America Playbond Poured In Place Surfacing	1	LS	$ 299,600.00	$ 299,600.00	-	-		$ -		$ -	0%	$ 299,600.00	
	Playground: Retainig seat wall	165	LF	$ 30,668.00	$ 30,668.00	1.0	-		$ 30,668.00		$ 30,668.00	100%	$ -	
	Basketball Court: 5" PCC with wire mesh and subgrade and	3800	SF	$ 47,500.00	$ 47,500.00	0.3	-		$ 14,250.00		$ 14,250.00	30%	$ 33,250.00	
	Playground - Storm Sewer Pipe/ Structures	1	LS	$ 42,433.65	$ 42,433.65	1.0	-		$ 42,433.65		$ 42,433.65	100%	$ -	
	Playground - Grading, Subbase/Subgrade, PCC Slap, Stair and	1	LS	$ 161,575.00	$ 161,575.00	0.5	-		$ 80,787.50		$ 80,787.50	50%	$ 80,787.50	
Grand Totals					$ 392,453.04			$ -	$ 309,135.39	$ -		0%	$ 271,772.80	

BUSINESS OF THE CITY COUNCIL
BONDURANT, IOWA
AGENDA STATEMENT

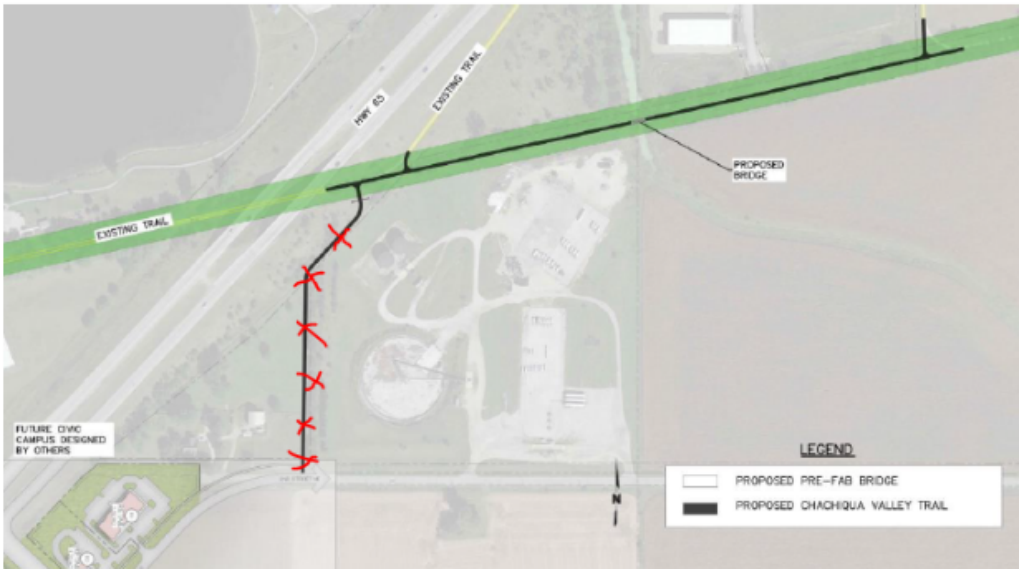
Item No. 5.m.
For Meeting of 6/17/2024
Resolution

TITLE: - Resolution of endorsement for the City of Bondurant's grant application request to the Iowa DOT's State Recreational Trails Grant Program for funding to assist with constructing the east extension of the Chichaqua Valley Trail in the area east of Highway 65 and south of the Bondurant Industrial Park

CONTACT PERSON:
Maggie Murray, Planning & Community Development Director

BRIEF HISTORY & ANALYSIS: The attached resolution endorses the City of Bondurant's grant application to the Iowa DOT's State Recreational Trails Program for funding to assist with constructing the Chichaqua Valley Trail extension east of Highway 65 generally east of Highway 65 and south of the Bondurant Industrial Park on former railroad right-of-way land currently owned by the Landus Cooperative that is in the process of being donated to the City of Bondurant. Through the City's partnership with the University of Iowa's Iowa Initiative for Sustainable Communities (IISC) Program, detailed engineering plans and a budget have been prepared for this proposed trail extension project. This trail extension project will provide a safer alternative route for users of the regional Chichaqua Valley Trail such that they will be able to continue along the former railroad right-of-way land. The City's grant application for this project is due to the Iowa DOT by July 1, 2024. The IISC project cost estimate is $876,000. The City will be requesting $250,000 under this State Recreational Trails Program. The City has also submitted a request to the Iowa DNR in the amount of $250,000 through their Land & Water Conservation Fund Program. A portion of this trail project also includes construction of a pre-fab pedestrian bridge over the Santiago Creek corridor.

Chichaqua Valley Trail Extension Area Map (area in red will be constructed as part of the upcoming Civic Campus project):



FUNDING SOURCE:

STAFF RECOMMENDATION: Approve resolution on a roll call vote.

APPROVED FOR SUBMITTAL:

ATTACHMENTS:
1. RESOLUTION NO. 240617-129

CITY OF BONDURANT
RESOLUTION NO. 240617-129

RESOLUTION OF ENDORSEMENT FOR THE CITY OF BONDURANT'S GRANT APPLICATION REQUEST TO THE IOWA DOT'S STATE RECREATIONAL TRAILS GRANT PROGRAM FOR FUNDING TO ASSIST WITH CONSTRUCTING THE EAST TRAIL EXTENSION OF THE CHICHAQUA VALLEY TRAIL IN THE AREA GENERALLY EAST OF HIGHWAY 65 AND SOUTH OF THE BONDURANT INDUSTRIAL PARK

WHEREAS the Building Bondurant Comprehensive Plan guides for installation of a Chichaqua Valley Trail extension along former railroad right-of-way east of Highway 65 and south of the Bondurant Industrial Park; AND

WHEREAS this project has been identified as a priority to provide users of the Chichaqua Valley Trail a safer route alternative away from the busy Highway 65 corridor; AND

WHEREAS to facilitate moving this project into the construction phase, the City of Bondurant, through its partnership with the University of Iowa's Iowa Initiative for Sustainable Communities Program, had an engineered set of trail plans created for this proposed trail extension area; AND

WHEREAS the City is appreciative of the opportunity to apply for funds through the Iowa Department of Transportation's State Recreational Trails Grant Program; AND

WHEREAS the City acknowledges that if awarded, the City will be responsible for obtaining the matching funds necessary to complete the project within the required timeframe; AND

WHEREAS the City acknowledges it will adequately maintain the completed project for its intended public use following project completion for a period of at least twenty years.

NOW, THEREFORE, BE IT RESOLVED that the Bondurant City Council endorses the Chichaqua Valley Trail east extension project.

BE IT FURTHER RESOLVED that the Bondurant City Council authorizes submittal of the City's State Recreational Trails grant application to the Iowa DOT in the amount of $250,000.

Passed and approved by the City Council of the City of Bondurant, Iowa, this 17th day of June 2024.

By: _____
Doug Elrod, Mayor

ATTEST: I, Shelby Hagan, City Clerk of Bondurant, hereby certify that at a meeting of the City Council held on the above date, among other proceedings the above was adopted.

IN WITNESS WHEREOF, I have hereunto set my hand the day and year above written.

_____

Shelby Hagan, City Clerk

Name	Yay	Nay	Abstain	Absent
Cox				
Driscoll				
McKenzie				
Peffer				
Sillanpaa				

BUSINESS OF THE CITY COUNCIL
BONDURANT, IOWA
AGENDA STATEMENT

Item No. 5.n.
For Meeting of 6/17/2024
Resolution

TITLE: - Resolution affixing a date for a public hearing to consider a text amendment to Section 177.09 of the Zoning Code regarding bicycle parking requirements.

CONTACT PERSON:
Maggie Murray, Planning & Community Development Director
Isaac Pezley, City Planner

BRIEF HISTORY & ANALYSIS: At the direction of the Planning and Zoning Commission, city staff presented a text amendment to require the inclusion of bicycle parking in all new residential and nonresidential developments. Staff researched the zoning codes of other Des Moines' metropolitan communities as well as other communities across Iowa and drafted the following text amendment. The proposed text amendment will require one bicycle parking or storage spot for every twenty vehicular parking spaces proposed in any new site plan up to a maximum of ten bicycles. The proposed text amendment allows the applicant to propose a bicycle rack, parking space or other type of bicycle storage.

FUNDING SOURCE: NA

STAFF RECOMMENDATION: The Planning and Zoning Commission will review the proposed text amendments at their June 13, 2024 meeting. Approve resolution on a roll call vote.

APPROVED FOR SUBMITTAL:

ATTACHMENTS:
1. RESOLUTION NO. 240617-130
2. Proposed Bike Parking Text Amendment

CITY OF BONDURANT
RESOLUTION NO. 240617-130

RESOLUTION AFFIXING A DATE FOR A PUBLIC HEARING TO CONSIDER ZONING CODE TEXT AMENDMENTS TO SECTION 177.09. OF THE ZONING CODE REGARDING BICYCLE PARKING REQUIREMENTS.

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF BONDURANT, IOWA:

That the City Council of the City of Bondurant, Iowa hereby proposes to consider the following Ordinance:

AN ORDINANCE AMENDING THE CODE OF ORDINANCES OF THE CITY OF BONDURANT, IOWA, 2002, BY AMENDING SECTIONS 177.09. OF THE ZONING CODE REGARDING THE TOPIC OF BICYCLE PARKING REGULATIONS

A public hearing will be held on July 1, 2024, at 6:00 p.m. at the Bondurant City Center at 200 2nd Street NE, Bondurant, Polk County, Iowa, at which the Council will hear objections or support to said proposed Ordinance.

The Clerk is hereby directed to publish Notice of said Hearing, as by law required.

Passed this 17th day of June 2024,

By: _____
Doug Elrod, Mayor

ATTEST: I, Shelby Hagan, City Clerk of Bondurant, hereby certify that at a meeting of the City Council held on the above date, among other proceedings the above was adopted.

IN WITNESS WHEREOF, I have hereunto set my hand the day and year above written.

_____
Shelby Hagan, City Clerk

Name	Yay	Nay	Abstain	Absent
Cox				
Driscoll				
Peffer				
McKenzie				
Sillanpaa				

NOTICE OF PUBLIC HEARING

The City Council of the City of Bondurant will meet at 6:00 p.m. on July 1, 2024 in the Bondurant Community Center at 200 2nd Street NE, Bondurant, Polk County, Iowa, to consider text amendments to the following sections of the Zoning Code: 177.09. regarding bicycle parking regulations. All interested parties are encouraged to attend.

177.09 OFF-STREET PARKING AREA REQUIRED. In all districts, in connection with every industrial, business, institutional, recreational, or any other use, there shall be provided, at the time any building or structure is erected or is enlarged or increased in capacity, off-street parking spaces for automobiles in accordance with the following requirements:

1. Automobile sales and service garages: one (1) space per 200 square feet of gross floor area.
2. Business and professional offices: one (1) space per 200 square feet of gross floor area.
3. Bowling alleys: five (5) spaces for each alley plus one (1) space per 300 square feet of gross floor area used for purposes other than alley space.
4. Schools:
   A. One (1) space for each eight (8) seats in a principal auditorium.
   B. When no auditorium is involved, one (1) space for every two (2) employees.
5. Convenience stores: one (1) space per 150 square feet of gross floor area.
6. Dance halls, assembly halls: one (1) space for each 200 square feet of floor area used for dancing or assembly.
7. Dwellings:
   A. Single-family dwelling - two (2) parking spaces accessible to the street;
   B. Duplex family dwelling - four (4) parking spaces accessible to the street;
   C. Multi-family dwelling - for each one (1) bedroom unit - 1½ parking spaces; for each two (2) bedroom unit, or larger - 2 parking spaces.
8. Funeral homes, mortuaries: one (1) parking space for each five (5) seats in the principal auditorium.
9. Hotels and motels: one (1) space for each room to be rented plus additional space (in accordance with other sections of this chapter) for restaurant or other facilities.
10. Medical or dental clinic: five (5) spaces for each staff doctor or dentist.
11. Restaurants, bars, or night clubs:
    A. One (1) space per fifty (50) square feet of gross floor area devoted to patron use within property. In addition, one (1) parking space must be provided for each person regularly employed or intended to be

regularly employed on the premises during the maximum working shift.

B. All food and beverage service drive-thrus shall provide a minimum of eleven (11) vehicle queuing spaces per drive-thru, 5 of which must be located ahead of the ordering station if separate from the pick-up window. All other drive-thru and pick-up windows shall have a minimum of 4 vehicle queuing spaces. Queuing spaces shall be a minimum of 12 feet wide and 20 feet long and must be located within any driveway or parking lot drive aisle and cannot block any designated parking spaces.

12. Hospitals: two (2) spaces per bed or one (1) space per 150 square feet of gross floor area, whichever is greater.

13. Nursing care institutions: three (3) spaces for every five (5) beds. Multi-family units developed or sponsored by a public or nonprofit agency for limited income families or the elderly require only one (1) space per unit.

14. Movie theaters: one (1) space for every four (4) seats.

15. Social, fraternal clubs, lodges and similar uses: one (1) space per 300 square feet of gross floor area.

16. Churches: one (1) space for every 80 square feet of worship area plus one (1) space for every two (2) employees with sufficient space for safe and convenient loading and unloading.

17. Banks: one (1) space per 200 square feet of area within main building plus reservoir land capacity equal to five (5) spaces per window (10 spaces if window serves two stations).

18. Wholesale: one (1) space per 400 square feet of gross floor area.

19. Retail sales and rental of goods, merchandise and equipment:

A. No storage or display of goods outside fully enclosed building: one (1) space per 200 square feet of gross floor area.

B. Low volume traffic with no storage or display of goods outside fully enclosed building: one (1) space per 400 square feet of gross floor area.

C. Storage and display of goods outside fully enclosed building allowed:

(1) High volume traffic generation: one (1) space per 200 square feet of gross floor area.

(2) Low volume traffic generation: one (1) space per 400 square feet of gross floor area.

20. Manufacturing plants, testing laboratories, bottling plants: one (1) space for each 1.5 plant employees plus one (1) space for each managerial person plus one (1) visitor parking space for each ten (10) managerial personnel or one (1) space for each 500 square feet of gross floor area used for manufacturing, whichever is greater.

21. Warehousing: one (1) space per employee.

22. Sports arenas and auditoriums other than in schools: one (1) space for each six (6) seats.

23. Car wash: one (1) space per employee plus one (1) space for manager plus space equaling five times the vehicle capacity of the wash.

24. Dry cleaner or Laundromat: one (1) space per 200 square feet of gross floor area.

25. Nursery schools or day care centers: 1space/2employees + 1 space/5children

26. Commercial greenhouse operation: one (1) space per 200 square feet of gross floor area.

27. Fitness center: one (1) space per 200 square feet of gross floor area.

28. If a building contains two or more differing uses, the parking requirement shall be determined by the addition of the parking requirements for each use.

29. Bicycles: For multi-family residential and all nonresidential forms and functions, bicycle racks or other form(s) of bicycle storage shall be provided to accommodate at least one (1) bicycle for every twenty (20) parking spaces, provided, up to a maximum of ten (10) bicycles.

In case of any building, structure or premises the use of which is not specifically mentioned herein, requirements for a use which is so mentioned and to which said use is similar shall apply. In cases not specifically covered, the City Administrator is authorized to determine the parking requirements using a similar use as a guide.

BUSINESS OF THE CITY COUNCIL
BONDURANT, IOWA
AGENDA STATEMENT

Item No. 5.o.
For Meeting of 6/17/2024
Resolution

TITLE: - Resolution approving amendment no. 2 to the professional services agreement with Veenstra & Kimm for the design of the Certified Site/Civic Campus Area Improvements Project in the amount of $170,200

CONTACT PERSON:
John Horton, Public Works Director

BRIEF HISTORY & ANALYSIS: The city entered into an agreement with Veenstra & Kim in December 2021 for the design services for the Certified site Improvements Area Project. At the time of the initial agreement, the focus was only on the roadway improvements for the Myers 1 certified site and the future Civic Campus Area. Since that initial agreement, the scope of the project has evolved and there is work being done and utility relocation coordination on other aspects that were not originally scoped, such as sanitary sewer planning for approximately 800 acres of ground outside the original certified site. There has also been a great deal of added time working with the Iowa DOT on the intersection of Hwy 65 and 2nd St. NE improvements to signalize and improve the traffic congestion in this area. The Iowa DOT has asked for amendments to the traffic impact study as well as the impact of the Certified Site RISE Grant. We do anticipate most all of this added cost to be offset by our additional RISE Grant request that is slated for the July DOT commission meeting.

Staff recommend approval of Amendment #2 to the Professional Services Agreement to Veenstra & Kim for $170,200 for the added design services associated with this project. The changes here account for an overall increase in the construction phase of approximately $1,850,000 above the original scope of the project.

FUNDING SOURCE: RISE GRANT/Bugeted CIP

STAFF RECOMMENDATION: Approve resolution on a roll call vote.

APPROVED FOR SUBMITTAL:

ATTACHMENTS:
1. RESOLUTION NO. 240617-131
2. Amendment No. 2
3. Civic Campus Sanitary Service Areas

4. Civic Campus Drainage Future Sites

CITY OF BONDURANT
RESOLUTION NO. 240617-131

RESOLUTION APPROVING AMENDMENT NO. 2 TO PROFESSIONAL SERVICES AGREEMENT TO VEENSTRA & KIM FOR THE DESIGN SERIVCES FOR THE CERTIFIED SITE/CIVIC CAMPUS AREA PROJECT IN THE AMOUNT OF $170,200

WHEREAS, on June 10th, 2024, the City of Bondurant received the amendment to the professional services agreement for the Certified Site/Civic Campus Area Project; AND

WHEREAS, it is agreed by and between the parties hereto that the Agreement dated June 17th, 2024, be amended by the following additions, deletions and modifications to wit:

Scope of Services – to add to the scope of services the additional manhours and time required for:

1.Project Management of added work and time and DOT meetings to amend the RISE grant and TIS

2.Additional survey along 2nd Street east of Myers1 Certified Site and along Us 65 median for offset left turns.

3.Sanitary Master Planning and DNR permitting for 800 acres south of 2ndStreet SE (predominantly outside the Myers 1 Certified Site).

4.Sanitary sewer and trunk Design to Lift Station for an additional 5,900lineal feet.

5.Storm Master Planning for an additional 50 acres outside the Myers 1Certified Site.

6.Storm sewer and interim ditch design and upsized drainage culvert and outlet ditch redesign for an additional 3,200 added feet.

7.Offset left turn geometric and striping design on Hubbell Avenue/US Highway 65 for 1,100 added square yards of pavement.

8.Offset left turn median drainage modifications design for Hubbell Avenue/US Highway 65.

9.Modifications to the new signal design to accommodate the expanded intersection for ultimate geometrics.

10.Traffic control and detours to accommodate the offset left turn construction and intersection cross traffic closures.

11.Utility coordination for the added improvements identified in the above tasks.

No time has been included for negotiations with private entities to secure the easements and or right of way and is assumed the City has control of the needed ground or will secure the easements for the project.

2.Completion of the Phase 2 project will be targeted for a late summer or fall 2024letting with construction to be completed in the late fall of 2025. The Phase 1project/non-RISE funded items letting was held in April of 2024. Current negotiations with the Iowa DOT for additional funding are delaying the Phase 2project/RISE funded items with non-RISE items. The delays to the project have been attributed to the lack of development by the original industry and pursuit of added RISE grant funds through the Iowa Department of Transportation. This addition is caused by late comments requiring additional construction to Hubbell Avenue

WHEREAS, the undersigned do hereby covenant and state this Amendment to the Agreement is executed in duplicate as though each were an original and that there are no oral agreements that have not been reduced to writing in this instrument; AND

WHEREAS, it is further covenanted and stated the there are no other considerations or monies contingent upon or resulting from the execution of this Amendment to the Agreement nor have any of the above been implied by or for any party to this Amendment to the Agreement,

NOW, THEREFORE, BE IT RESOLVED, by the City Council of the City of Bondurant, Iowa, that the amendment no. 2 to the professional service agreement with Veenstra & Kim for the Certified Site/Civic Campus Area Project is hereby approved as presented.

Passed this 17th day of June 2024,

By: _____
Doug Elrod, Mayor

ATTEST: I, Shelby Hagan, City Clerk of Bondurant, hereby certify that at a meeting of the City Council held on the above date, among other proceedings the above was adopted.

IN WITNESS WHEREOF, I have hereunto set my hand the day and year above written.

_____
Shelby Hagan, City Clerk

Council Action	Ayes	Nays	Abstain	Absent
Cox				
Peffer				
Driscoll				
McKenzie				
Sillanpaa				

AMENDMENT NO. 2
to
PROFESSIONAL SERVICES AGREEMENT
Between the
CITY OF BONDURANT, IOWA and
VEENSTRA & KIMM, INC.

This contract amendment is made by and between the City of Bondurant, Iowa, a municipal corporation, and Veenstra & Kimm, Inc., an Iowa Corporation this _____ day of June 2024.

Whereas, it is the mutual desire of the parties hereto to amend the CITY'S PROFESSIONAL SERVICES AGREEMENT for CERTIFIED SITE IMPROVEMENTS entered into in December 2021, hereinafter called the existing Agreement.

Therefore, it is hereby agreed that the existing Agreement be amended as follows:

1. Scope of Services – to add to the scope of services the additional manhours and time required for:

    1. Project Management of added work and time and DOT meetings to amend the RISE grant and TIS
    2. Additional survey along 2nd Street east of Myers1 Certified Site and along US 65 median for offset left turns.
    3. Sanitary Master Planning and DNR permitting for 800 acres south of 2nd Street SE (predominantly outside the Myers 1 Certified Site).
    4. Sanitary sewer and trunk Design to Lift Station for an additional 5,900 lineal feet.
    5. Storm Master Planning for an additional 50 acres outside the Myers 1 Certified Site.
    6. Storm sewer and interim ditch design and upsized drainage culvert and outlet ditch redesign for an additional 3,200 added feet.
    7. Offset left turn geometric and striping design on Hubbell Avenue/US Highway 65 for 1,100 added square yards of pavement.
    8. Offset left turn median drainage modifications design for Hubbell Avenue/US Highway 65.
    9. Modifications to the new signal design to accommodate the expanded intersection for ultimate geometrics.
    10. Traffic control and detours to accommodate the offset left turns construction and intersection cross traffic closures.
    11. Utility coordination for the added improvements identified in the above tasks.

No time has been included for negotiations with private entities to secure the easements and or right of way and is assumed the City has control of the needed ground or will secure the easements for the project.

2. Completion of the Phase 2 project will be targeted for a late summer or fall 2024 letting with construction to be completed in the late fall of 2025. The Phase 1 project/non-RISE funded items letting was held in April of 2024. Current negotiations with the Iowa DOT for additional funding are delaying the Phase 2 project/RISE funded items with non-RISE items. The delays to the project have been attributed to the lack of development by the original industry and pursuit of added RISE grant funds through the Iowa Department of Transportation. This addition is caused by late comments requiring additional construction to Hubbell Avenue.

The change increases the compensation associated with the change in Scope of Services by One Hundred Seventy Thousand, Two Hundred Dollars and no cents ($170,200). These changes account for an overall increase in construction by nearly $1,850,000.

This amendment will be deemed a part of, and subject to, all terms and conditions of the existing Agreements. Except as modified above, the existing Agreement will remain in full force and effect.

VEENSTRA & KIMM, INC.

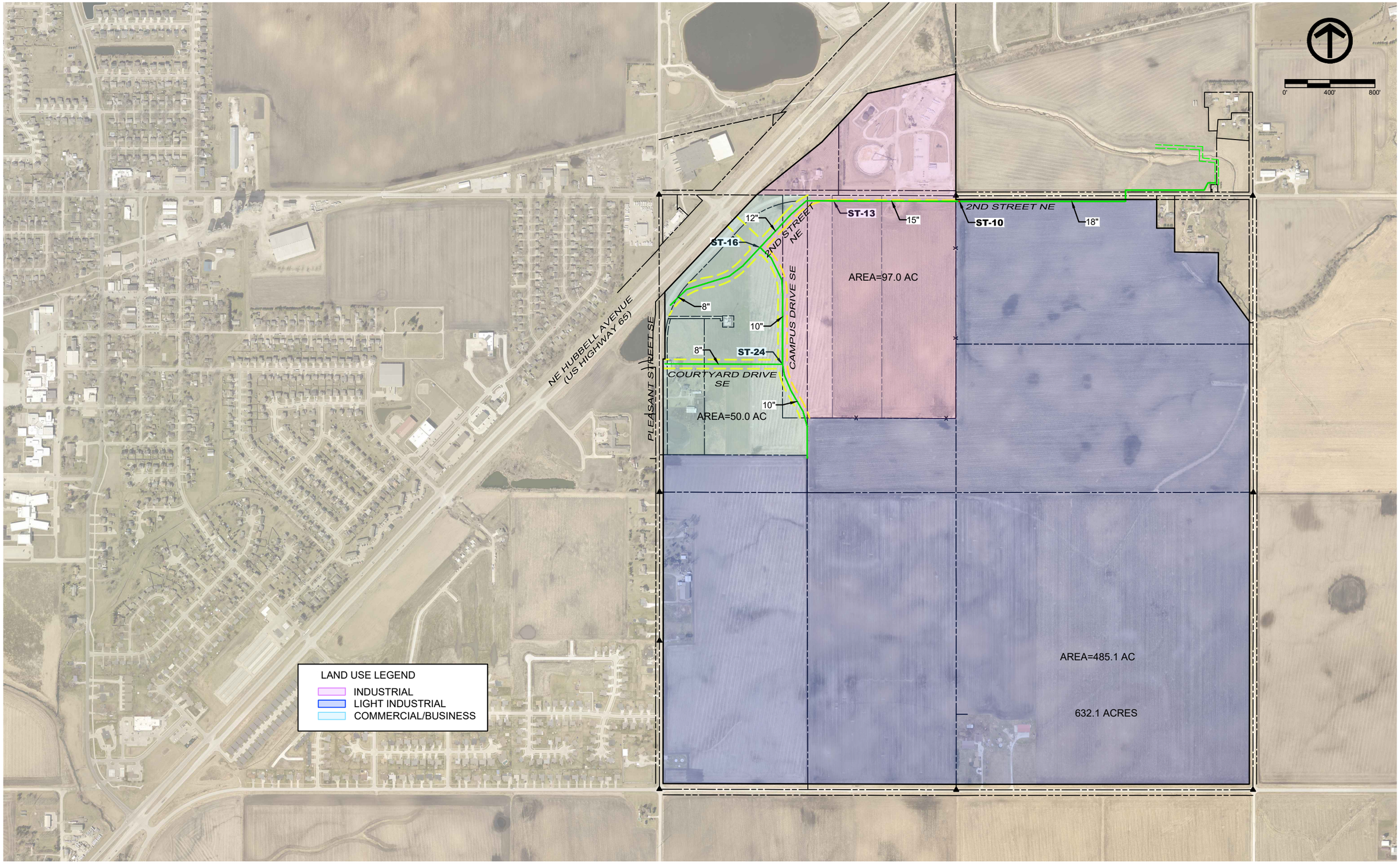
By Greg J. Roth
Greg Roth
Project Manager

Patti Jass-Roth
Attest

CITY OF BONDURANT, IOWA

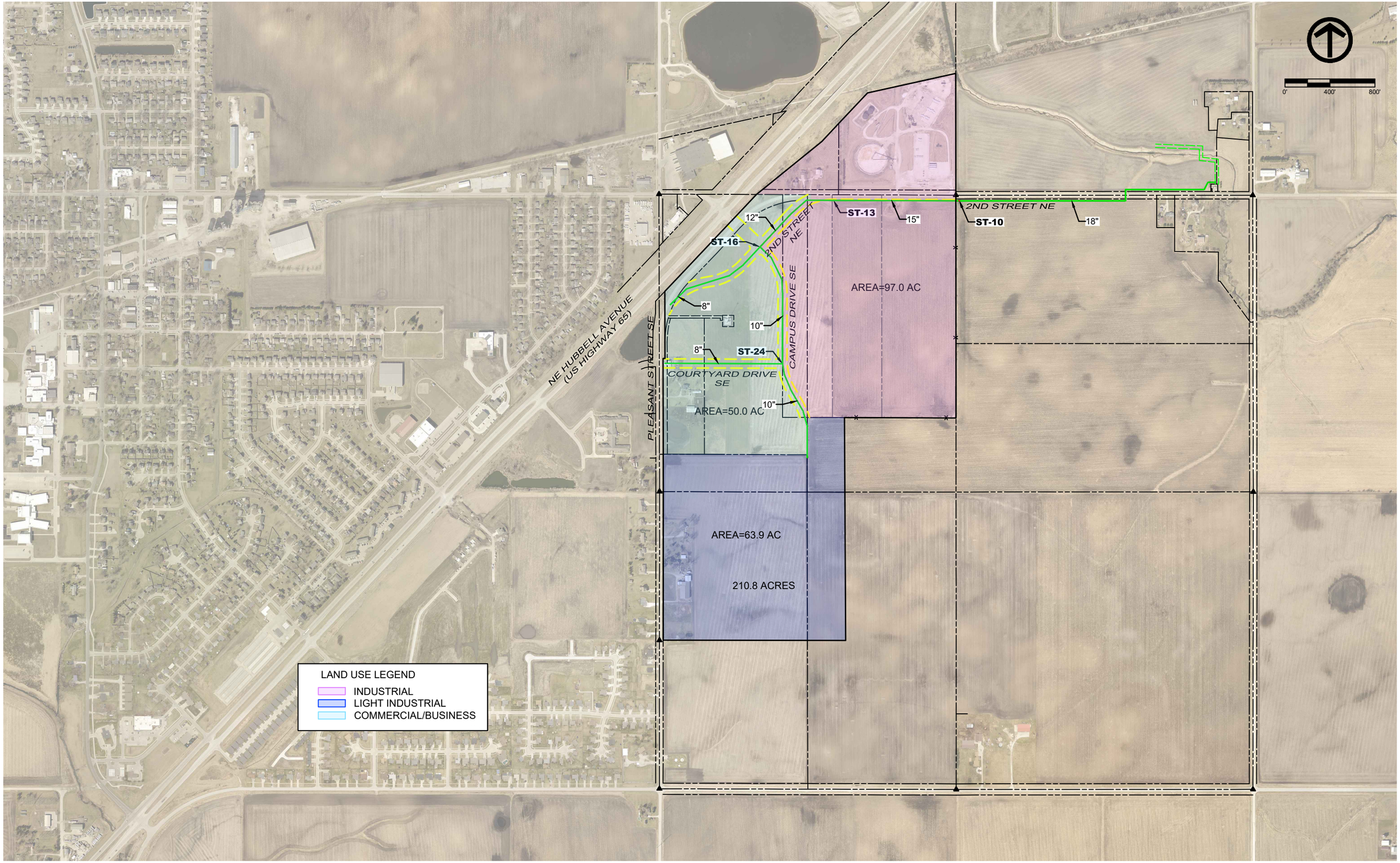
By_____
Mayor

_____
City Clerk



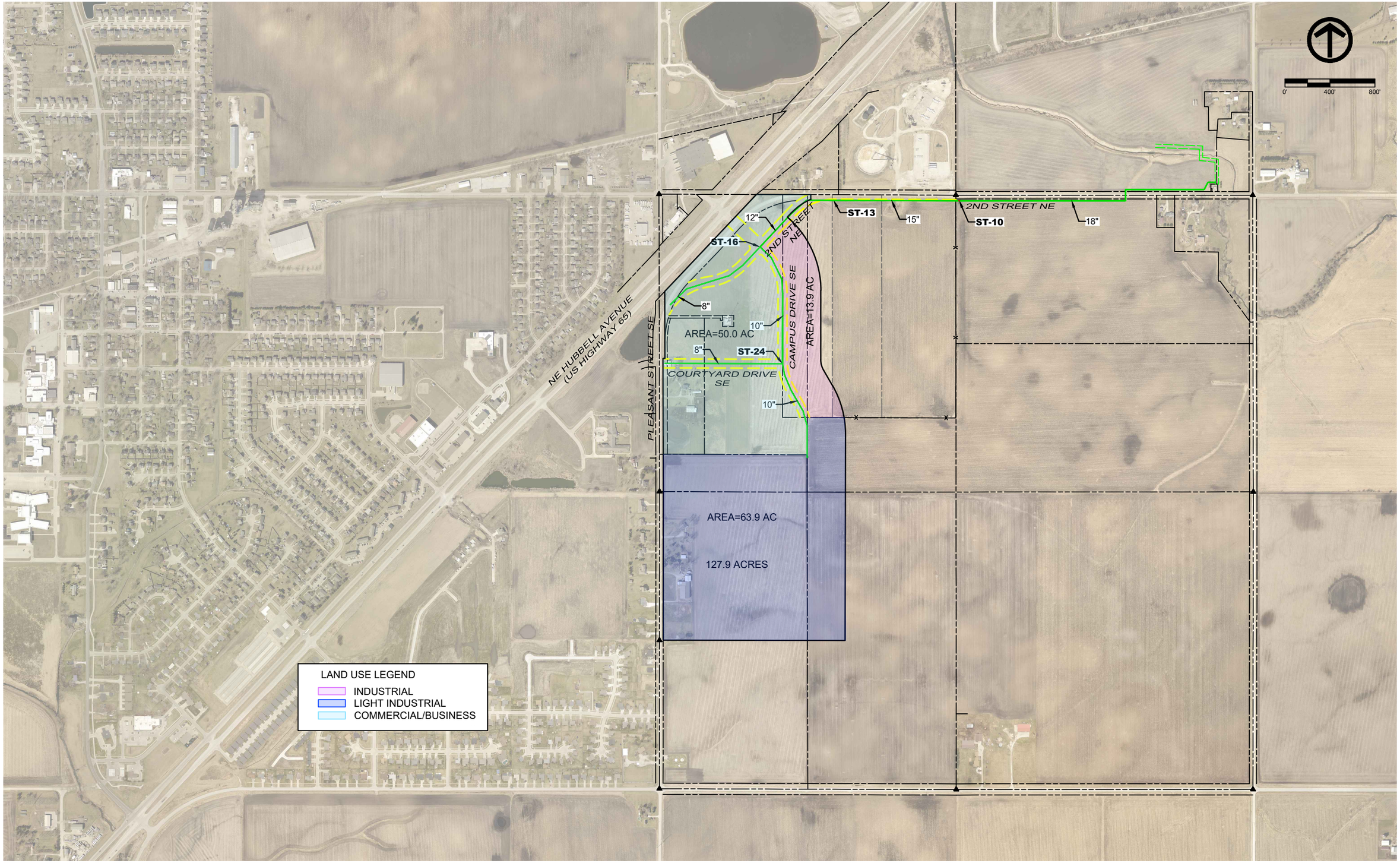
VEENSTRA & KIMM INC.

BONDURANT, IOWA
CIVIC CAMPUS DEVELOPMENT
SANITARY MH ST-10 SERVICE AREA



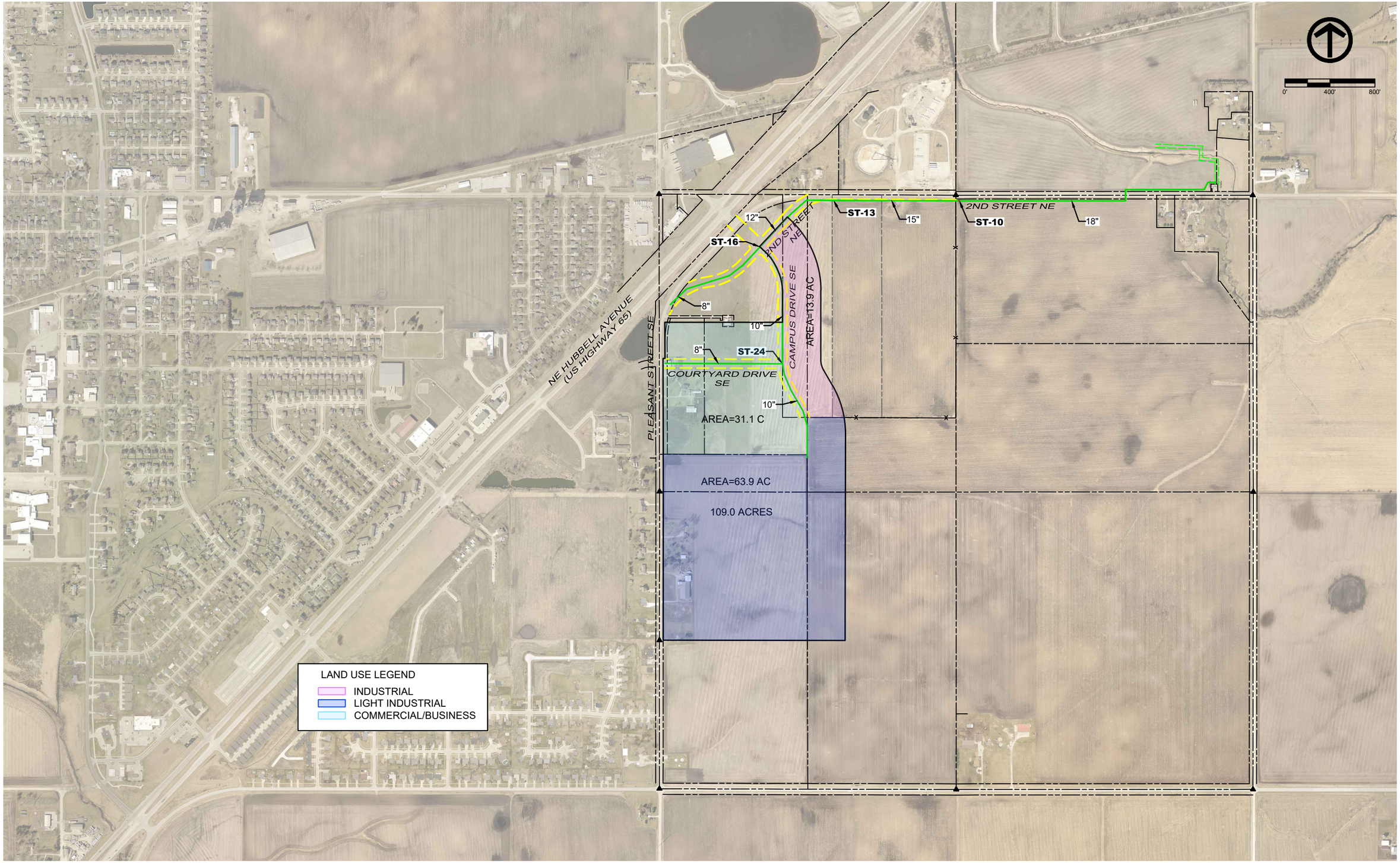
VEENSTRA & KIMM INC.

BONDURANT, IOWA
CIVIC CAMPUS DEVELOPMENT
SANITARY MH ST-13 SERVICE AREA



VEENSTRA & KIMM INC.

BONDURANT, IOWA
CIVIC CAMPUS DEVELOPMENT
SANITARY MH ST-16 SERVICE AREA



VEENSTRA & KIMM INC.

BONDURANT, IOWA
CIVIC CAMPUS DEVELOPMENT
SANITARY MH ST-24 SERVICE AREA

VK Schedule D Trunk Sewer - ST24 — 8"@0.4%=.49MGD full, .45MGD .75D, .39MGD .67D
407 gpm = 1.172 mgd pump station — at Campus
Initial (Ac) 10
Ultimate (Ac) 31

Initial (Ac)	GPD		Ultimate (Ac)	GPD		
0	5000	0	0	5000	0	Light Industrial
0	10000	0	0	10000	0	Industrial, Cert Site
10	1500	15000	31	1500	46500	Commercial/Business
Total Ac		**Total flow**	Total Ac		**Total flow**	
10		**15,000**	31		**46,500**	10"

VK Schedule D Trunk Sewer - ST16 — 12"@0.35%=1.36MGD full, 1.24MGD .75D, 1.07MGD .67D
407 gpm = 1.172 mgd pump station — at Pleasant
Initial (Ac) 60
Ultimate (Ac) 128

Initial (Ac)	GPD		Ultimate (Ac)	GPD		
50	5000	250000	64	5000	320000	Light Industrial
0	10000	0	14	10000	140000	Industrial, Cert Site
10	1500	15000	50	1500	75000	Commercial/Business
Total Ac		**Total flow**	Total Ac		**Total flow**	
60		**265,000**	128		**535,000**	12"

VK Schedule D Trunk Sewer - ST10 — 18"@0.35%=4.02MGD full, 3.66MGD .75D
407 gpm = 1.172 mgd pump station — Entire Area
Initial (Ac) 60
Ultimate (Ac) 632

Initial (Ac)	GPD		Ultimate (Ac)	GPD		
50	5000	250000	485	5000	2425000	Light Industrial
0	10000	0	97	10000	970000	Industrial, Cert Site/Landus
10	1500	15000	50	1500	75000	Commercial/Business
Total Ac		**Total flow**	Total Ac		**Total flow**	
60		**265,000**	632		**3,470,000**	18"

Industrial	10000	gpd/ac
Light Industrial/Wharehouses	5000	gpd/ac
Commercial/Business	1500	gpd/ac
Residential - Yellow	100	gpcd

VK Schedule D Trunk Sewer - ST24 — 10"@0.35%=.84MGD full, .76MGD .75D, .66MGD .67D
407 gpm = 1.172 mgd pump station — at Courtyard
Initial (Ac) 60
Ultimate (Ac) 109

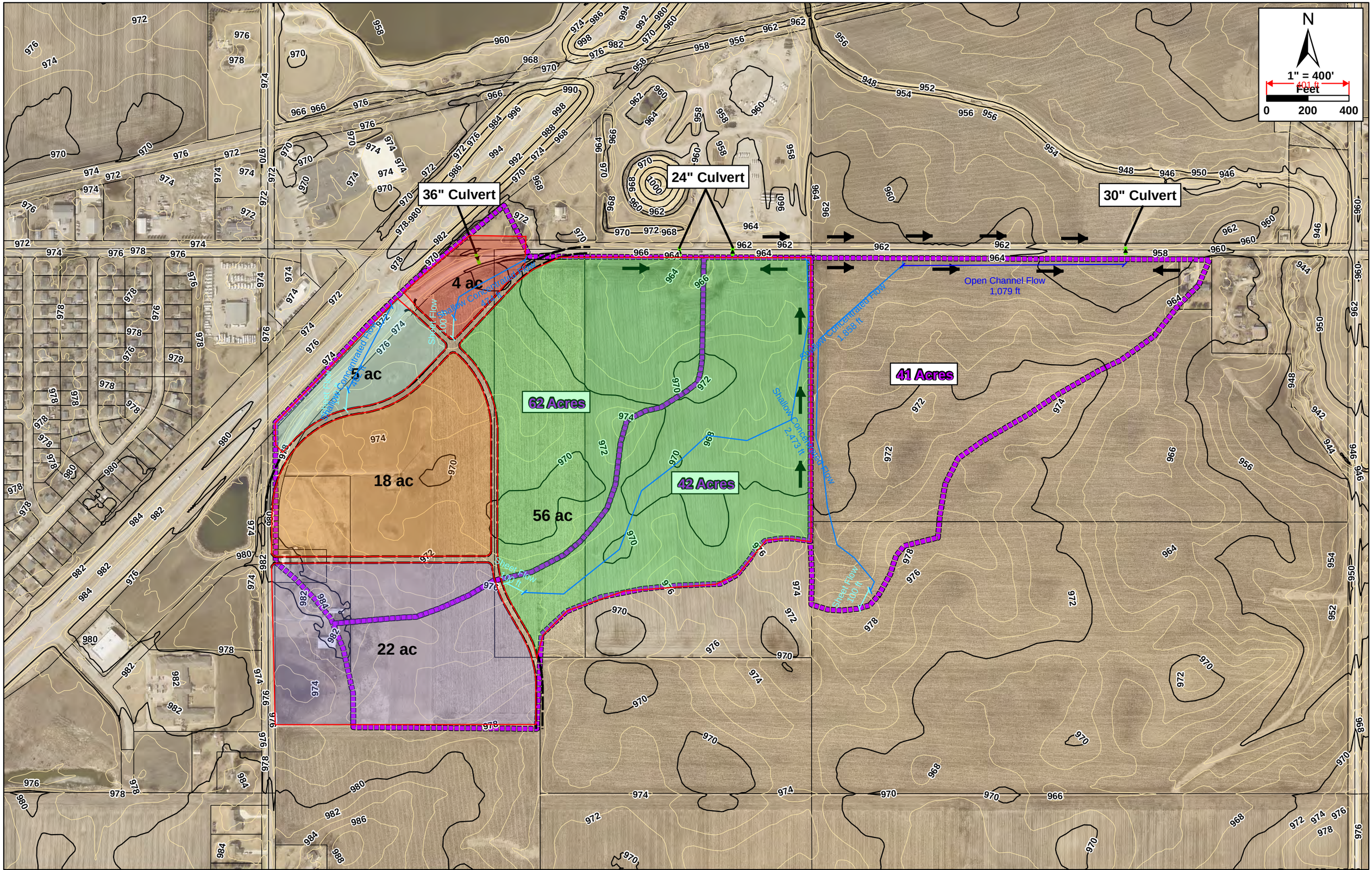
Initial (Ac)	GPD		Ultimate (Ac)	GPD		
50	5000	250000	64	5000	320000	Light Industrial
0	10000	0	14	10000	140000	Industrial, Cert Site
10	1500	15000	31	1500	46500	Commercial/Business
Total Ac		**Total flow**	Total Ac		**Total flow**	
60		**265,000**	109		**506,500**	10"

VK Schedule D Trunk Sewer - ST13 — 15"@0.35%=2.47MGD full, 2.25MGD .75D, 1.95MGD .67D
407 gpm = 1.172 mgd pump station — at West end of Landus
Initial (Ac) 60
Ultimate (Ac) 211

Initial (Ac)	GPD		Ultimate (Ac)	GPD		
50	5000	250000	64	5000	320000	Light Industrial
0	10000	0	97	10000	970000	Industrial, Cert Site
10	1500	15000	50	1500	75000	Commercial/Business
Total Ac		**Total flow**	Total Ac		**Total flow**	
60		**265,000**	211		**1,365,000**	15"

Following DNR Sizing
18"@0.35%=4.02MGD full, 3.66MGD .75D
15"@0.35%=2.47MGD full, 2.25MGD .75D, 1.95MGD .67D
12"@0.35%=1.36MGD full, 1.24MGD .75D, 1.07MGD .67D
10"@0.35%=.84MGD full, .76MGD .75D, .66MGD .67D
8"@0.4%=.49MGD full, .45MGD .75D, .39MGD .67D

Sudas
18"@0.35%=4.02MGD full, 3.66MGD .75D
15"@0.35%=2.47MGD full, 2.25MGD .75D, 1.95MGD .67D
12"@0.35%=1.36MGD full, 1.24MGD .75D, 1.07MGD .67D
10"@0.35%=.84MGD full, .76MGD .75D, .66MGD .67D
8"@0.4%=.49MGD full, .45MGD .75D, .39MGD .67D


36" Culvert
24" Culvert
30" Culvert
4 ac
5 ac
18 ac
22 ac
62 Acres
56 ac
42 Acres
41 Acres
Open Channel Flow
1,079 ft
Sheet Flow
100 ft
Shallow Concentrated Flow
472 ft
Shallow Concentrated Flow
1,858 ft
Shallow Concentrated Flow
2,473 ft
Sheet Flow
100 ft
Sheet Flow
100 ft
N
1" = 400'
Feet
0
200
400

BUSINESS OF THE CITY COUNCIL
BONDURANT, IOWA
AGENDA STATEMENT

Item No. 5.p.
For Meeting of 6/17/2024
Resolution

TITLE: - Resolution approving action to order construction and set date of public hearing for plans, specifications, and recommendation of award of contract for the 1st Street SW and 3rd Street SE Parking Projects

CONTACT PERSON:
John Horton, Public Works Director
Maggie Murray, Planning & Community Development Director

BRIEF HISTORY & ANALYSIS: On February 5, 2024, the City Council approved a professional services agreement with Shive-Hattery to design a public right-of-way parking project along 1st Street SW west of Grant Street South. On March 18, 2024, the City Council approved a professional services agreement with Shive-Hattery to design a parking lot project at 201 3rd Street SE. Both projects have been fully designed and are ready to go out for bid. The project description is below.

Project Description:

The 1ST AND 3RD STREET PARKING IMPROVEMENTS project involves the development of two PCC parking lots and associated enhancements. The first parking lot, located on the north side of 1st Street SW between Garfield St SW and Grant St S, includes the construction of an angled 16-stall parking area, replacement of deteriorated road panels in the westbound direction of 1st Street SW, sidewalk construction, secondary electrical service, and overhead lighting improvements. The second parking lot, situated at the southeast corner of 3rd St SE and Main St SE, features the construction of a 15-stall parking area, permeable pavement sections, sidewalk improvements, overhead lighting, and storm sewer enhancements.

This resolution is to set the date of a public hearing for the plans, specifications, and possible award of contract as well as to set the date for the public bid letting.

FUNDING SOURCE: The project is funded with grants, TIF, GO bond, and Local Option Sales and Services Tax.

STAFF RECOMMENDATION: Approve resolution on a roll call vote.

APPROVED FOR SUBMITTAL:

ATTACHMENTS:

1. RESOLUTION NO. 240617-132
2. 1st-3rd St Parking_Final Plans
3. 1st-3rd St Parking_Project_Manual
4. 1st-3rd St Parking_Cost Est

CITY OF BONDURANT
RESOLUTION NO. 2400617-132

RESOLUTION APPROVING ACTION TO ORDER CONSTRUCTION AND SET DATE OF PUBLIC HEARING AND LETTING FOR THE 1ST STREET SW AND 3RD STREET SE PARKING PROJECTS

WHEREAS the City Council orders construction for the 1st Street SW and 3rd Street SE Parking Projects; AND

WHEREAS bids are due and will be opened July 10th, 2024, at 2:00 p.m. at Bondurant City Hall Council Chambers; AND

WHEREAS a public hearing on the proposed plans, specifications, form of contract, estimate of cost, and possible award of contract is scheduled for July 15th, 2024, at 6:00 p.m. in the Bondurant City Center at 200 Second Street NE, Bondurant, Iowa 50035.
NOW, THEREFORE, BE IT RESOLVED, by the City Council of the City of Bondurant, Iowa, that the action to order construction and set date of public hearing and bid letting for the 1st Street SW and 3rd Street SE Parking Projects is hereby approved as presented.

Passed this 17th day of June 2024,

By: _____
Doug Elrod, Mayor

ATTEST: I, Shelby Hagan, City Clerk of Bondurant, hereby certify that at a meeting of the City Council held on the above date, among other proceedings the above was adopted.

IN WITNESS WHEREOF, I have hereunto set my hand the day and year above written.

_____
Shelby Hagan, City Clerk

Council Action	Ayes	Nays	Abstain	Absent
Cox				
Driscoll				
McKenzie				
Peffer				
Sillanpaa				

BONDURANT PUBLIC PARKING IMPROVEMENTS

CITY OF BONDURANT
201 3RD ST SE
BONDURANT, IA 50035

CITY OF BONDURANT
98 GRANT ST S
BONDURANT, IA 50035

PROPERTY OWNER

CITY OF BONDURANT
ATTN: MARKETA OLIVER
200 2ND ST NE
BONDURANT, IA 50035

ARCHITECT/ENGINEER

SHIVE-HATTERY, INC.
ATTN: DAVID FLIEHLER, PE
4125 WESTOWN PKWY, SUITE 100
WEST DES MOINES, IA 50266
PHONE: 515-223-8104

Sheet List Table

Sheet Number	Sheet Title
C000	COVER SHEET
C001	CONSTRUCTION NOTES
C002	ESTIMATE REFERENCE NOTES
CD01	DEMOLITION PLAN - 3RD ST
CD02	DEMOLITION PLAN - 1ST ST
C101	SITE PLAN - 3RD ST
C102	SITE PLAN - 1ST ST
C201	GRADING PLAN - 3RD ST
C202	GRADING PLAN - 3RD ST
C203	GRADING PLAN - 1ST ST
C301	UTILITY PLAN - 3RD ST
C501	CONSTRUCTION DETAILS
C502	CONSTRUCTION DETAILS
C503	CONSTRUCTION DETAILS
C504	CONSTRUCTION DETAILS
L101	LANDSCAPE PLAN
L102	LANDSCAPE PLAN
E102	ELECTRICAL SITE PLAN - 1ST ST

THE 2023 EDITION OF THE IOWA STATEWIDE URBAN DESIGN SPECIFICATIONS FOR PUBLIC IMPROVEMENTS SHALL APPLY TO ALL WORK PERFORMED ON THIS PROJECT EXCEPT AS MODIFIED HEREIN.

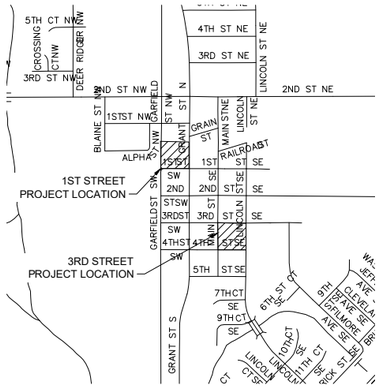
THIS PROJECT IS COVERED BY THE IOWA DEPARTMENT OF NATURAL RESOURCES NPDES GENERAL PERMIT NO.2. THE CONTRACTOR SHALL CARRY OUT THE TERMS AND CONDITIONS OF GENERAL PERMIT NO.2 AND THE STORM WATER POLLUTION PREVENTION PLAN WHICH IS A PART OF THESE CONTRACT DOCUMENTS.

IOWA ONE CALL
1-800-292-8989
www.iowaonecall.com
811 Know what's below. Call before you dig.

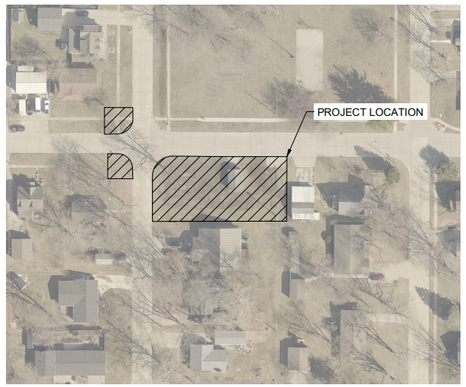
UTILITY CONTACT INFORMATION			
COMPANY	CONTACT	PHONE	EMAIL
City of Bondurant	Patrick Collison	(515) 971-6856	pcollison@cityofbondurant.com
Midamerican Gas and Electric	Jamie Neer	(515) 252-6972	mecdsmdesignlocates@midamerican.com
MI-Fiber	Justin Miller	(515) 897-8802	jmiller@mi-fiber.net
Mediacom	Jerry Broughton	(845) 587-2521	jbroughton@mediacomcc.com
Centurylink	Sadie Hull	(918) 547-0147	sadie.hull@lumen.com

Legend

EXISTING	DESCRIPTION	PROPOSED
	CONTROL POINT/BENCHMARK	
	HANDICAPPED PARKING	
	FLOW ARROW	
	SHRUB	
	DECIDUOUS TREE	
	CONIFEROUS TREE	
	TREE REMOVAL	
	LIGHT POLE	
	UTILITY POLE	
	SINGLE POLE SIGN	
	BOLLARD	
	FIRE HYDRANT	
	VALVE	
	CLEANOUT	
	CURB INTAKE	
	STORM INTAKE	
MH	MANHOLE	MH
D	DRAINAGE MANHOLE	D
S	SANITARY MANHOLE	S
J	JUNCTION BOX	J
	TRANSFORMER	
V	VAULT BOX	V
	CURB AND GUTTER (PCC)	
910	MAJOR CONTOUR	910
909	MINOR CONTOUR	909
—C—	CABLE LINE - UNDERGROUND	—C—
—E—	ELECTRICAL LINE - UNDERGROUND	—E—
OE	ELECTRICAL LINE - OVERHEAD	OE
—FO—	FIBER OPTIC LINE	—FO—
G	GAS MAIN	G
	SANITARY SEWER	
	STORM SEWER	
	SUBDRAIN	
—T—	TELECOM LINE	—T—
W	WATER MAIN	W
	UTILITY DEMO	
	SILT FENCE OR FILTER SOCK	
	CONSTRUCTION LIMITS	
	BUILDING	



VICINITY MAP
NTS



PROJECT LOCATION - 3RD STREET (DIVISION 1)
NTS

PROJECT LOCATION - 1ST STREET (DIVISION 2)
NTS

ELECTRICAL ENGINEER

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT DESCRIBED BELOW 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.

Signature: Date

Printed or typed name: EDIN SMAILOVIC
License Number: 21953
My License Renewal Date is: DECEMBER 31, 2024

PAGES, SHEETS OR DIVISIONS COVERED BY THIS SEAL:
ALL "E" SHEETS

CIVIL ENGINEER

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT DESCRIBED BELOW 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.

Signature: Date

Printed or typed name: KYLE A. LAWSON
License Number: 26414
My License Renewal Date is: DECEMBER 31, 2025

PAGES, SHEETS OR DIVISIONS COVERED BY THIS SEAL:
ALL "C" SHEETS

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
800.798.0313 | SHIVE-HATTERY.COM

BONDURANT PUBLIC PARKING IMPROVEMENTS
CITY OF BONDURANT
200 2ND ST NE, BONDURANT, IA 50035

PRELIMINARY - NOT FOR CONSTRUCTION

100% REVIEW
ISSUE DATE: 06/07/2024

PROJECT NUMBER: 2240004020

C000

P:\Projects\2024\2240004020\Drawings_CAD\COMBINED BONDURANT PARKING IMPROVEMENTS\C000 COVER SHEET.dwg
Printed: 6/7/2024 11:48:52 AM

1.	ALL ELEVATIONS ARE TO NAD83 DATUM.
2.	FIELD SURVEYS FOR THESE PLANS WERE PERFORMED BY SHIVE-HATTERY, INC.
3.	THE CONTRACTOR IS REQUIRED TO REPLACE ALL CONTROL POINTS, PROPERTY CORNERS, AND MONUMENTS DISTURBED BY CONSTRUCTION. PRIOR TO GRADING, LOCATE EXISTING PROPERTY CORNERS, ESTABLISH COORDINATES AND TIES TO EXISTING FACILITIES WHICH ARE TO REMAIN, ESTABLISH HORIZONTAL AND VERTICAL CONTROL. REPLACE MONUMENTS AND BENCHMARKS AFTER CONSTRUCTION. WORK SHALL BE COMPLETED BY A LICENSED SURVEYOR.
4.	THE CONTRACTOR SHALL NOTIFY THE CITY OF BONDURANT, AND SHIVE-HATTERY (515) 223-8104, TO SCHEDULE A PRE-CONSTRUCTION MEETING AT LEAST TWO WEEKS PRIOR TO COMMENCING CONSTRUCTION.
5.	THE CONTRACTOR SHALL PREPARE A DETAILED SCHEDULE OF THE WORK WHICH SHALL BE SUBMITTED AT THE PRE-CONSTRUCTION MEETING. SCHEDULE SHALL SHOW ANTICIPATED MATERIAL DELIVERIES AND COMPLETION OF MAJOR TASKS FOR THE PROJECT.
6.	THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF WORK BETWEEN ALL SUPPLIERS AND SUBCONTRACTORS INVOLVED IN THE PROJECT, INCLUDING STAGING OF CONSTRUCTION DETAILS.
7.	IF THE PROJECT INVOLVES CONTACT WITH THE PUBLIC, THE CONTRACTOR IS ENCOURAGED TO PERFORM THEIR OPERATIONS AS PROFESSIONALLY AS POSSIBLE TO MINIMIZE CONFLICTS WITH THE PUBLIC.
8.	CONTRACTOR SHALL WORK WITH UTILITY COMPANIES TO ACCOMMODATE RELOCATION OF PUBLIC UTILITIES. CONTRACTOR SHALL COORDINATE THEIR WORK WITH THAT OF THE UTILITY COMPANIES SUCH THAT THE PROJECT IS COMPLETED IN ACCORDANCE WITH THE PROJECT TIME REQUIREMENTS.
9.	THE CONTRACTOR SHALL NOTIFY THE CITY OF BONDURANT FIRE DEPARTMENT OR WATER WORKS AT LEAST 24 HOURS PRIOR TO SHUT-DOWN OF ANY WATER MAIN.
10.	ALL HOLES RESULTING FROM THE CONTRACTOR'S OPERATIONS, INCLUDING THE REMOVAL OF FENCE POSTS, UTILITY POLES, OR STRUCTURES, SHALL BE FILLED AND CONSOLIDATED TO FINISHED GRADE AS DIRECTED BY THE ENGINEER TO PREVENT FUTURE SETTLEMENT. VOIDS SHALL BE FILLED AS SOON AS PRACTICAL, PREFERABLY THE SAME DAY THEY ARE CREATED, AND NO LATER THAN THE FOLLOWING DAY. ANY PORTION OF THE RIGHT-OF-WAY OR PROJECT LIMITS DISTURBED BY THESE OPERATIONS SHALL BE BACKFILLED TO WITHIN EIGHT INCHES OF THE ADJACENT SURFACE. THIS SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.
11.	THE MEANS OF THE WORK AND THE SAFETY OF THE CONTRACTOR'S EMPLOYEES ARE SOLELY THE RESPONSIBLITY OF THE CONTRACTOR.
12.	THE CONTRACTOR SHALL CONFINE THEIR WORK TO THE PROJECT LIMITS AND/OR EASEMENTS IDENTIFIED ON THE PLANS. IF THE CONTRACTOR OBTAINS ADDITIONAL EASEMENTS FOR THE STORAGE OF EQUIPMENT AND MATERIALS, COPIES OF THE AGREEMENTS WITH THE PROPERTY OWNERS SHALL BE PROVIDED TO THE CITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE OUTSIDE THE CONSTRUCTION LIMITS RESULTING FROM THEIR NEGLIGENCE. THE CONTRACTOR IS CAUTIONED NEITHER TO OBSTRUCT OR REMOVE ANY EXISTING PAVEMENT, NOR TO DISTURB THE EXISTING TRAFFIC PATTERNS MORE THAN IS NECESSARY FOR THE PROPER EXECUTION OF THE WORK. THE ENGINEER MAY LIMIT THE CONTRACTOR'S OPERATIONS IN ACCORDANCE WITH THE SPECIFICATIONS.
13.	THE CONTRACTOR SHALL NOT DISTURB DESIRABLE GRASS AREAS AND DESIRABLE TREES OUTSIDE THE GRADING LIMITS. THE CONTRACTOR SHALL NOT PARK, SERVICE VEHICLES AND EQUIPMENT, OR USE THESE AREAS FOR STORAGE OF MATERIALS. STORAGE, PARKING AND SERVICE AREA(S) WILL BE SUBJECT TO THE APPROVAL OF THE ENGINEER OR AS DESIGNATED IN THE PLANS. THE CONTRACTOR SHALL ACCESS THE SITE IN A MANNER THAT DOES NOT DAMAGE EXISTING PAVED SURFACES, SIDEWALKS, AND TRAILS THAT ARE NOT DESIGNATED TO BE REPLACED. ANY DAMAGE TO THESE SURFACES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE AS APPROVED BY THE ENGINEER.
14.	TREES AND OTHER VEGETATION WITHIN THE PROJECT LIMITS SHALL BE FELLED AND REMOVED AS NOTED THROUGHOUT THE CONSTRUCTION OF THIS PROJECT.
15.	THE CONTRACTOR SHALL ADEQUATELY BARRICADE FRESH CONCRETE TO PREVENT UNWANTED MARKINGS. BLEMISHED CONCRETE SURFACES SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.
16.	TO AVOID DAMAGE TO EXISTING PAVEMENT SURFACES, THE CONTRACTOR SHALL DOUBLE CUT EXISTING PAVEMENT EDGES AND EXERCISE EXTREME CARE WHEN REMOVING PAVEMENT. EXISTING PAVEMENT NOT SCHEDULED FOR REMOVAL MUST BE PROTECTED. ANY SURFACING DAMAGED BY CONSTRUCTION OPERATIONS BEYOND THE REMOVAL LIMITS SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER MUST BE REMOVED AND REPLACED WITHOUT ADDITIONAL COMPENSATION. RUBBER-WHEELED CONSTRUCTION EQUIPMENT IS ENCOURAGED FOR USE IN THESE AREAS.
17.	CONTRACTOR SHALL PROTECT ALL TREES, LANDSCAPING AND SITE AMENITIES WITHIN THE TEMPORARY CONSTRUCTION LIMITS AND OUTSIDE THE GRADING LIMITS NOT MARKED FOR REMOVAL. ALL DAMAGED TREES, LANDSCAPING, AND SITE AMENITIES SHALL BE REPLACED BY THE CONTRACTOR AT THEIR OWN EXPENSE WITH EQUIVALENT MATERIAL.
18.	IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE WASTE AREAS OR DISPOSAL SITES FOR EXCESS MATERIAL WHICH IS NOT DESIRABLE TO BE INCORPORATED IN THE WORK INVOLVED ON THIS PROJECT (EXCAVATION, METAL POSTS, BROKEN CONCRETE, ETC.). NO PAYMENT FOR OVERHAUL WILL BE ALLOWED FOR MATERIAL HAULED TO THESE SITES.
19.	ESTIMATED QUANTITY FOR NEW CONCRETE PAVEMENT INCLUDES ALL INTEGRAL CURB, STREET RETURNS, SPECIAL AREAS, AND AREAS OF REPAIRS TO CONNECTING PAVEMENT.
20.	SAW CUTS, REINFORCEMENT STEEL, AND LOAD TRANSFER DOWEL BARS AS NOTED IN THE PLANS SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.
21.	THE TOP SIX 6 INCHES OF DISTURBED (TOP SOIL) AREAS SHALL BE FREE OF ROCK AND DEBRIS AND SHALL BE SUITABLE FOR ESTABLISHMENT OF VEGETATION, SUBJECT TO THE APPROVAL OF THE ENGINEER.
22.	DO NOT RESTRICT DRAINAGE CHANNELS. CONTRACTOR IS FULLY LIABLE FOR ALL DAMAGES TO PUBLIC OR PRIVATE PROPERTY CAUSED BY THEIR ACTION OR INACTION IN PROVIDING FOR HANDLING OF STORM WATER FLOW DURING CONSTRUCTION.
23.	THE CONTRACTOR SHALL CLEAN ALL SURFACES PRIOR TO OPENING THE PROJECT TO THE PUBLIC USING A PICKUP BROOM OR STREET SWEEPER THAT CREATES MINIMAL DUST. ALL CLEANING COSTS ARE INCIDENTAL TO THE PROJECT. THE CONTRACTOR IS ALSO RESPONSIBLE FOR KEEPING DIRT AND DEBRIS FROM CONSTRUCTION ACTIVITIES OUT OF ADJACENT STORM SEWERS AND OFF ADJACENT STREETS, DRIVEWAYS, AND PEDESTRIAN FACILITIES
24.	THE CONTRACTOR WILL BE REQUIRED TO LIMIT WORK HOURS ON THE PROJECT FROM 6:30 A.M. TO 9:00 PM., MONDAY THROUGH FRIDAY. SHOULD EQUIPMENT BE USED WHICH IS EXCESSIVELY NOISY AND DISTRESSING TO AREA RESIDENTS, THE ENGINEER RESERVES THE RIGHT TO LIMIT HOURS OF OPERATION FROM 7:00 A.M. TO 7:00 P.M. FOR MONDAY THROUGH FRIDAY. PRIOR APPROVAL FROM THE ENGINEER WILL BE REQUIRED FOR WORK ON WEEKENDS AND HOLIDAYS AND FOR EXCEPTIONS TO THESE TIME RESTRICTIONS.

25.	ALL WORK SHALL BE CONSTRUCTED TO MEET THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT (ADA) AND PUBLIC RIGHT-OF-WAY ACCESSIBILITY GUIDELINES (PROWAG). ANY WORK THAT DOES NOT MEET THESE REQUIREMENTS WILL BE CONSIDERED DEFECTIVE AND BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE. THE CONTRACT SPECIFIED CONSTRUCTION SURVEY SHALL PROVIDE SURVEY STAKING FOR THE GENERAL LAYOUT. PRIOR TO PLACEMENT OF THE SURFACE MATERIAL, THE CONTRACTOR WILL BE RESPONSIBLE TO VERIFY THAT THE SLOPES OF ALL SURFACES ARE WITHIN THE ALLOWABLE RANGES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY IF SLOPES CANNOT BE CONSTRUCTED WITHIN THE ALLOWABLE RANGE. FOLLOWING PLACEMENT OF THE SURFACE MATERIAL, THE CONTRACTOR SHALL MEASURE THE ACTUAL SURFACE SLOPE AND INITIAL AT THE APPROPRIATE LOCATION ON SIDEWALK COMPLIANCE SHEETS TO VERIFY THAT THE SLOPE IS WITHIN ALLOWABLE RANGES. THE CITY RESERVES THE RIGHT TO MEASURE THE SLOPES OF ANY SURFACE AFTER CONSTRUCTION. THERE IS NO TOLERANCE FOR SURFACES TO EXCEED THE MAXIMUM ALLOWABLE SLOPE. SURFACES THAT EXCEED THE MAXIMUM ALLOWABLE SLOPE WILL BE CONSIDERED DEFECTIVE AND SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.
26.	DISPOSE OF ALL WOOD MATERIAL GENERATED AS A RESULT OF CLEARING AND/OR GRUBBING ACCORDING TO THE IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP'S EMERALD ASH BORER (EAB) QUARANTINE ORDER. FOR MORE INFORMATION REFER TO: HTTP://WWW.IOWATREEPESTS.COM/EAB_HOME.HTML
27.	THE CONTRACTOR WILL BE REQUIRED TO HAVE A REPRESENTATIVE AT THE FINAL INSPECTION AND WILL BE RESPONSIBLE TO OPEN ALL MANHOLES AND INTAKES FOR INSPECTION BY CITY PERSONNEL.
28.	WORK WHICH DOES NOT CONFORM TO THE REQUIREMENTS OF THE CONTRACT WILL BE CONSIDERED UNACCEPTABLE. UNACCEPTABLE WORK, WHETHER THE RESULT OF POOR WORKMANSHIP, USE OF DEFECTIVE MATERIALS, DAMAGE THROUGH CARELESSNESS OR ANY OTHER CAUSE, FOUND TO EXIST PRIOR TO THE FINAL ACCEPTANCE OF THE WORK, SHALL BE REMOVED AND REPLACED IN AN ACCEPTABLE MANNER, AS REQUIRED BY OWNER'S REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE.
29.	CONTRACTOR SHALL MAINTAIN PROPERTY ACCESS FOR ADJACENT PROPERTIES IN ACCORDANCE WITH THE PLANS. THE COSTS INCURRED TO FACILITATE CONSTRUCTION PHASING OR TO MAINTAIN ACCESS SHALL BE INCIDENTAL TO THE PROJECT.
30.	THE CONTRACTOR MUST NOTIFY UTILITY OWNERS OF ANY PUBLIC UTILITY FIXTURES SHOWN ON THE PLANS OR ENCOUNTERED WITHIN THE CONSTRUCTION AREA BEFORE STARTING CONSTRUCTION AND PROVIDE ACCESS FOR NECESSARY MODIFICATIONS. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING, RELOCATING, AND CONSTRUCTING UTILITY FACILITIES IN COORDINATION WITH UTILITY COMPANIES, ADHERING TO THEIR GUIDELINES, AND USING CAUTION TO AVOID DAMAGE. ANY DAMAGED UTILITIES MUST BE REPAIRED TO THE UTILITY OWNER'S SATISFACTION. UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE, BASED ON AVAILABLE SURVEYS AND RECORDS. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES AT CRITICAL LOCATIONS TO VERIFY EXACT HORIZONTAL AND VERTICAL LOCATION. TO AVOID DAMAGE, ANY ADDITIONAL FACILITIES NOT SHOWN MUST ALSO BE IDENTIFIED. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR INTERFERENCE, DELAYS, OR COSTS RELATED TO UTILITY WORK, INCLUDING STAGING CONSTRUCTION, PROVIDING TEMPORARY SUPPORTS, AND COORDINATING WITH UTILITIES. KNOWN UTILITY CONFLICTS ARE BEING RESOLVED BY THE RESPECTIVE UTILITY COMPANIES, AND ANY CONFLICTS DISCOVERED DURING CONSTRUCTION WILL BE ADDRESSED AS THEY ARISE.
31.	THE CONTRACTOR IS REQUIRED TO UTILIZE THE UTILITY ONE-CALL SERVICE AT (800) 292-8989 AT LEAST 48 HOURS (EXCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS) PRIOR TO EXCAVATING ANYWHERE ON THE PROJECT.
32.	THE CONTRACTOR SHALL VERIFY WHICH UTILITIES HAVE BEEN RECONSTRUCTED AND/OR ABANDONED ALONG WITH THEIR LOCATIONS PRIOR TO STARTING ANY WORK UNDER THIS CONTRACT. COORDINATION WITH UTILITIES WILL BE REQUIRED.
33.	THE CONTRACTOR IS TO USE DUE CAUTION IN WORKING OVER AND AROUND ALL TILE LINES. BREAKS IN TILE LINES DUE TO THE CONTRACTOR'S CARELESSNESS ARE TO BE REPLACED AT THEIR EXPENSE WITHOUT COST TO THE OWNER. ANY TILE LINES BROKEN OR DISTURBED BY PROJECT CUT WILL BE REPLACED AS DIRECTED BY THE ENGINEER IN CHARGE OF CONSTRUCTION AND AT THE OWNER'S EXPENSE.
34.	ANY STORM SEWER OR DRAIN DISRUPTED BY CONSTRUCTION MUST BE TIED INTO NEW STORM SEWER UNTIL ALL PERMANENT STORM SEWER CONNECTIONS ARE OPERATIONAL. COST SHALL BE INCIDENTAL TO STORM SEWER CONSTRUCTION.
35.	TO OBTAIN CORRECT FORM GRADES AT LOW POINTS WHERE INTAKES ARE LOCATED, THE CONTRACTOR MUST EXERCISE EXTREME CARE WHEN FINISH GRADING.
36.	SPECIAL CARE SHALL BE TAKEN WHEN FORMING AT INTERSECTIONS SO THE PAVEMENT GRADES SHOWN ON THE PLANS ARE OBTAINED. SHORT LENGTHS OF FLEXIBLE FORMS MAY BE NECESSARY AT THESE LOCATIONS TO MEET GRADES AS SPECIFIED. ALL GRADES AS CALLED OUT SHALL BE STAKED IN THE FIELD.
37.	BLADING AND SHAPING, AS WELL AS ANY OTHER INCIDENTAL WORK IN PREPARATION FOR AND MAINTENANCE OF TEMPORARY ACCESSES IS INCIDENTAL TO OTHER WORK ON THE PROJECT.
38.	SPOT ELEVATIONS SHOWN REPRESENT ELEVATION AT FINISHED GRADE UNLESS OTHERWISE NOTED.
39.	DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY HAS PERMANENTLY STOPPED SHALL BE SEEDED OR SODDED. THESE AREAS SHALL BE SEEDED OR SODDED NO LATER THAN 14 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY OCCURRING IN THESE AREAS.
40.	THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE EROSION CONTROL MEASURES (SILT FENCES, WATTLES ,INLET PROTECTION, ETC.) TO PREVENT EROSION.
41.	CONTRACTORS OR SUBCONTRACTORS WILL BE RESPONSIBLE FOR REMOVING SEDIMENT THAT MAY HAVE COLLECTED IN THE STORM SEWER DRAINAGE SYSTEMS IN CONJUNCTION WITH THE STABILIZATION OF THE SITE.
42.	THE DISTURBED CONSTRUCTION AREA IS LESS THAN 1 ACRE, SO AN NPDES GENERAL PERMIT NO. 2 AND STORMWATER POLLUTION PREVENTION PLAN (SWPPP) ARE NOT REQUIRED. HOWEVER, THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING AND MAINTAINING EROSION CONTROL THROUGHOUT CONSTRUCTION.
43.	NECESSARY TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (2023 EDITION). CONTRACTOR SHALL PROVIDE A MINIMUM OF 1 WEEK NOTICE PRIOR TO COMMENCING WORK WITHIN ROW OR CLOSURE OF 3RD STREET OR 1ST STREET. ALL OTHER PLACEMENT AND CHANGES TO TRAFFIC CONTROL WILL REQUIRE A 48 HOUR NOTICE (EXCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS) TO THE ENGINEER AND CITY OF BONDURANT.

THE MOST RECENT EDITION OF THE IOWA STATEWIDE URBAN DESIGN SPECIFICATIONS FOR PUBLIC IMPROVEMENTS SHALL APPLY TO ALL WORK PERFORMED ON THIS PROJECT EXCEPT AS MODIFIED HEREIN.

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1ST & 3RD STREET PARKING IMPROVEMENTS
CITY OF BONDURANT
200 2ND ST NE, BONDURANT, IA 50035

DRAWN BY	BDD
APPROVED BY	KAL
ISSUED FOR	CONSTRUCTION
ISSUE DATE	06/17/2024
PROJECT NUMBER	2240004020
FIELD BOOK	-

CONSTRUCTION NOTES

C001

6/6/2024

ESTIMATED PROJECT QUANTITIES

				Quantities					
				Estimated			As-Built		
Item No.	Item Code	Item	Unit	Division 1	Division 2	Total	Division 1	Division 2	Total
EARTHWORK									
1	2010-C	CLEARING AND GRUBBING	LS	0	1	1			
2	2010-D	TOPSOIL, STRIP, SALVAGE AND SPREAD	CY	273.0	216.0	489.0			
3	2010-E	EXCAVATION, CLASS 10	CY	261.0	233.0	494.0			
4	2010-D	EMBANKMENT IN PLACE, STOCKPILE	CY	189.0	0.0	189.0			
5	2010-G	SUBGRADE PREPARATION, 12 IN.	SY	1308.0	1094.0	2402.0			
SEWERS AND DRAINS									
6	4020-A	STORM SWR G-MAIN, TRENCHED, HDPE, 12 IN	LF	104.0	0.0	104.0			
7	4040-A	STORM SUBDRAIN, TRENCHED, CORRUGATED HDPE, 6 IN	LF	97.0	0.0	97.0			
8	4040-B	STORM SUBDRAIN, CLEANOUT	EA	1	0	1			
STREETS AND RELATED WORK									
9	5020-F	VALVE BOX ADJUSTMENT	EA	1	0	1			
10	7010-A	STD/S-F PCC PAVEMENT, CLASS C, CLASS III, 6 IN	SY	665.0	672.0	1337.0			
11	7030-E	SIDEWALK, PCC, 5 IN	SY	184.0	248.0	432.0			
12	7030-G	DETECTABLE WARNING	SF	109.0	0.0	109.0			
13	7040-H	PAVEMENT REMOVAL	SY	170.0	323.0	493.0			
14	7080-E	INTERLOCKING PERMEABLE PAVERS	SY	162.0	0.0	162.0			
STRUCTURES FOR SANITARY AND STORM SEWERS									
15	6010-A	SANITARY MANHOLE ADJUSTMENT, MINOR	EA	1	0	1			
16	6010-B	SW-501 STORM STRUCTURE	EA	1	0	1			
17	6010-G	SW-401 STORM STRUCTURE, 48"	EA	1	0	1			
TRAFFIC CONTROL									
18	8020-B	PAINTED PAVEMENT MARKINGS, SOLVENT/WATERBORNE	STA	2.8	4.3	7.1			
19	8020-G	PAINTED PAVEMENT SYMBOLS AND LEGENDS	EA	1	1	2			
20	8030-A	TEMPORARY TRAFFIC CONTROL	LS	0.5	0.5	1			
21	8040-B	TYPE- 'A' SIGN ASSEMBLY INSTALLATION	EA	1	1	2			
22	8040-I	REMOVAL AND REINSTALLATION OF EXISTING TRAFFIC SIGN	EA	2	0	2			
SITE WORK AND LANDSCAPING									
23	9010-B	HYDRAULIC SEEDING, FERTILIZING, & MULCHING TYPE 1	AC	0.3	0.2	0.5			
24	9030-B	PLANTS WITH WARRANTY, TREE	EA	4	6	10			
25	9040-D	FILTER SOCK, 8 IN.	LF	266.0	280.0	546.0			
26	9040-D	REMOVAL OF FILTER SOCK	LF	266.0	280.0	546.0			
27	9040-T	INTAKE SEDIMENT FILTER BAG	EA	4	2	6			
28	9040-T	REMOVAL OF SEDIMENT FILTER BAG	EA	4	2	6			
DEMOLITION									
29	10010-B	REMOVAL OF STRUCTURAL	LS	1	0	1			
MISCELLANEOUS									
30	11010-A	CONSTRUCTION SURVEY	LS	0.6	0.4	1			
31	11020-A	MOBILIZATION	LS	0.6	0.4	1			
32	11060-A	CONCRETE WASHOUT	EA	1	1	2			
33	11000-SPECIAL	6 FT. WOODEN FENCE	LF	120.0	0.0	120.0			
34	11000-SPECIAL	SITE LIGHTING AND CIRCUITRY	LS	0.6	0.4	1			
35	11000-SPECIAL	TEMPORARY CONSTRUCTION FENCE	LF	150.0	150.0	300.0			

DIVISION 1 - 3RD STREET
DIVISION 2 - 1ST STREET

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ESTIMATED PROJECT QUANTITIES

C002

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6/6/2024

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
EARTHWORK		
1	2010-C	CLEARING AND GRUBBING
		Item includes removal of undesirable trees and brush as noted within limits shown on sheet CD01 and CD02.
2	2010-D	TOPSOIL, STRIP, SALVAGE AND SPREAD
		Strip and salvage topsoil to a minimum depth of 6" prior to excavation. Topsoil to be spread to a minimum of 8" in all disturbed areas. Do not stockpile with other materials. Excess material, if any, to be wasted on site upon foreslopes, backslopes, and ditches. Payment shall be plan quantity adjusted for obvious errors, plan revisions, or change orders.
3	2010-E	EXCAVATION, CLASS 10
		The combined sites have an adjusted cut volume of 494 CY and an adjusted fill volume of 617 CY resulting in 123 CY of remaining fill needed to construct desired embankments (30% shrinkage adjustment). Division 1 (3rd Street) - On Site Cut: 261 CY - Required Fill: 450 CY - Balance: - 189 CY (Short) Division 2 (1st Street) - On Site Cut: 233 CY - Required Fill: 167 CY - Balance: + 66 CY (Long) It is the contractor's responsibility to verify suitability of available material an on site prior to construction. Fill material shall be free from sticks, roots, debris, and organic matter. Type 'A' compaction shall apply to the compaction and preparation of embankments. No payment for overhaul shall be made on this project. Payment shall be plan quantity adjusted for obvious errors, plan revisions, or change orders.
4	2010-D	EMBANKMENT IN PLACE, STOCKPILE
		The 3rd St. site (Division 1) has an adjusted fill of 450 CY and an adjusted cut of 261 CY. The 1st St. Site (Division 2) is expected to have a net excess of 66CY of suitable fill material. The plan quantity of 189 CY represents the total adjusted fill needed to construct desired embankment at 3rd Street. The contractor shall apply the 66 CY of additional Class 10 material located at the 1st Street (Division 2) site. The remaining 123 CY shall be procured from an existing stock pile located at the Bondurant Recreational Sports Complex (BRSC). The Contractor shall coordinate with the City on the procurement of material located at BRSC. Type 'A' compaction shall apply to the compaction and preparation of embankments. No payment for overhaul shall be made on this project. Payment shall be plan quantity adjusted for obvious errors, plan revisions, or change orders.
5	2010-G	SUBGRADE PREPARATION, 12 IN.
		This item shall include preparation of the top 12" of subgrade beneath paved areas. Subgrade shall be prepared in two 6" lifts. For areas in cut, remove and replace top 6" of subgrade to prepare lower lift. Subgrade preparation shall extend a minimum of 2' beyond edge of pavement.
SEWER AND DRAINS		
6	4020-A	STORM SWR G-MAIN, TRENCHED, HDPE, 12 IN
7	4040-A	STORM SUBDRAIN, TRENCHED, CORRUGATED HDPE, 6 IN
		Incidental to this item is the connection of the subdrain to the 12" HDPE. All Flexible pipe to receive Class F-2 bedding. Refer to SUDAS Figure 1010.103. Flexible pipe bedding shall be incidental to this item. This item includes all necessary elbows, tees, connections, and backfill material to install the subdrain.
8	4040-B	STORM SUBDRAIN, CLEANOUT
		Cleanout to be installed as shown on Sheet C301. Cleanout shall be per SUDAS Figure 4040.232 Type a-1
STREETS AND RELATED WORK		
9	5020-F	VALVE BOX ADJUSTMENT
		Refer to C301 for location.
10	7010-A	STD/S-F PCC PAVEMENT, CLASS C, CLASS III, 6 IN
		Mix shall be C-4 concrete mix and conform to Iowa SUDAS spec section 7010. Item includes integral curbs. All pavement joints to be cleaned and sealed prior to opening to traffic. Pavement smoothness incentives shall not apply. Pavement thickness incentives shall not apply. Provide 'Type BT' joints to tie into existing paving and between pours. Joints shall be spaced at a maximum spacing of 15 ft-sq and match existing jointing wherever possible. Reinforcing steel shall be considered incidental. Keyway joints will not be allowed.
11	7030-E	SIDEWALK, PCC, 5 IN
		Refer to sheets C101 and C102 for locations. Submit proposed mix designs to City and Engineer for approval. Subgrade preparation and 6" integral curb to be incidental to this item.
12	7030-G	DETECTABLE WARNING
		Place detectable warnings at locations shown on site plan. Coordinate color and material with the City of Bondurant.
13	7040-H	PAVEMENT REMOVAL
		Quantity includes removal and disposal of all removed pavement. Full depth saw cutting is incidental and required prior to removal of pavement adjacent to existing pavement. Adjacent pavement damaged during removals shall be replaced by Constractor incidental to this item. Removal or curb is also incidental to this item.
14	7080-E	INTERLOCKING PERMEABLE PAVERS
		Refer to sheet site plan for permeable pavers location and dimensions. Drainable rock layers located beneath the permeable pavers shall be incidental to this item per detail to on sheet C501.
STRUCTURES FOR SANITARY AND STORM SEWERS		
15	6010-A	SW-401 STORM STRUCTURE, 48"
		This item shall include the removal and reconnection of existing 18" RCP to proposed SW-401 manhole. The connection to the proposed 12" HDPE pipe is also incidental to this item.
16	6010-B	SW-501 STORM STRUCTURE
17	6010-G	SANITARY MANHOLE ADJUSTMENT, MINOR
		See sheet C301 for location.

6/6/2024

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
TRAFFIC CONTROL		
18	8020-B	PAINTED PAVEMENT MARKINGS, SOLVENT/WATERBORNE
19	8020-G	PAINTED PAVEMENT SYMBOLS AND LEGENDS
		Refer to Site Plan for for location and dimensions. Item includes payment for the preparation and installation of pavement markings, symbols, and legends.
20	8030-A	TEMPORARY TRAFFIC CONTROL
		Traffic control plan shall be the responsibility of the contractor. Item includes providing, placing, shifting, maintaining, replacing and removing of all traffic control signage and devices required during the project. This item shall include any signs, barricades, and temporary fencing required to properly identify the construction site and keep the public safe.
21	8040-B	TYPE- 'A' SIGN ASSEMBLY INSTALLATION
		Item shall include all materials, labor and equipment necessary to install Handicap sign assembly as detailed on sheet C501 and as called out on sheet C101. This includes but is not limited to sheet aluminium, steel tubing, and mounting hardware.
22	8040-I	REMOVAL AND REINSTALLATION OF EXISTING TRAFFIC SIGN
		Item shall include the removal and reinstallation of traffic signs called out on sheet CD01.
SITE WORK AND LANDSCAPING		
23	9010-B	HYDRAULIC SEEDING, FERTILIZING, & MULCHING TYPE 1
		Type 1 seed mixture shall be applied hydraulically to all dustubrd areas within the project limits. Seed shall ve appled at a rate of 10 lbs. per 1000 SF. Mulching and fertilizing shall be included with this item. Bonded fiber matrix shall be used for hydro-mulching
24	9030-B	PLANTS WITH WARRANTY, TREE
		Refer to L101 and L102 for species, sizes, and location. Refer to L101 and L102 for planting and details. Tree shall be minimum 2-inch caliper balled and burlapped root stock. Refer to supplemental specification 32 9100 Landscape Planting for product submittals, labor, materials, installation and a warranty period of 1 year.
25	9040-D	FILTER SOCK, 8 IN.
		Filter socks shall be placed in a manner to contain sediment from migration from the prohect sire or at the ditection of the Engineer. Includes anchoring stakes. Refer to SUDAS specifications 9040.102 and 9040.105 for further information on filter sock.
26	9040-D	REMOVAL OF FILTER SOCK
		Remove filter sock as necessary and at the completion of the project.
27	9040-T	INTAKE SEDIMENT FILTER BAG
		This item includes the installation of the intake sediment filter bag.
28	9040-T	REMOVAL OF SEDIMENT FILTER BAG
		This item includes the removal of the intake sediment filter bag.
DEMOLITION		
29	10010-B	REMOVAL OF STRUCTURAL
		This item includes the removal and disposal of the exisiting building and foundation. See sheet CD01 for location of buidling to be removed.
MISCELLANEOUS		
30	11010-A	CONSTRUCTION SURVEY
		Construction staking shall be provided by Shive-Hattery. This bid item shall include all survey work necessary for consturction of this project as intended by the contract documents and approved revisions. All contruction staking shall be performed by or under the supervision of a licesnced surveyor or engineer. The contractor will be responsible for maintaining all horizontal and vertical control within the project limits following completion of the construction activities. This item shall also include resetting and filing of tie certifications on disturbed section corners. The contractor is required to replace all control points, property corners, and monuments obliterated by construction operations. Prior to grading, locate additional existing property corners, establish coordinates and ties to existiong facitilies which are to remian, establish horizontal and verical control. Replace monuments and benchmarks after construction.
31	11020-A	MOBILIZATION
32	11060-A	CONCRETE WASHOUT
		This bid item includes, but is not limited to, providing containment, collection, and dispossal for concrete wash water.
33	11000-SPECIAL	6 FT. WOODEN FENCE
		A 6' tall wooden fence shall be installed at the location specified on sheet C101. Contractor shall sand and prime face off fence per fence detail. Fence dimensions will be 120' in length by 6' tall.
34	11000-SPECIAL	SITE LIGHTING AND CIRCUITRY
		Refer to sheets E101 and E102 for locations and materials for all lights poles, fixtures and conduit. Contractor to procure and install lighting fixtures on 3rd Street and also must extend service and instal meter panel. Contractor to coordinate with City of Bondurant on 1st Street lighting and use poles provided by the City. Contractor to install conrete footings.
35	11000-SPECIAL	TEMPORARY CONSTRUCTION FENCE
		This item shall include the installation, removal and maintenance of a temporary construction fence. For critical root zone (CRZ) tree protection, only hand work shall occur within the CRZ. Contractor shall use extreme care when working within zone to limit construction footprint to the maximum extent possible.

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FIELD BOOK	–

ESTIMATE REFERENCE NOTES

C003

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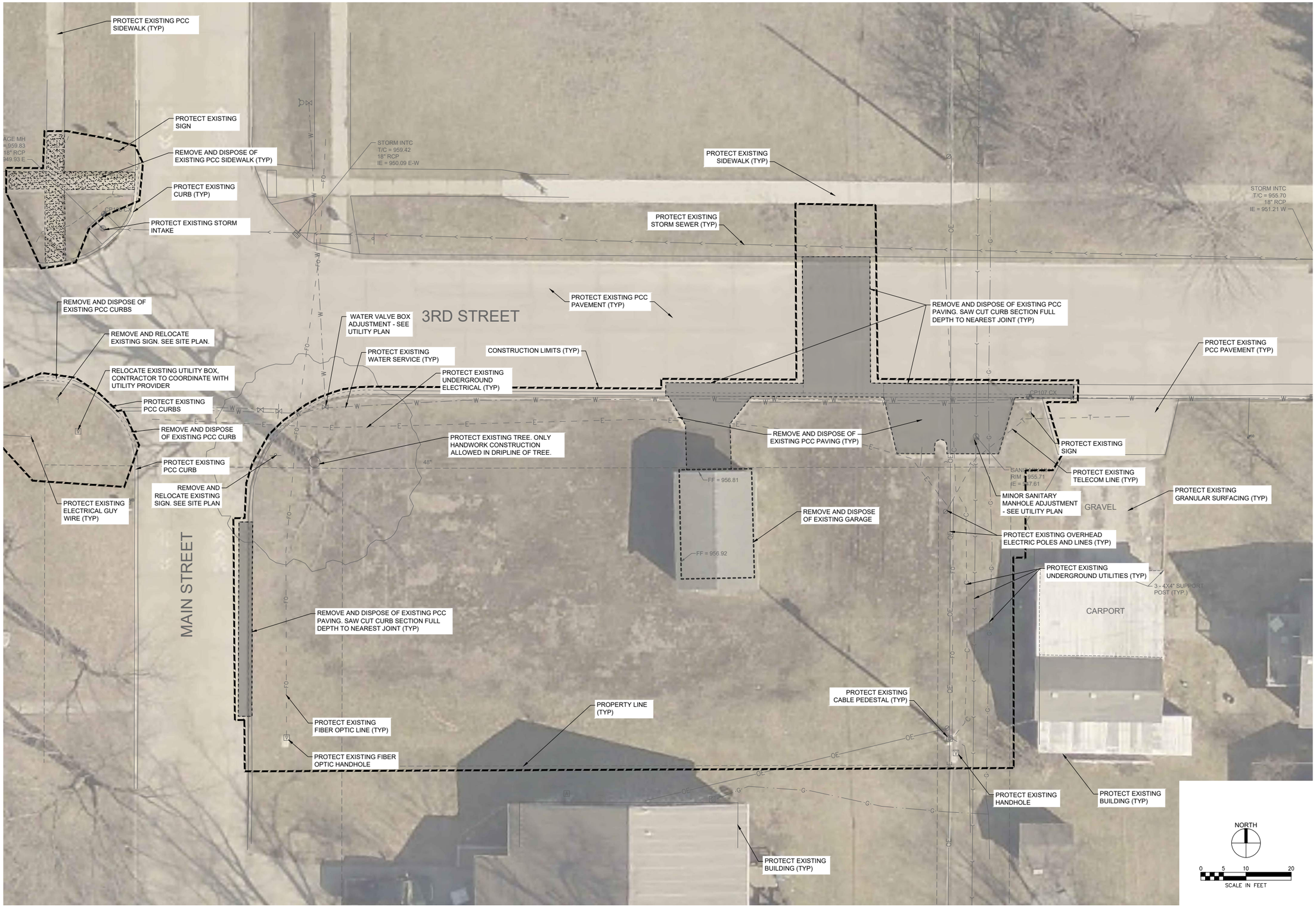

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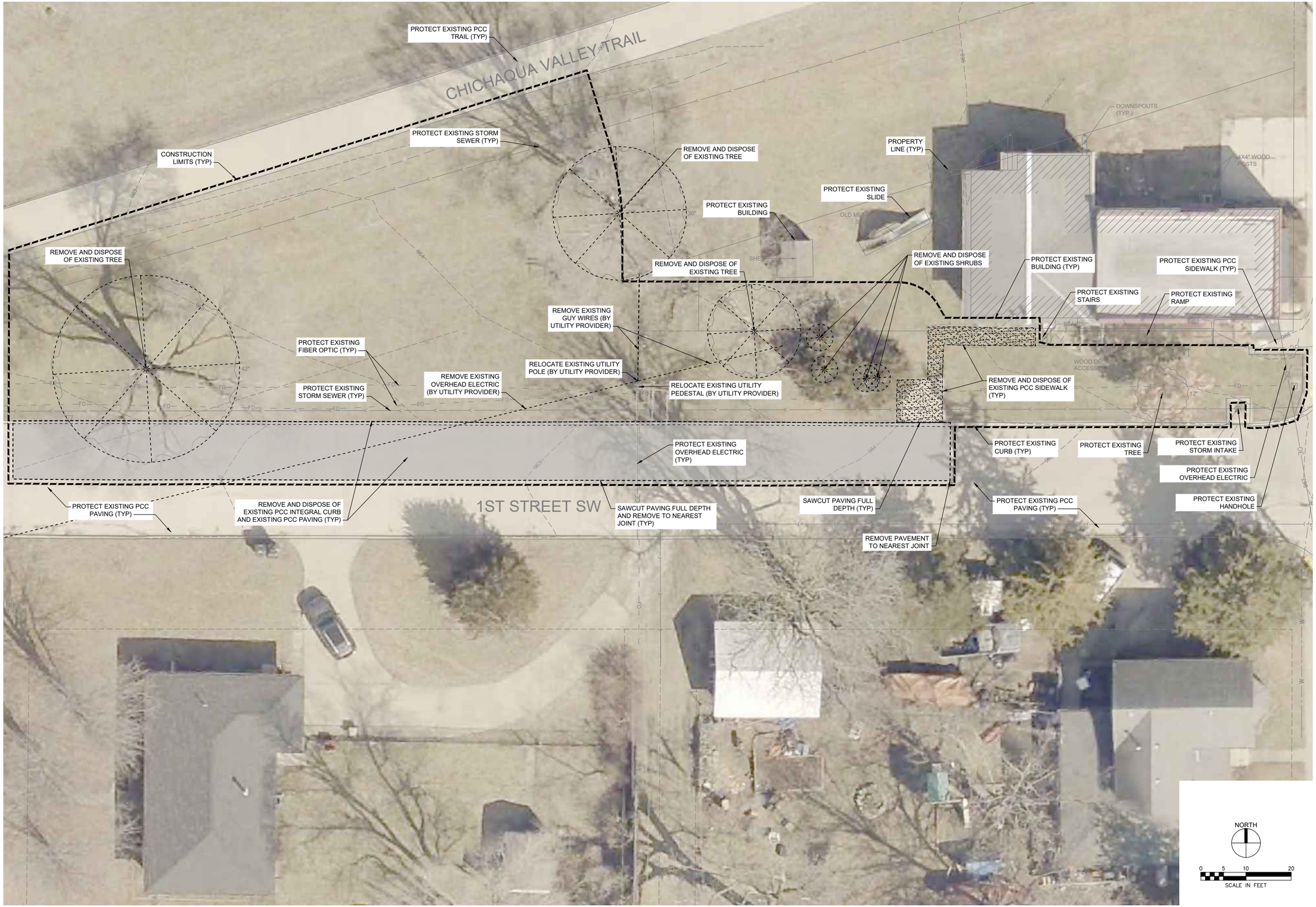
DEMOLITION PLAN - 3RD ST

CD01



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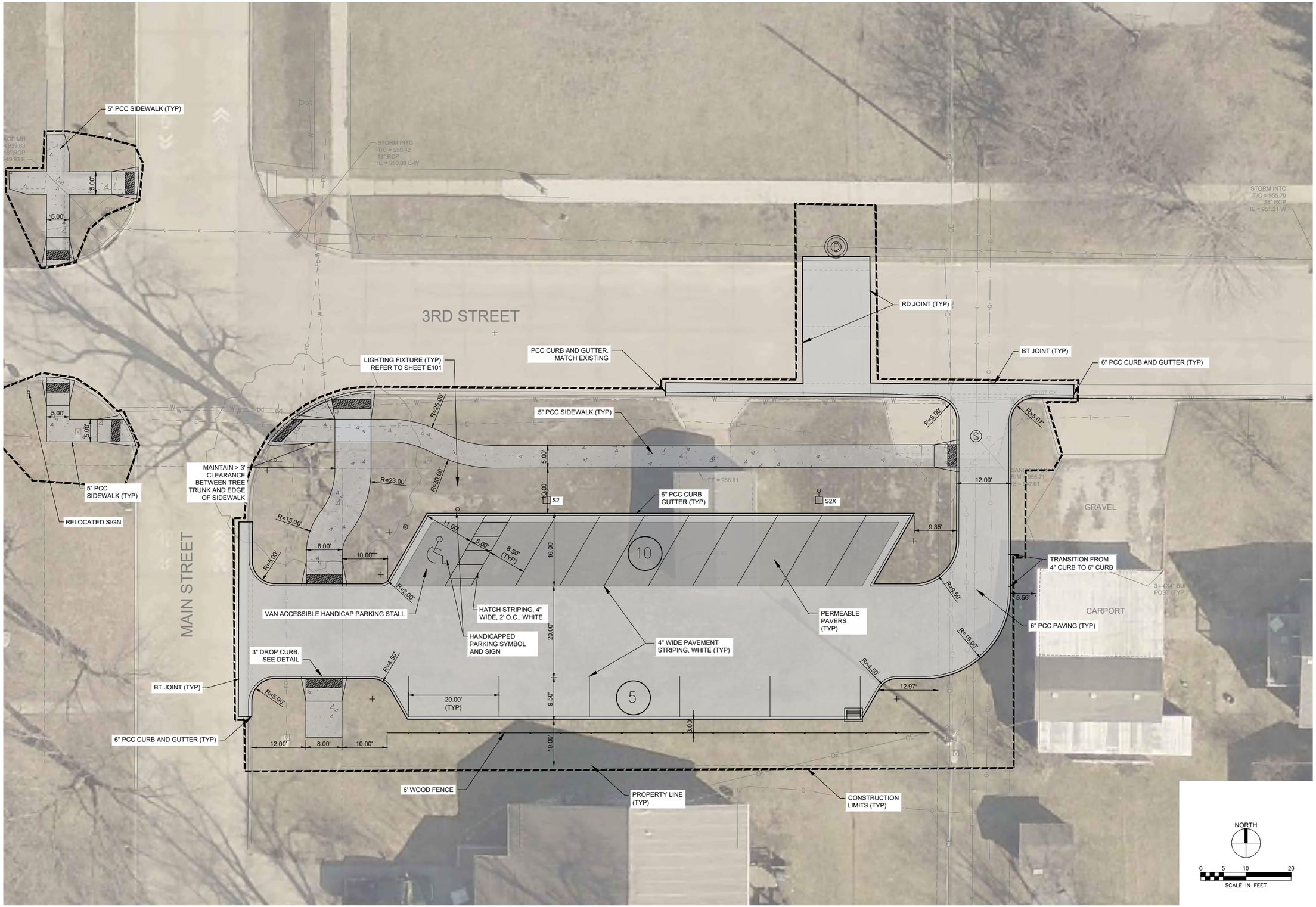
DEMOLITION PLAN - 1ST ST

CD02



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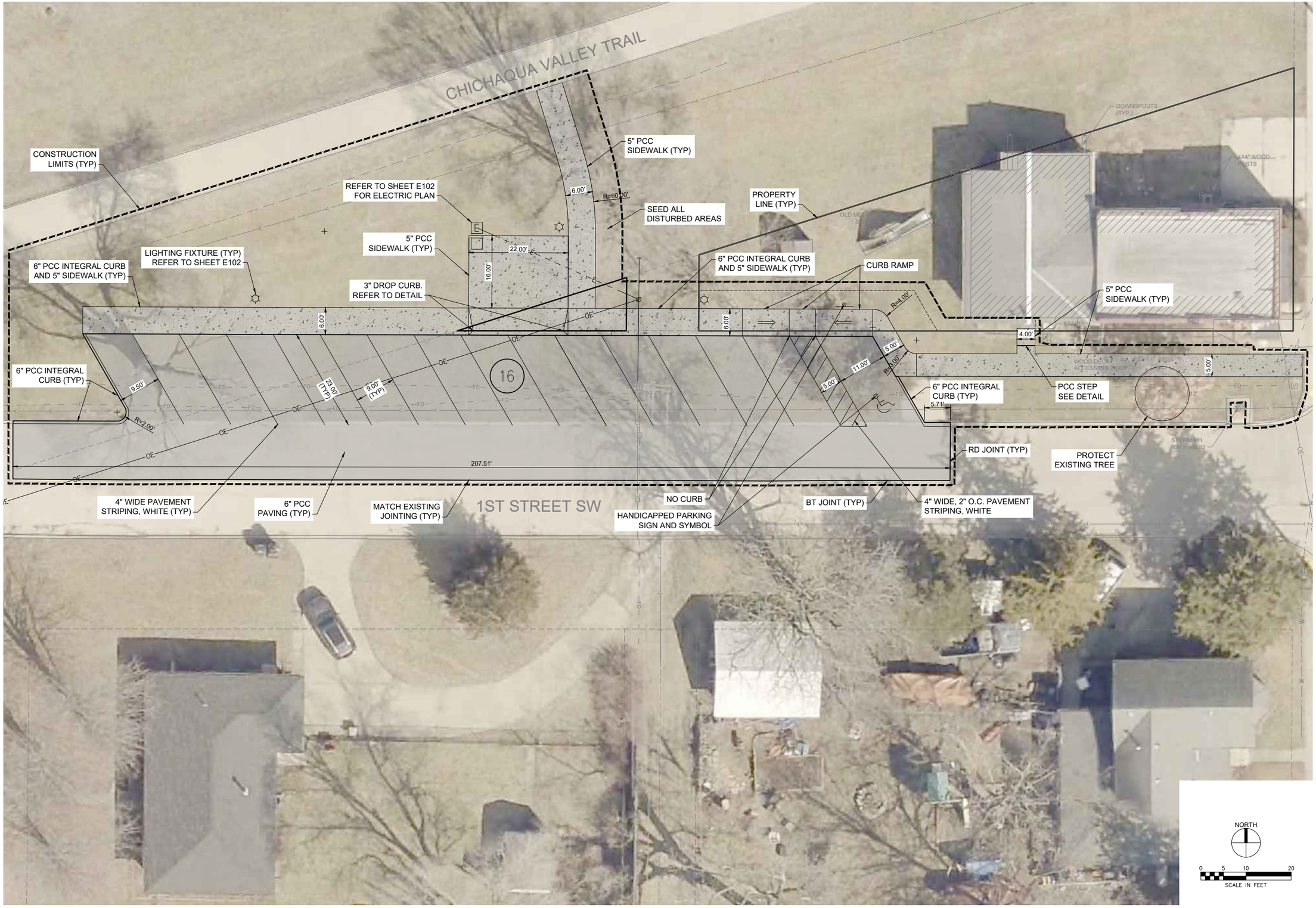
SITE PLAN - 3RD ST

C101



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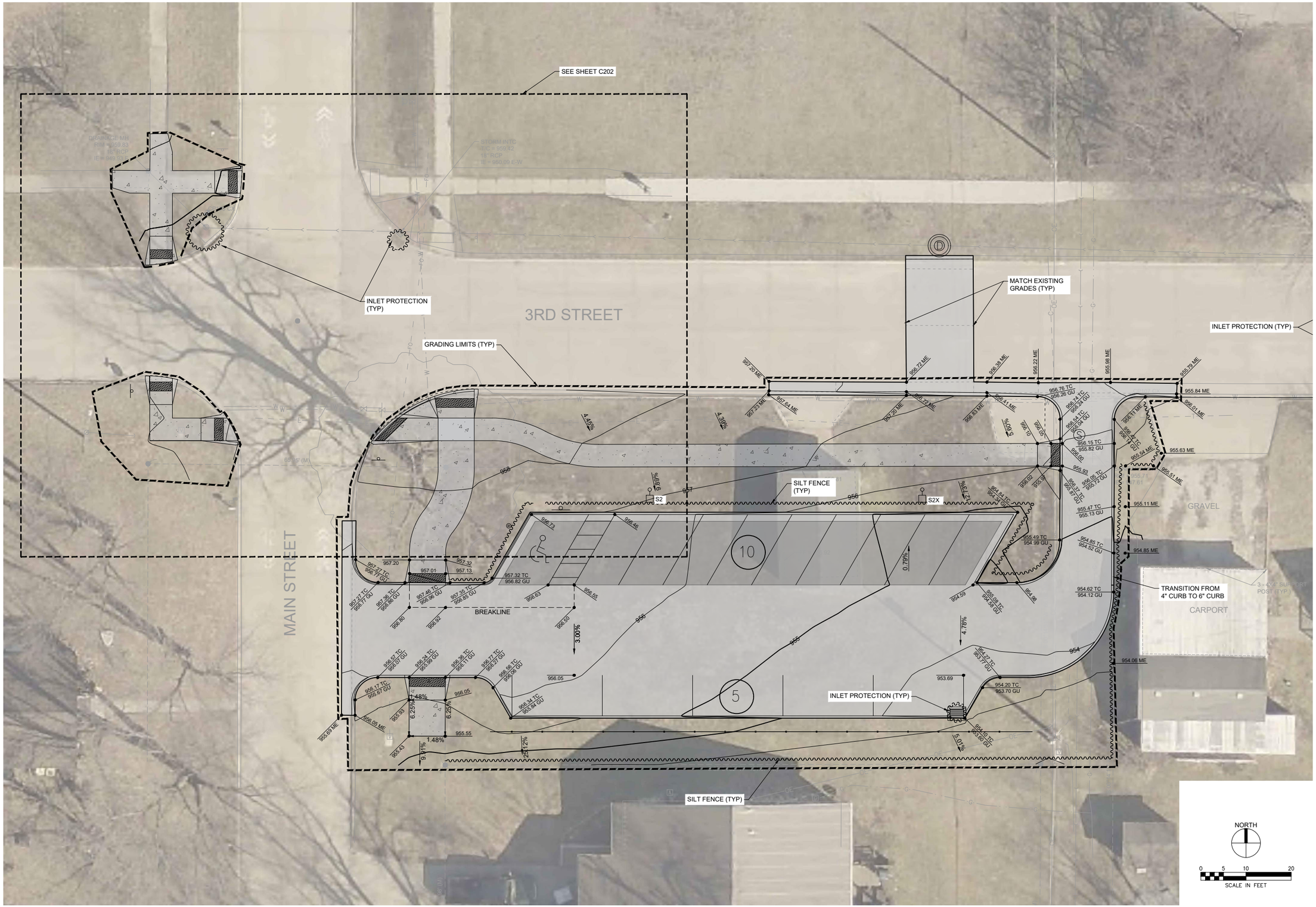
SITE PLAN - 1ST ST

C102



NORTH

0 5 10 20

SCALE IN FEET

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GRADING PLAN - 3RD ST

C201

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GRADING PLAN - 3RD ST

C202

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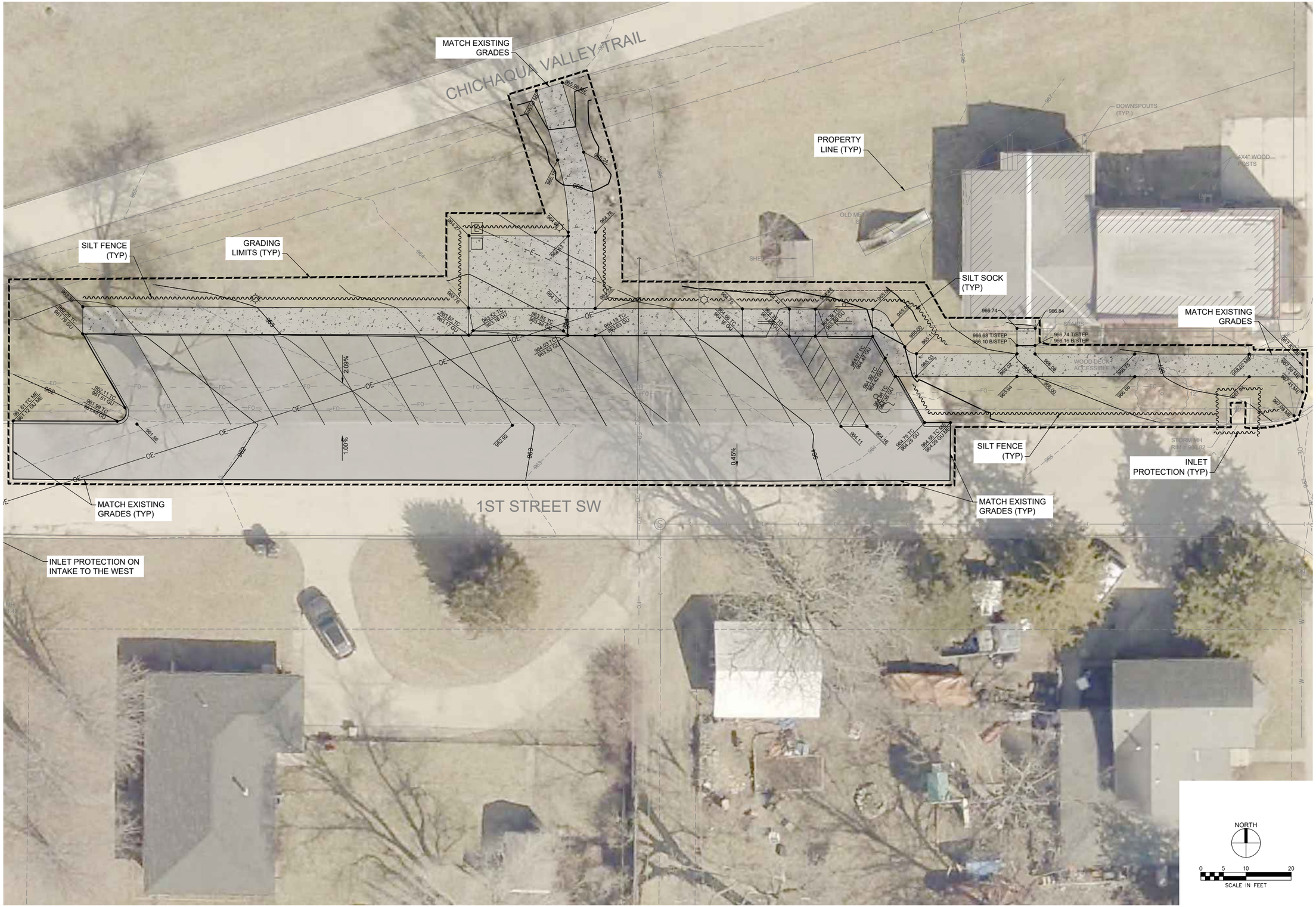

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GRADING PLAN - 1ST ST

C203

SUBDRAIN NOTES:
MIN. DEPTH: 3.5'
MAX. DEPTH: 5.0'
TARGET DEPTH: 4.0'

MIN. SLOPE: 0.5%

INSTALL SUBDRAIN AT SLOPE NECESSARY TO ACHIEVE DESIRED DEPTH. INSTALL INSERTA-TEE OR APPROVED EQUAL AT PIPE CONNECTIONS. INSTALL RISERS AT PIPE CONNECTIONS WHEN NECESSARY TO ACHIEVE DESIRED DEPTH.

STORM INTC
T/C = 959.42
18" RCP
IE = 950.09 E-W

MH 1.1 (48" - SW-401)
RIM = 953.01
IE = 950.78 ST-1.1 S

3RD STREET

ADJUST WATER VALVE BOX TO MATCH PROPOSED GRADE

CONSTRUCTION LIMITS (TYP)

SUBDRAIN CLEANOUT
RIM = 957.59
IE = 953.59

S2

S2X

FF = 956.81

ST-1.1 101 LF
12 " HDPE @ 1.00%

MINOR SANITARY MANHOLE ADJUSTMENT
EXISTING RIM = 955.71
PROPOSED RIM = 956.02

97 LF 6" PERFORATED HDPE SUBDRAIN @ 2.00%

CONNECT 6" SUBDRAIN TO 12" STORM SEWER WITH INSERTA-TEE OR APPROVED EQUAL
IE = 951.65 6" SUBDRAIN
IE = 951.40 12" STORM

MAIN STREET

CARPORT

3 - 4X4" SUPPORT POST (TYP.)

ST INT-1.1 (SW-501)
T/C = 954.10
IE = 951.82 ST-1.1 N

NORTH

0 5 10 20
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UTILITY PLAN - 3RD ST

C301

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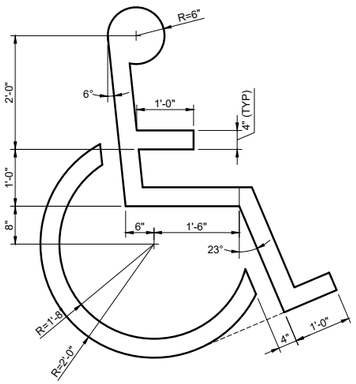
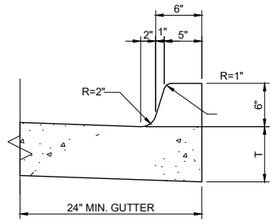


NOTE: SYMBOL TO BE CENTERED IN PARKING SPACE AND ORIENTED AS ILLUSTRATED ON PLANS.

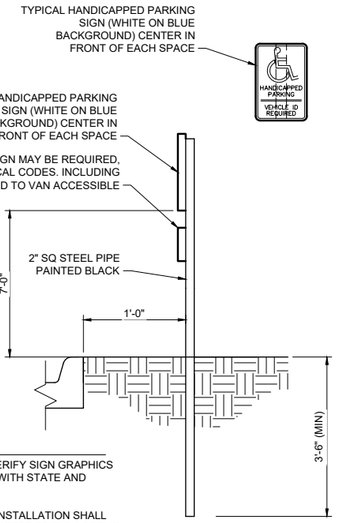
8 HANDICAP PARKING SYMBOL
NTS



T = THICKNESS OF PAVEMENT

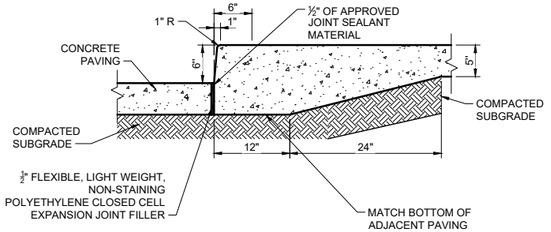
NOTE: CURB MAY BE POURED INTEGRALLY WITH PAVEMENT IN PLACE OF CURB AND GUTTER SECTION.

6 PCC CURB AND GUTTER
NTS

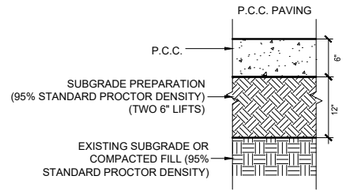


NOTES:
1. CONTRACTOR TO VERIFY SIGN GRAPHICS AND INSTALLATION WITH STATE AND LOCAL CODES.
2. TRAFFIC SIGN AND INSTALLATION SHALL CONFORM TO THE LATEST EDITION OF THE MANUAL ON TRAFFIC CONTROL DEVICES

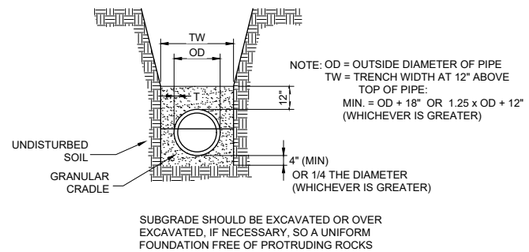
4 HANDICAP PARKING SIGN
NTS



1 INTEGRAL PCC CURB AND SIDEWALK
NTS



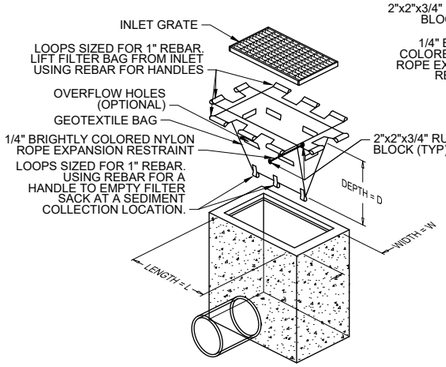
9 PAVING CROSS SECTIONS
NTS



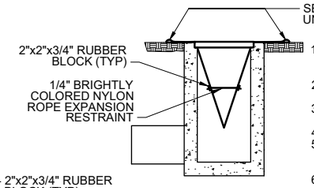
NOTE: OD = OUTSIDE DIAMETER OF PIPE
TW = TRENCH WIDTH AT 12" ABOVE TOP OF PIPE:
MIN. = OD + 18" OR 1.25 x OD + 12" (WHICHEVER IS GREATER)

SUBGRADE SHOULD BE EXCAVATED OR OVER EXCAVATED, IF NECESSARY, SO A UNIFORM FOUNDATION FREE OF PROTRUDING ROCKS MAY BE PROVIDED.

7 FLEXIBLE PIPE BEDDING
NTS



ISOMETRIC VIEW
DO NOT USE ON ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS

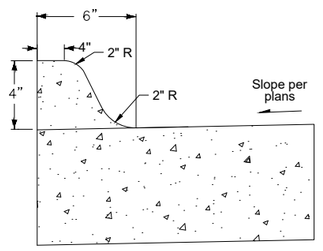


ELEVATION VIEW
PROFILE VIEW OF INSTALLED FILTER SACK

1. EMPTY FILTER SACK WHEN BRIGHTLY COLORED EXPANSION RESTRAINT CAN NO LONGER BE SEEN.
2. GEOTEXTILE WILL BE WOVEN POLYPROPYLENE FABRIC THAT MEETS OR EXCEEDS.
3. AN OIL ADSORBENT PAD OR PILLOW CAN BE PURCHASED WHEN OILS SPILLS ARE A CONCERN.
4. INSPECT PER REGULARTORY REQUIREMENTS.
5. THE WIDTH, "W", OF THE FILTER SACK WILL MATCH THE INSIDE WIDTH OF THE GRATED INLET BOX.
6. THE DEPTH, "D", OF THE FILTER SACK WILL BE BETWEEN 18 INCHES AND 36 INCHES.
7. THE LENGTH, "L", OF THE FILTER SACK WILL MATCH THE INSIDE LENGTH OF THE GRATED INLET BOX.

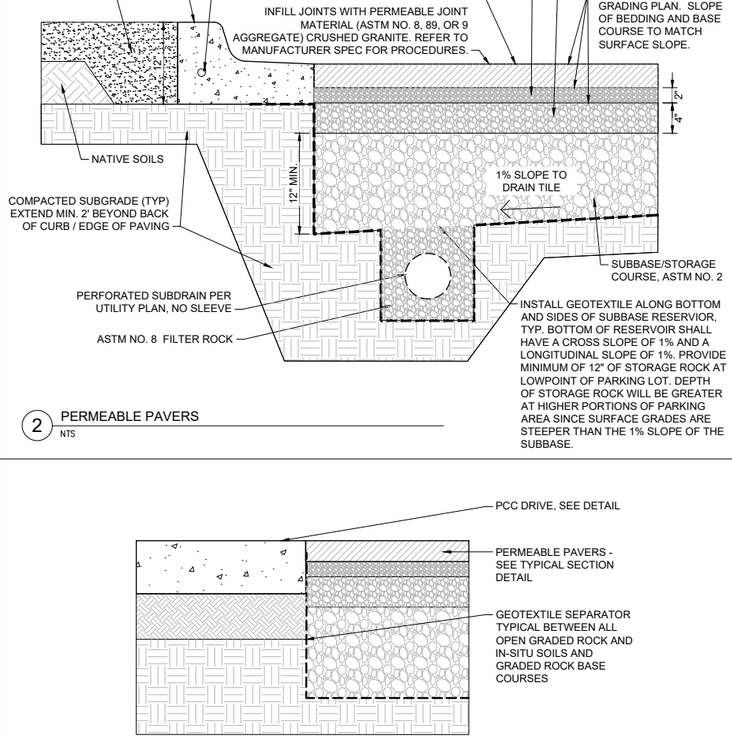
LOW TO MODERATE FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE		
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	300 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20%
PUNCTURE	ASTM D-4833	120 LBS
MULLEN BURST	ASTM D-3786	800 PSI
TRAPEZOID TEAR	ASTM D-4533	120 LBS
UV RESISTANCE	ASTM D-4355	80%
APPARENT OPENING SIZE	ASTM D-4751	40 US SIEVE
FLOW RATE	ASTM D-4491	40 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	0.55 SEC -1
MODERATE TO HIGH FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE		
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	265 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20%
PUNCTURE	ASTM D-4833	135 LBS
MULLEN BURST	ASTM D-3786	8420 PSI
TRAPEZOID TEAR	ASTM D-4533	45 LBS
UV RESISTANCE	ASTM D-4355	90%
APPARENT OPENING SIZE	ASTM D-4751	20 US SIEVE
FLOW RATE	ASTM D-4491	200 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	1.5 SEC -1

5 INLET PROTECTION DEVICE
NTS



4" SLOPED CURB

10 4" PCC ROLLED CURB
NTS



2 PERMEABLE PAVERS
NTS

3 PERMEABLE PAVERS AT PCC DRIVE
NTS

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1ST & 3RD STREET PARKING IMPROVEMENTS

CITY OF BONDURANT
200 2ND ST NE, BONDURANT, IA 50035

DRAWN BY	BDD
APPROVED BY	KAL
ISSUED FOR	CONSTRUCTION
ISSUE DATE	06/17/2024
PROJECT NUMBER	2240004020
FIELD BOOK	-

CONSTRUCTION DETAILS

C501

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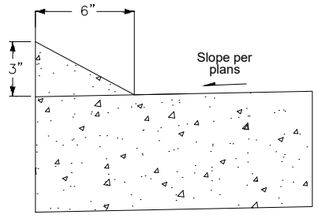
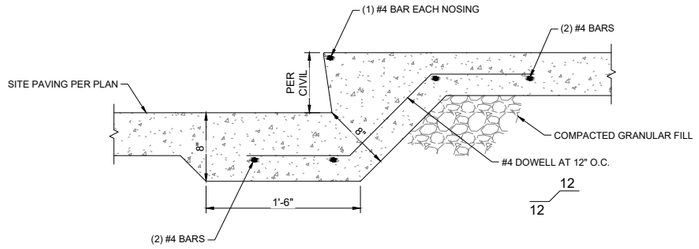
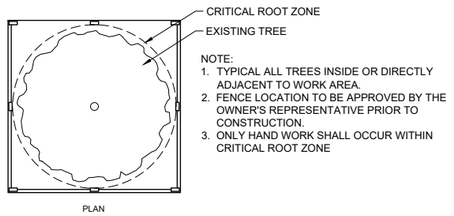


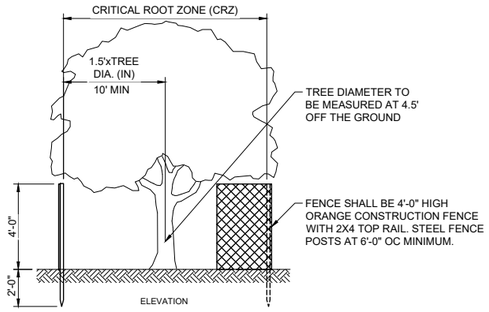
2 3" PCC DROP CURB
NTS



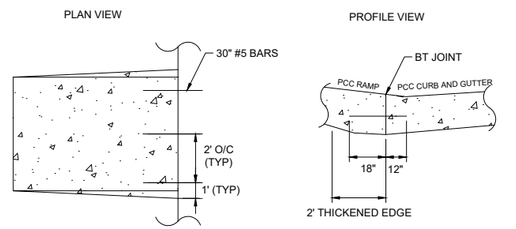
3 PCC STEP
NOT TO SCALE



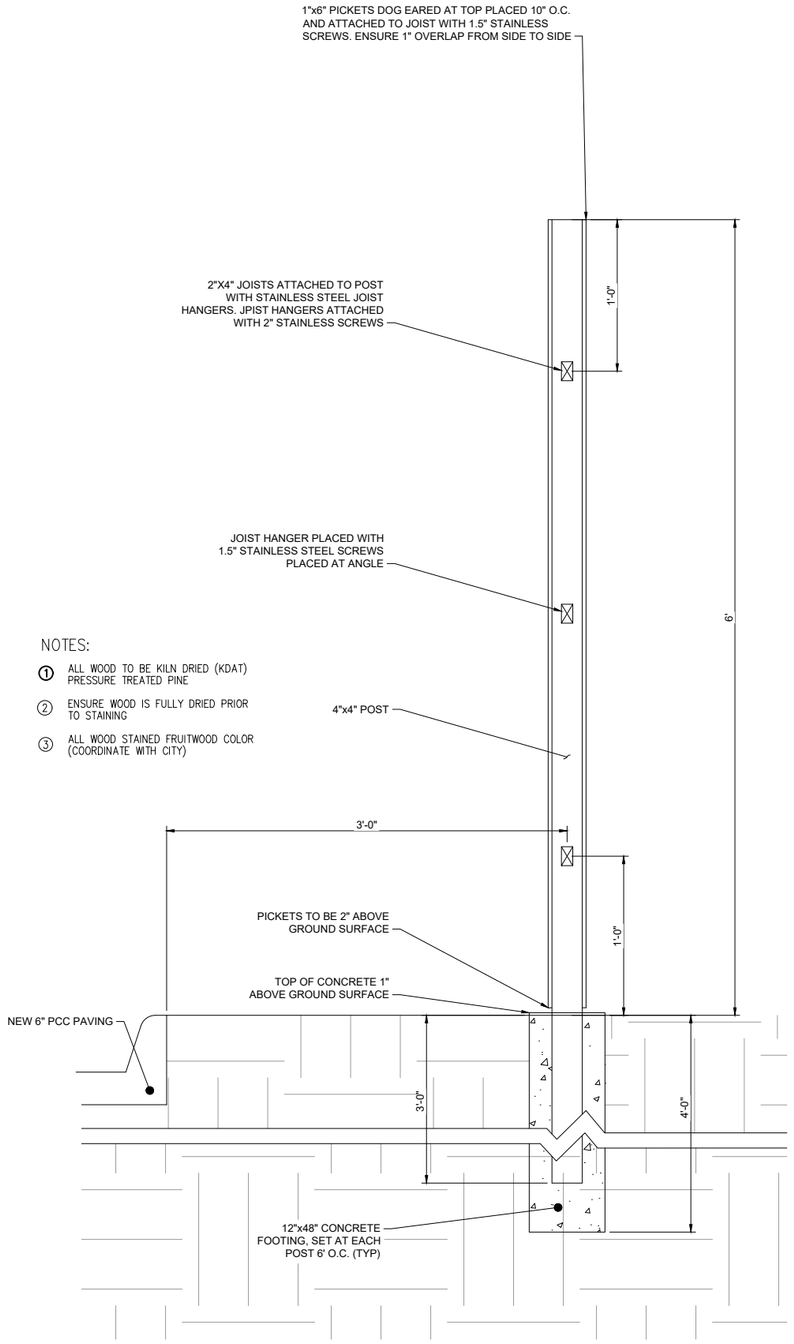
NOTE:
1. TYPICAL ALL TREES INSIDE OR DIRECTLY ADJACENT TO WORK AREA.
2. FENCE LOCATION TO BE APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.
3. ONLY HAND WORK SHALL OCCUR WITHIN CRITICAL ROOT ZONE



4 CRITICAL ROOT ZONE TREE PROTECTION
NTS



5 SIDEWALK RAMP TIE IN
NTS



NOTES:
1. ALL WOOD TO BE KILN DRIED (KDAT) PRESSURE TREATED PINE
2. ENSURE WOOD IS FULLY DRIED PRIOR TO STAINING
3. ALL WOOD STAINED FRUITWOOD COLOR (COORDINATE WITH CITY)

1 WOODEN FENCE DETAIL
NOT TO SCALE

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CITY OF BONDURANT
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FIELD BOOK	-

CONSTRUCTION DETAILS

C502

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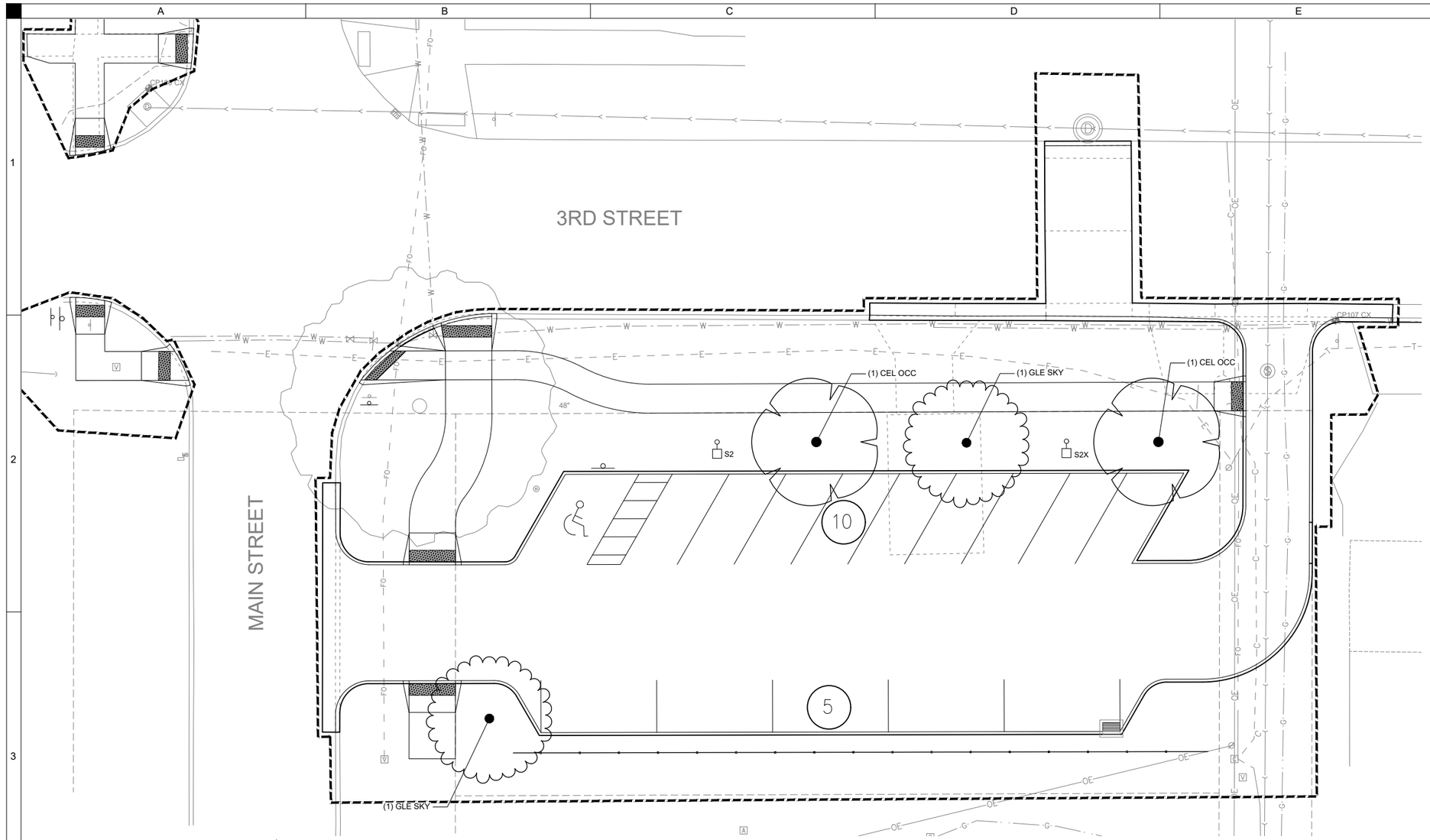
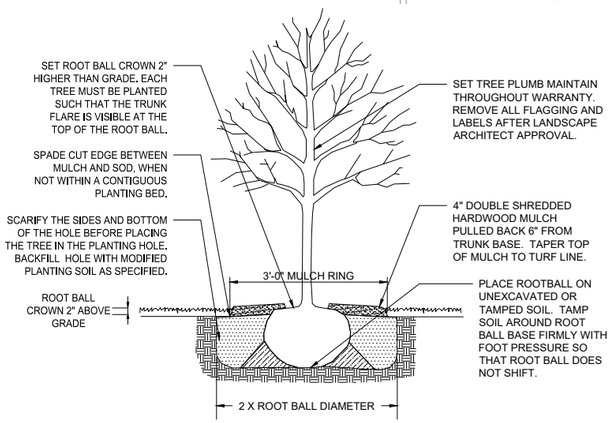
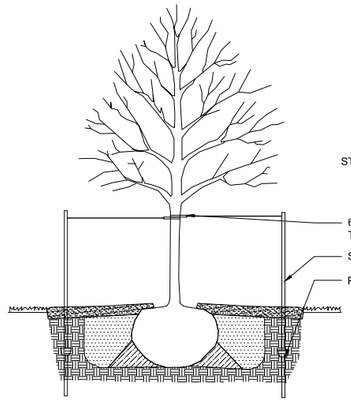




A4 DECIDUOUS TREE PLANTING
NTS



NOTES:
1. STEEL POSTS TO BE NOTCHED OR DRILLED TO RETAIN GUY WIRES. PLACE OUTSIDE OF PLANTING HOLE. DRIVE PLUMB REGARDLESS OF GROUND SLOPE.
3. TREE STAKING IS REQUIRED FOR ALL DECIDUOUS TREES. USE 3 STAKES.
4. TREE STAKING IS REQUIRED FOR ALL EVERGREEN TREES. USE 2 STAKES.
4. REMOVE WITHIN 1 YEAR.

C4 TREE STAKING DETAIL
NTS

PLANT SCHEDULE					
CODE	QTY	BOTANICAL NAME	COMMON NAME	ROOT	SIZE
TREES					
CEL OCC	2	Celtis occidentalis	Common Hackberry	B & B	2"Cal
GLE SKY	2	Gleditsia triacanthos inermis 'Skyline'	Skyline Honey Locust	B & B	2"Cal

LANDSCAPE NOTES

1. ALL TREES SHALL BE PER THE RECOMMENDATIONS AND REQUIREMENTS OF THE CURRENT ANSI 'AMERICAN STANDARDS FOR NURSERY STOCK'.
2. PROTECT ALL EXISTING AND NEW STRUCTURES AND UTILITY SERVICES DURING INSTALLATION OF ALL PLANT MATERIAL. NOTIFY ENGINEER IMMEDIATELY UPON CONFLICT OF PLANTS, STRUCTURES, AND UTILITIES.
3. ALL TREE RINGS SHALL RECEIVE 4" DOUBLE SHREDDED HARDWOOD MULCH, UNLESS OTHERWISE NOTED.
4. REPAIR ALL AREAS OF DISTURBANCE WITH TURF SEED WITH HYDROMULCH UNLESS NOTED OTHERWISE.
5. ISLANDS SHALL BE CORED OUT TO REMOVE ALL GRANULAR AND COMPACTED SUBBASE TO A DEPTH OF 36" BELOW FINISH PAVING SURFACE, AND FILLED WITH APPROVED TOPSOIL.

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LANDSCAPE PLAN

L101

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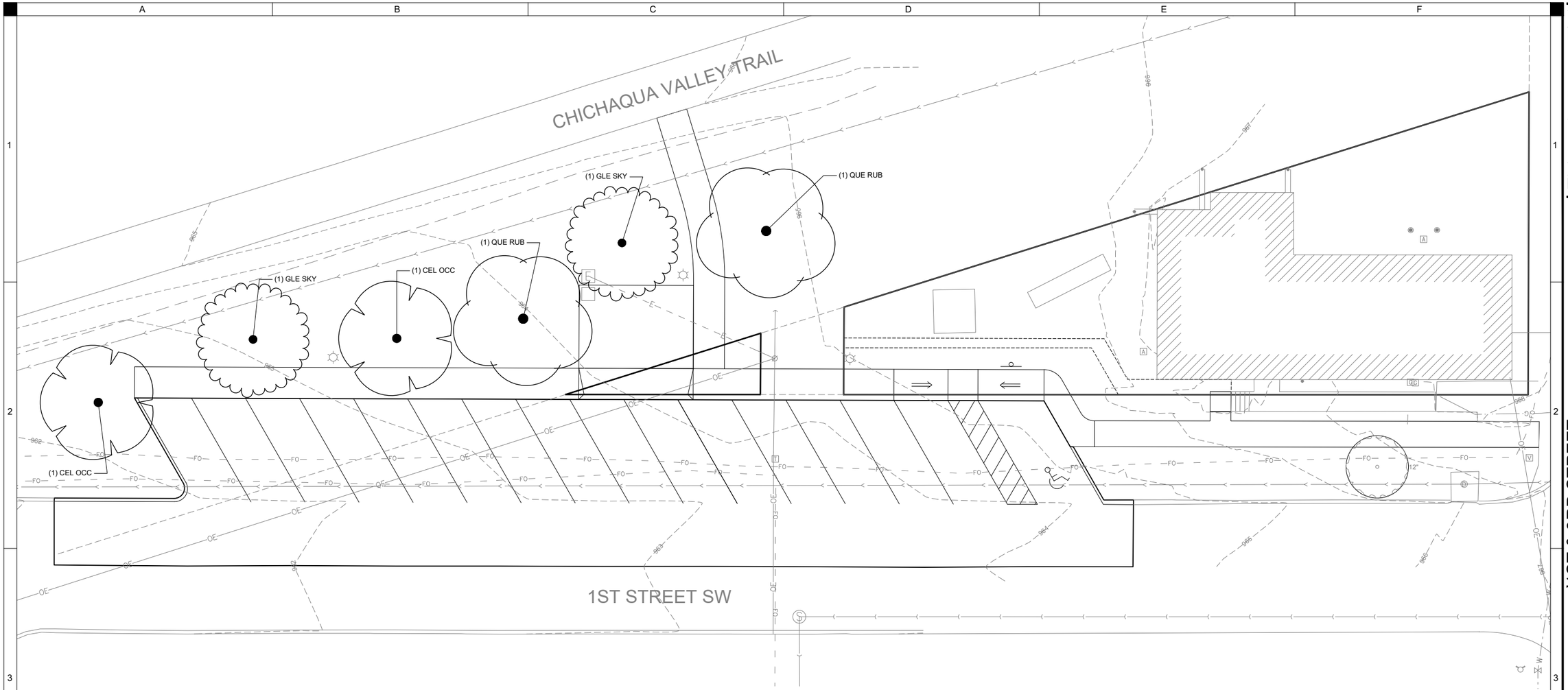
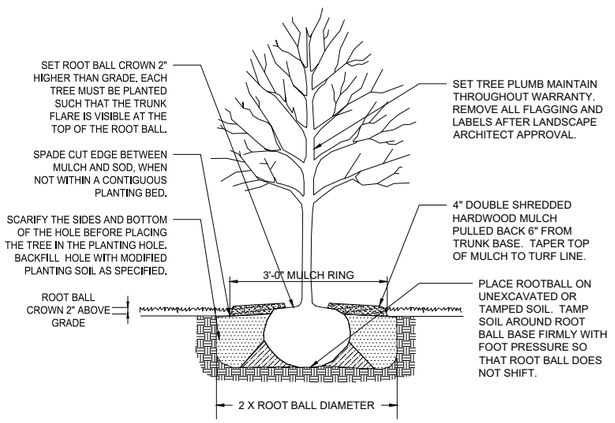
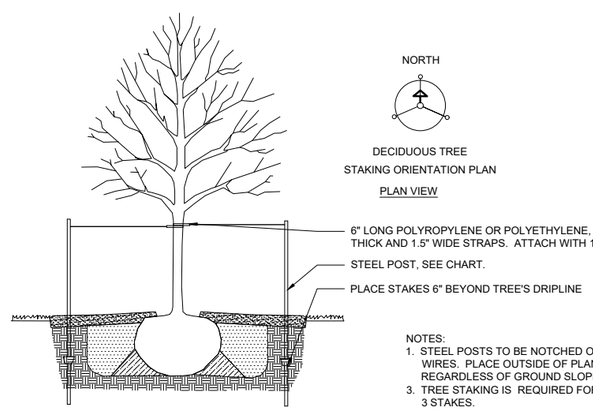




A4 DECIDUOUS TREE PLANTING
NTS



DECIDUOUS TREE
STAKING ORIENTATION PLAN
PLAN VIEW

NOTES:
1. STEEL POSTS TO BE NOTCHED OR DRILLED TO RETAIN GUY WIRES. PLACE OUTSIDE OF PLANTING HOLE. DRIVE PLUMB REGARDLESS OF GROUND SLOPE.
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4. REMOVE WITHIN 1 YEAR.

C4 TREE STAKING DETAIL
NTS

PLANT SCHEDULE

CODE	QTY	BOTANICAL NAME	COMMON NAME	ROOT	SIZE
TREES					
CEL OCC	2	Celtis occidentalis	Common Hackberry	B & B	2"Cal
GLE SKY	2	Gleditsia triacanthos inermis 'Skyline'	Skyline Honey Locust	B & B	2"Cal
QUE RUB	2	Quercus rubra	Northern Red Oak	B & B	2"Cal

LANDSCAPE NOTES

1. ALL TREES SHALL BE PER THE RECOMMENDATIONS AND REQUIREMENTS OF THE CURRENT ANSI 'AMERICAN STANDARDS FOR NURSERY STOCK'.
2. PROTECT ALL EXISTING AND NEW STRUCTURES AND UTILITY SERVICES DURING INSTALLATION OF ALL PLANT MATERIAL. NOTIFY ENGINEER IMMEDIATELY UPON CONFLICT OF PLANTS, STRUCTURES, AND UTILITIES.
3. ALL TREE RINGS SHALL RECEIVE 4" DOUBLE SHREDDED HARDWOOD MULCH, UNLESS OTHERWISE NOTED.
4. REPAIR ALL AREAS OF DISTURBANCE WITH TURF SEED WITH HYDROMULCH UNLESS NOTED OTHERWISE.
5. ISLANDS SHALL BE CORED OUT TO REMOVE ALL GRANULAR AND COMPACTED SUBBASE TO A DEPTH OF 36" BELOW FINISH PAVING SURFACE, AND FILLED WITH APPROVED TOPSOIL.

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LANDSCAPE PLAN

L102

ELECTRICAL ABBREVIATIONS

A

A	AMPERE
AC	ABOVE COUNTER/ALTERNATING CURRENT
ACB	AIR CIRCUIT BREAKER
AF	AMPERE RATING OF FUSE
AFF	ABOVE FINISHED FLOOR
AL	ALUMINUM
ALT	ALTERNATE
AM	AMMETER
AS	AMMETER SWITCH
AT	AMPERE TRIP RATING
APPROX	APPROXIMATELY
ATC	AUTOMATIC TEMPERATURE CONTROL
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AUX	AUXILIARY
AWG	AMERICAN WIRE GAUGE

B

BAS	BUILDING AUTOMATION SYSTEM
BD	BUS DUCT
BRKR	BREAKER
BLDG	BUILDING
B/M	BILL OF MATERIALS
BUZ	BUZZER

C

C	CONTRACTOR
CAB	CABINET
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CKT	CIRCUIT
CL	CENTERLINE
CLG	CEILING
COMM	COMMUNICATIONS CONNECT, CONNECTED,
CONN	CONNECTOR
CONC	CONCRETE
COND	CONDUCTOR
CONTR	CONTRACTOR
CP	CONTROL PANEL
CPT	CONTROL POWER TRANSFORMER
CR	CONTROL RELAY
CT	CURRENT TRANSFORMER
CU	COPPER

D

DC	DIRECT CURRENT
DIA	DIAMETER
DIAG	DIAGRAM
DIM	DIMMER CONTROL
DISC	DISCONNECT
DIV	DIVISION
DN	DOWN
DP	DOUBLE POLE
DT	DOUBLE THROW
DWG	DRAWING

E

EC	ELECTRICAL CONTRACTOR
EL	ELEVATION
ELEC	ELECTRICAL
EMER	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
ENG	ENGINEER
EPO	EMERGENCY POWER OFF
ETM	ELAPSED (RUN) TIME METER
EWC	ELECTRIC WATER COOLER
EXH	EXHAUST
EXIST	EXISTING

F

F	FUSE
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FC	FOOTCANDLE
FDR	FEEDER
FF	FURNITURE FEED
FHP	FRACTIONAL HORSEPOWER
FL	FLOODLIGHT
FLEX	FLEXIBLE, FLEXIBLE CONDUIT
FLR	FLOOR
FLUOR	FLUORESCENT
FREQ	FREQUENCY

G

GC	GENERAL CONTRACTOR
GEC	GROUNDING ELECTRODE CONDUCTOR
GEN	GENERATOR
GFI	GROUND FAULT CIRCUIT INTERRUPTER
GFP	GROUND FAULT PROTECTOR
GND	GROUND, GROUNDING CONDUCTOR
GR	GROUND ROD
GW	GROUND WELL

H

HGT	HEIGHT
HH	HANDHOLE
HID	HIGH INTENSITY DISCHARGE
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HTR	HEATER
HZ	HERTZ, FREQUENCY IN CYCLES PER SECOND

I

IMC	INTERMEDIATE METALLIC CONDUIT
INCAND	INCANDESCENT
INTCONN	INTERCONNECTION

J

JB	JUNCTION BOX
JCT	JUNCTION

K

K	KEY OPERATED
KCMIL	THOUSAND CIRCULAR MILS
KV	KILOVOLT
KVA	KILOVOLT-AMPERE
KVAR	KILOVOLT-AMPERE REACTIVE
KW	KILOWATT
KWH	KILOWATT-HOUR

L

LG	LENGTH
LIM	LIMIT
LPS	LOW PRESSURE SODIUM
LTG	LIGHT, LIGHTING
LV	LOW VOLTAGE
LVSS	LOW VOLTAGE SURGE SUPPRESSION

M

MAN	MANUAL
MATL	MATERIAL
MC	MECHANICAL CONTRACTOR
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MFR	MANUFACTURER
MH	MANHOLE
MIC	MICROPHONE
MLO	MAIN LUGS ONLY
MTG	MOUNT, MOUNTED, MOUNTING
MTR	MOTOR
MTS	MANUAL TRANSFER SWITCH
MVA	MEGAVOLT-AMPERE
MVAR	MEGAVOLT-AMPERE REACTIVE
MW	MEGAWATT
MWH	MEGAWATT-HOUR

N

NC	NORMALLY CLOSED
NF	NON-FUSED
NIC	NOT IN CONTRACT
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NO	NORMALLY OPEN
NTS	NOT TO SCALE

O

OCB	OIL CIRCUIT BREAKER
OPR	OPERATOR, OPERATED
OL	THERMAL OVERLOAD PROTECTION

P

P	PILOT
PB	LIGHT PUSHBUTTON
PC	PHOTOCELL
PF	POWER FACTOR
PFM	POWER FACTOR METER
PNL	PANEL
PRI	PRIMARY
PS	PRESSURE SWITCH
PT	POTENTIAL TRANSFORMER
PVC	POLVINYLCHLORIDE, PVC CONDUIT
PWR	POWER

R

R	RELAY
RC	REMOTE CONTROL
RECPT	RECEPTACLE
REF	REFER, REFERENCE
REQD	REQUIRED
RGS	RIGID GALVANIZED STEEL CONDUIT

S

SA	SURGE ARRESTER
SCHD	SCHEDULE
SCHM	SCHEMATIC
SP	SINGLE POLE
SPKR	LOUDSPEAKER
ST	SINGLE THROW
STA	STATION
STBY	STANDBY
SUBSTA	SUBSTATION
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
SYNC	SYNCHRONIZE, (ING), (ACTION)
SYS	SYSTEM

T

T/	TOP OF
TB	TERMINAL BOARD
TC	TIMECLOCK
TCC	TEMPERATURE CONTROL CONTRACTOR
TDCD	TIME DELAY CLOSE ON DENERGIZATION
TDCE	TIME DELAY CLOSE ON ENERGIZATION
TDOD	TIME DELAY OPEN ON DENERGIZATION
TDOE	TIME DELAY OPEN ON ENERGIZATION
TEL	TELEPHONE
TEMP	TEMPERATURE
TERM	TERMINAL
TSTAT	THERMOSTAT
TV	TELEVISION
TYP	TYPICAL

U

UG	UNDERGROUND
UNO	UNLESS NOTED OTHERWISE
UNG	UNGROUNDED
UPS	UNINTERRUPTIBLE POWER SUPPLY

V

V	VOLTS
VA	VOLT-AMPERE
VAR	VOLT-AMPERE REACTIVE
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VM	VOLTMETER
VS	VOLTMETER SWITCH

W

W	WATTS
W/	WITH
W/O	WITHOUT
WH	WATT-HOUR
WP	WEATHERPROOF

X

XDCR	TRANSDUCER
XFMR	TRANSFORMER
XFR	TRANSFER
XMIT	TRANSMIT, TRANSMITTER
XP	EXPLOSION PROOF

ELECTRICAL SYMBOLS LEGEND

GENERAL

SYMBOL	DESCRIPTION
	CONDUIT CONCEALED IN WALL OR OVERHEAD
	CONDUIT CONCEALED BELOW FLOOR
	CONDUIT TRANSITION UP
	CONDUIT TRANSITION DOWN
	CONDUIT STUBBED OUT
	BRANCH CIRCUIT HOME RUN
	CABLE TRAY (TYPE DENOTED)
	CONDUIT SLEEVE (SIZE DENOTED)
E#	KEYNOTE (SEE SCHEDULE)
(0000)	SPECIALTY EQUIPMENT TAG

LIGHTING/CONTROLS

SYMBOL	DESCRIPTION
	FLOOD LIGHT
	POLE MOUNTED LIGHT
PC	EXTERIOR PHOTOCELL
#	LIGHTING CONTROL DENOTATION

POWER

SYMBOL	DESCRIPTION
	DUPLEX RECEPTACLE
HH	HANDHOLE

##" XX ##" XX ##" XX

EXAMPLE RECEPTACLE TAG

##" - MOUNTING HEIGHT AS INDICATED.
IF OMITTED, 18" OR ABOVE COUNTER

XX - INDICATES RECEPTACLE CONFIGURATION:

- AC - ABOVE COUNTER (COORDINATE HEIGHT)
- GFI - GROUND FAULT CIRCUIT INTERRUPTER
- HZ - HORIZONTALLY MOUNTED
- IG - ISOLATED GROUND
- OC - OCCUPANCY CONTROLLED
- USB - INTEGRAL USB CHARGER
- WP - WEATHERPROOF
- XP EXPLOSION PROOF

BRANCH PANEL WITH CLEARANCE
(SURFACE OR RECESS MOUNTED)

ELECTRICAL

1. ALL WORK SHALL BE IN CONFORMANCE WITH THE NATIONAL ELECTRICAL CODE - LATEST EDITION ADOPTED BY THE STATE, THE STATE AMENDMENTS, LOCAL/MUNICIPAL CODES AND ORDINANCES, AND THE AUTHORITY HAVING JURISDICTION. THE COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE ADAAG (AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES).
2. IT IS THE INTENT OF THESE DOCUMENTS TO COMPLY WITH THE APPLICABLE CODES. WHERE DISCREPANCIES OCCUR, NOTIFY THE ENGINEER/ARCHITECT IN WRITING FOR INTERPRETATION. CORRECT ANY INSTALLATION THAT FAILS TO COMPLY WITH THE CODES AND STANDARDS AT NO ADDITIONAL COST TO THE OWNER.
3. CONTRACTOR SHALL PROVIDE ALL WORK NECESSARY INCLUDING ALL LABOR, MATERIALS, PERMITS, TAXES, FEES, INSPECTIONS, HARDWARE, AND COST FOR INSTALLATION FOR A COMPLETE AND OPERATIONAL SYSTEM.
4. ALL MATERIALS FURNISHED BY THE CONTRACTOR SHALL BE NEW, COMPLETE WITH MANUFACTURER'S GUARANTEE OR WARRANTY AND SHALL BE LISTED BY A NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL).
5. COORDINATE ELECTRICAL INSTALLATION WITH ALL TRADES PRIOR TO INSTALLATION. IF ELECTRICAL WORK INSTALLED INTERFERES WITH OTHER TRADES AFTER INSTALLATION, THE CONTRACTOR SHALL MAKE ALL NECESSARY CHANGES TO CORRECT THE CONDITION AT NO ADDITIONAL COST TO THE OWNER.
6. DRAWINGS ARE DIAGRAMMATIC. ALL DIMENSIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL VERIFY ALL FURNITURE, MODULAR FURNITURE, AND EQUIPMENT LOCATIONS WITH ARCHITECTURAL PLANS, ELEVATIONS AND REVIEWED SHOP DRAWINGS. PRIOR TO MAKING THE ACTUAL ELECTRICAL INSTALLATION THIS CONTRACTOR SHALL ADJUST CONNECTION LOCATIONS TO ACCOMMODATE FURNITURE AND/OR EQUIPMENT.
7. ALL ELECTRICAL PANELS WITH ANY BRANCH CIRCUIT/LOAD REVISIONS (DEMOLITION OR NEW WORK) SHALL HAVE A NEW TYPED UPDATED CIRCUIT DIRECTORY CARD INSTALLED INSIDE THE DOOR OF THE ELECTRICAL PANEL. THE CONTRACTOR SHALL VERIFY THAT ALL UNUSED CIRCUIT BREAKERS ARE TURNED 'OFF' AND PROPERLY INDICATED AS 'SPARE' ON THE NEW CIRCUIT DIRECTORY CARD. THE CONTRACTOR SHALL INSTALL FILLER PLATES WHERE BREAKERS ARE REMOVED AS PART OF THIS PROJECT OR HAVE BEEN REMOVED PREVIOUSLY.
8. NO ENERGIZED CONDUCTORS SHALL BE EXPOSED AT ANYTIME EXCEPT WHEN THE IMMEDIATE AREA IS UNDER THE SUPERVISION OF A QUALIFIED ELECTRICIAN.
9. WHERE CONDUIT IS SURFACE MOUNTED TO A WALL AND RUN VERTICALLY DOWN TO A SWITCH/OUTLET BOX, UTILIZE 1-HOLE OR 2-HOLE CONDUIT STRAPS.
10. REFER TO THE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF BUILDING EXPANSION JOINTS. ALL CONDUITS CROSSING EXPANSION JOINTS SHALL BE INSTALLED WITH EXPANSION FITTINGS, UNLESS THE CONDUIT IS BELOW SLAB IN THE COMPACTED GRANULAR FILL. EXPANSION FITTINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, AND MANUFACTURE'S WRITTEN RECOMMENDATIONS.
11. PENETRATIONS THROUGH FIRE RATED WALLS BY DIVISION 26 CONTRACTOR SHALL BE SEALED WITH APPROPRIATE FIRE PROOFING MATERIAL TO RESTORE FIRE RATING. REFER TO ARCHITECTURAL DRAWINGS FOR FIRE RATED WALLS.
12. THE CONTRACTOR SHALL KEEP THE WORK AREA CLEAN OF ALL DEBRIS ON A DAILY BASIS. ALL NEW MATERIALS AWAITING INSTALLATION SHALL BE KEPT IN AREAS DESIGNATED BY THE OWNER.
13. THESE DRAWINGS SHALL NOT BE SCALED TO OBTAIN DIMENSIONS. REFER TO DIMENSIONED ARCHITECTURAL FLOOR PLANS. IF THE DIMENSIONS CANNOT BE DETERMINED BY THE INFORMATION GIVEN, CONTRACTOR SHALL CONTACT THE ENGINEER FOR ADDITIONAL INFORMATION.
14. PERIODIC SITE OBSERVATION BY THE ENGINEER IS SOLELY FOR THE PURPOSE OF DETERMINING IF THE WORK OF THE CONTRACTOR IS PROCEEDING IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THIS LIMITED SITE OBSERVATION SHOULD NOT BE CONSTRUED AS EXHAUSTIVE OR CONTINUOUS TO CHECK THE QUALITY OR QUANTITY OF THE WORK, BUT RATHER PERIODIC IN AN EFFORT TO GUARD THE OWNER AGAINST DEFECTS OR DEFICIENCIES IN THE WORK OF THE CONTRACTOR.
15. THE INFORMATION CONTAINED ON THE ELECTRICAL DRAWINGS IS IN ITSELF INCOMPLETE AND VOID UNLESS USED IN CONJUNCTION WITH ALL OTHER DISCIPLINE DRAWINGS, THE SPECIFICATIONS, TRADE PRACTICES, OR APPLICABLE STANDARDS, CODES, ETC., AND SHALL BE CONSIDERED THE CONTRACT DOCUMENTS AND WITH ALL THEREIN BY REFERENCE, WHICH THE CONTRACTOR CERTIFIES KNOWLEDGE OF BY SIGNING THE CONTRACT.
16. CONTRACTOR IS TO ASSUME FULL RESPONSIBILITY, UNRELIEVED BY REVIEW OF SHOP DRAWINGS OR PERIODIC OBSERVATION OF CONSTRUCTION, FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS, FOR DIMENSIONS TO BE CONFIRMED AND CORRELATED ON THE JOB SITE AND BETWEEN INDIVIDUAL DRAWINGS OR SETS OF DRAWINGS FOR FABRICATION PROCESSES AND CONSTRUCTION TECHNIQUES (INCLUDING EXCAVATION, SHORING, SCAFFOLDING, BRACING, ERECTION, FORM WORK, ETC.), FOR COORDINATION OF THE VARIOUS TRADES, AND FOR SAFE CONDITIONS ON THE JOB SITE. VARIATIONS IN FIELD CONDITIONS RELATIVE TO THE CONTRACT DOCUMENTS SHALL BE REPORTED TO THE ENGINEER AS SOON AS THEY ARE FOUND. WORK SHALL NOT PROGRESS UNTIL WRITTEN PERMISSION FROM THE ENGINEER IS OBTAINED.

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1ST & 3RD STREET
PARKING IMPROVEMENTS

CITY OF BONDURANT
200 2ND ST NE, BONDURANT, IA 50035

DRAWN BY	RML
APPROVED BY	ES
ISSUED FOR	100 % REVIEW
ISSUE DATE	06/07/2024
PROJECT NUMBER	2240004020
FIELD BOOK	

ELECTRICAL GENERAL INFORMATION

E000

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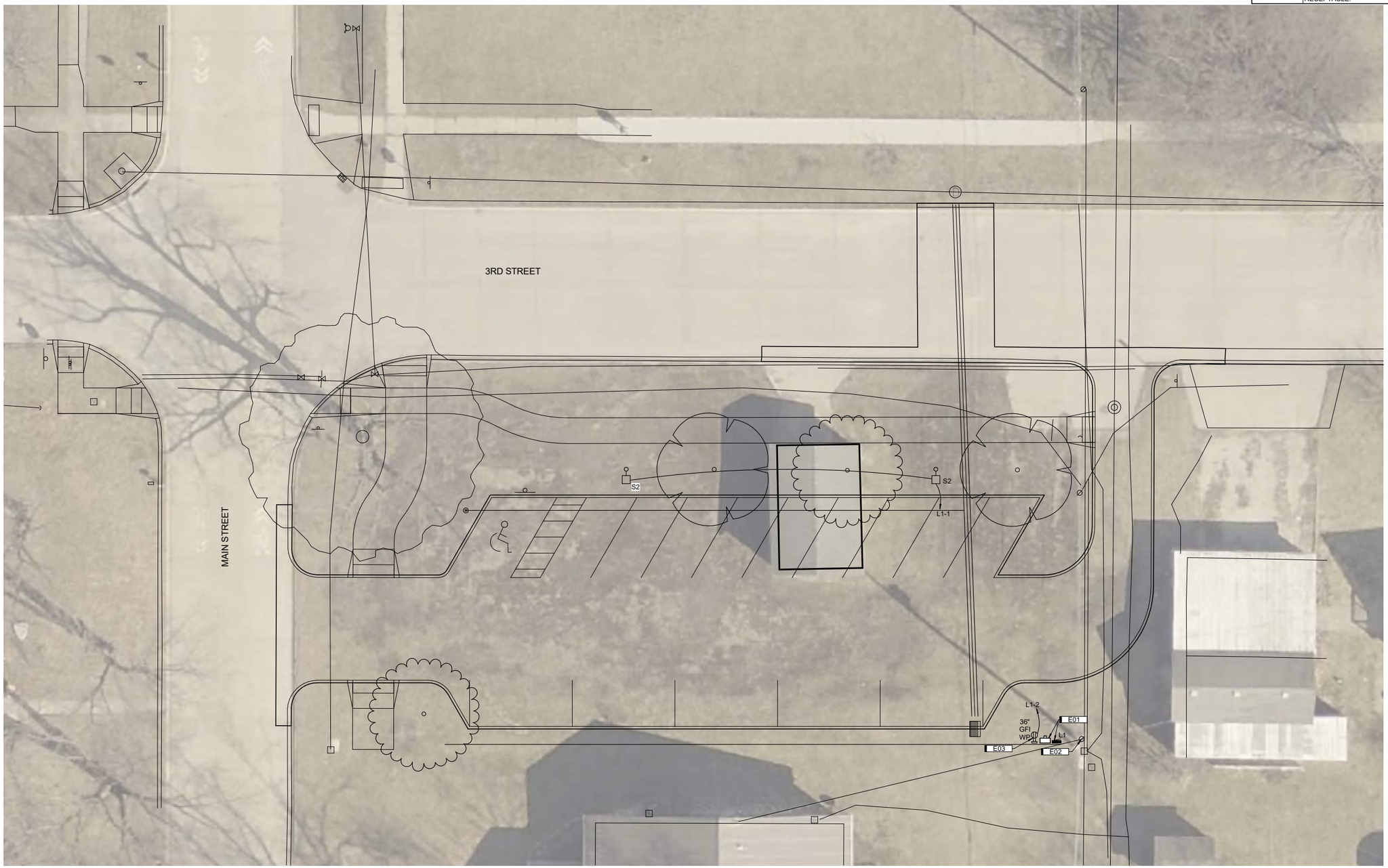
KEYNOTES	
KEY	NOTE
E01	PROVIDE AND INSTALL GALVANIZED UNISTRUT MOUNTING ASSEMBLY FOR INSTALLATION OF UTILITY METER SOCKET, PANELBOARD, AND ALL ASSOCIATED CONDUITS.
E02	PROVIDE AND INSTALL 3#3/0, #6 GROUND IN 2" PVC CONDUIT FROM POLE-MOUNTED UTILITY TRANSFORMER TO UTILITY METER AND NEW PANEL.
E03	PROVIDE AND INSTALL WEATHER PROOF GFI DUPLEX RECEPTACLE.



A4 ELECTRICAL SITE PLAN
1" = 10'-0" 0 15'

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1ST & 3RD STREET
PARKING IMPROVEMENTS

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200 2ND ST NE, BONDURANT, IA 50035

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ELECTRICAL SITE
PLAN - 3RD ST

E101

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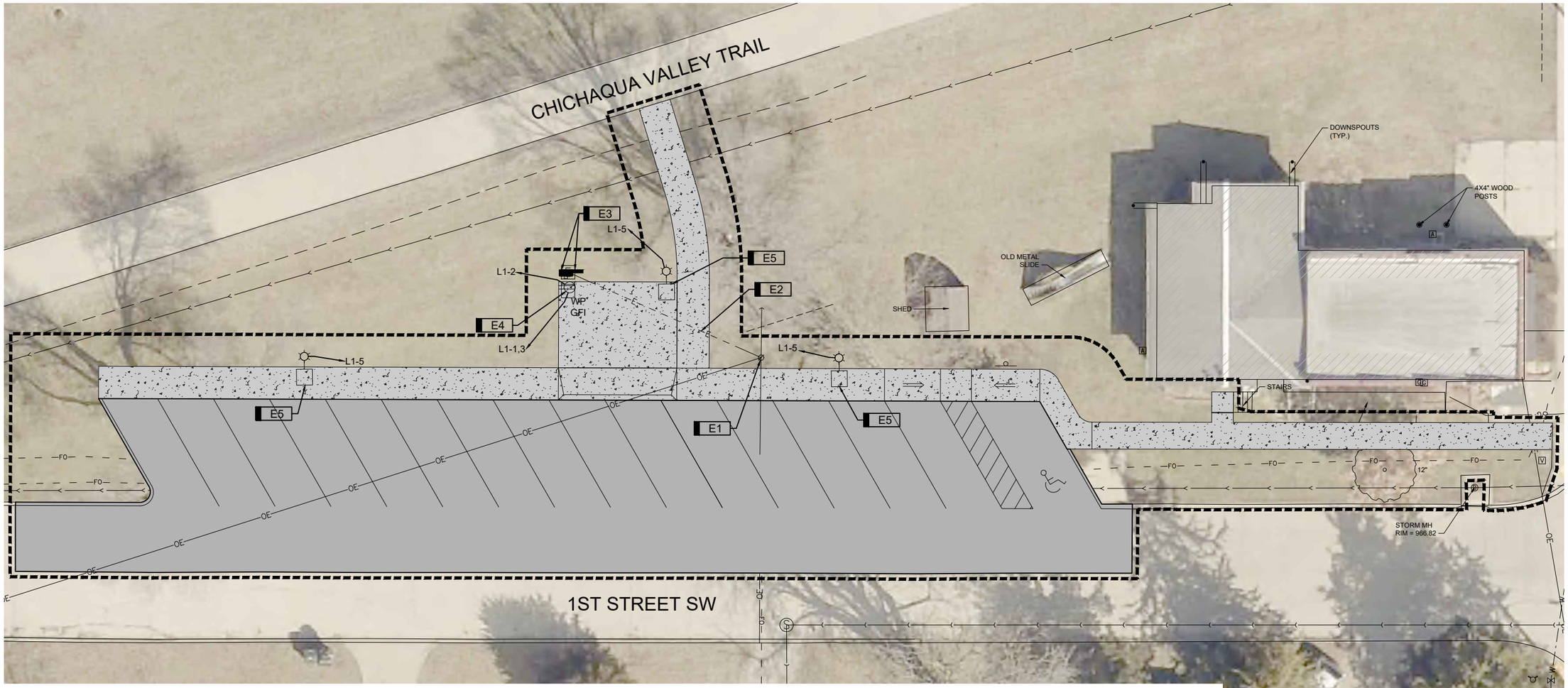
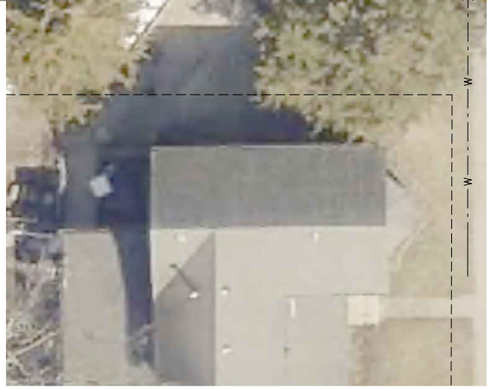
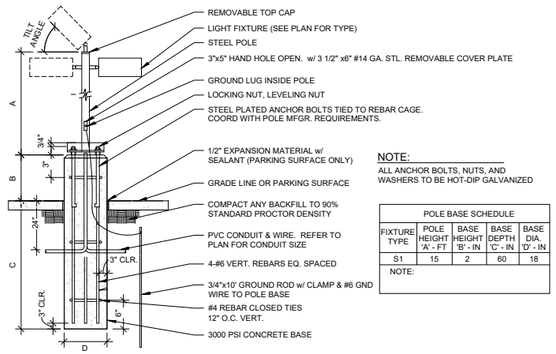
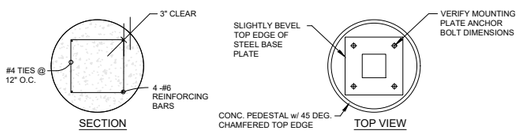






NOTE:
ALL ANCHOR BOLTS, NUTS, AND WASHERS TO BE HOT-DIP GALVANIZED

POLE BASE SCHEDULE				
FIXTURE TYPE	POLE HEIGHT 'A' - FT	BASE HEIGHT 'B' - IN	BASE DEPTH 'C' - IN	BASE DIA. 'D' - IN
S1	15	2	60	18
NOTE:				



F1 DETAIL LIGHT FIXTURE POLE MOUNTING DETAIL
NOT TO SCALE

BRANCH PANEL NAME	VOLTAGE	PHASE	WIRE	BUS SIZE	MAIN OCP	AIC RATING
L1	240/120 Single	1	3	200 AMPS	200	22,000 AMPS SYMMETRICAL
	CODE: L=LIGHTING, R=RECEPTACLES, E=EQUIPMENT, K=KITCHEN					MOUNTING: SURFACE
ROOM:						ENCLOSURE: NEMA 1
FED FROM: POLE TRANSFORMER						FEED:

LOAD	CODE	NOTE	POLE	BKR	CKT #	A KVA	B KVA	CKT #	BKR	POLE	NOTE	CODE	LOAD
POWER PEDESTAL - 50A	R		2	50 A	1	4.8 / 0.2		2	20 A	1		R	POWER PEDESTAL - 20A
					3		4.8 / 0.0	4	20 A	1			SPARE
PARKING LOT LIGHTING	L		1	20 A	5	0.2 / 0.0		6	20 A	1			SPARE
SPARE			1	20 A	7			8	20 A	1			SPARE
SPARE			1	20 A	9			10	20 A	1			SPARE
SPARE			1	20 A	11			12	20 A	1			SPARE
					TOTAL LOAD:	5196.0 VA	4800.0 VA						
					TOTAL AMPS:	43.3 A	40.0 A						

LOAD CLASSIFICATION	CONNECTED LOAD (VA)	DEMAND FACTOR	ESTIMATED DEMAND (VA)	PANEL TOTALS	
RECEPTACLE	180 VA	100%	180 VA	CONNECTED LOAD:	9996.0 VA
LIGHTING	216 VA	100%	216 VA	ESTIMATED DEMAND:	9996.0 VA
POWER PEDESTAL	9600 VA	100%	9,600 VA	CONNECTED CURRENT:	41.7 A
				ESTIMATED DEMAND CURRENT:	41.7 A

NOTES:

KEYNOTES

KEY	NOTE
E1	CONNECT TO SECONDARY WIRING AT NEW UTILITY POLE LOCATION.
E2	PROVIDE AND INSTALL 3#3/0, #6 GROUND IN 2" PVC CONDUIT FROM POLE-MOUNTED UTILITY TRANSFORMER TO UTILITY METER AND NEW PANEL.
E3	PROVIDE AND INSTALL GALVANIZED UNISTRUT MOUNTING ASSEMBLY FOR INSTALLATION OF UTILITY METER SOCKET, PANELBOARD, AND ALL ASSOCIATED CONDUITS.
E4	PROVIDE AND INSTALL OUTDOOR POWER PEDESTAL, WITH (1) 14-50R RECEPTACLE ON (1) GFI 5-20R RECEPTACLE. USE LEGRAND XPP2G30CD-SV OR SIMILAR PRODUCT.
E5	INSTALL OWNER PROVIDED POLE MOUNTED FIXTURE. CONNECT TO PHOTOCELL. FIXTURE IS A 15FT TALL POST-TOP, HOLOPHANE GVD.

0 5 10 20
SCALE IN FEET

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1ST & 3RD STREET PARKING IMPROVEMENTS

CITY OF BONDURANT
200 2ND ST NE, BONDURANT, IA 50035

DRAWN BY	RML
APPROVED BY	ES
ISSUED FOR	CONSTRUCTION
ISSUE DATE	06/17/2024
PROJECT NUMBER	2240004020
FIELD BOOK	I

ELECTRICAL SITE PLAN - 1ST ST

E102

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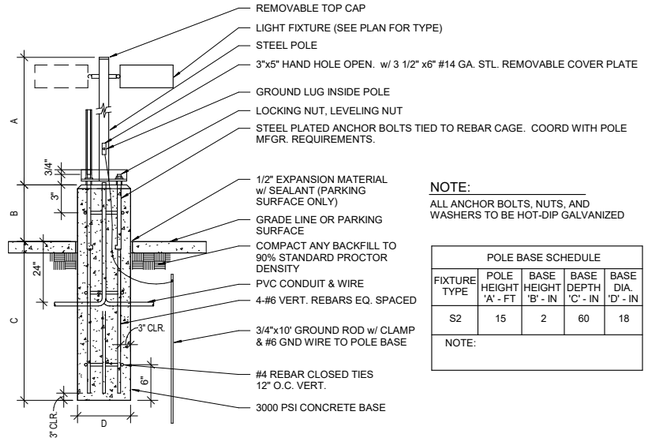
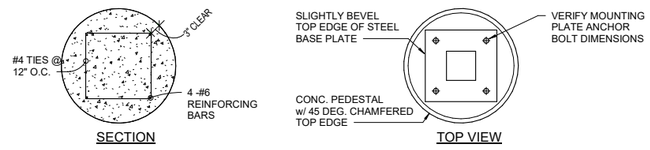


NOTE:

ALL ANCHOR BOLTS, NUTS, AND WASHERS TO BE HOT-DIP GALVANIZED

POLE BASE SCHEDULE				
FIXTURE TYPE	POLE HEIGHT 'A' - FT	BASE HEIGHT 'B' - IN	BASE DEPTH 'C' - IN	BASE DIA. 'D' - IN
S2	15	2	60	18
NOTE:				



A2 LIGHT FIXTURE POLE MOUNTING DETAIL

NOT TO SCALE

LIGHTING FIXTURE SCHEDULE

CATALOG NUMBER SHALL NOT BE CONSIDERED COMPLETE AND MATERIAL SHALL NOT BE ORDERED BY MANUFACTURER AND CATALOG NUMBER ONLY. THE DESCRIPTION AND THE SPECIFICATIONS SHALL BE COORDINATED WITH THE CATALOG NUMBER TO DETERMINE THE EXACT MATERIAL AND ACCESSORIES TO BE ORDERED. THE FIRST MANUFACTURER LISTED IS THE BASIS FOR DESIGN. ALL LAMPS/LIGHT SOURCES FOR THIS PROJECT SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR UNLESS OTHERWISE NOTED. ALL LIGHT FIXTURES SHALL BE PROVIDED WITH INTEGRAL DISCONNECT(S) FACTORY INSTALLED IN ACCORDANCE WITH NEC. REFER TO SPECIFICATIONS FOR SHOP DRAWING SUBMITTAL REQUIREMENTS AND ADDITIONAL INFORMATION.

MOUNTING STYLES (MTG): RE-A = RECESSED (ACT), RE-G = RECESSED (GYP), RE-W = RECESSED (WALL), CL = CEILING SURFACE, PW = PERIMETER WALL, SP = SUSPENDED (AIR-CRAFT CABLE), ST = STEM, WL = WALL, WL-H = WALL HORIZONTAL, WL-V = WALL VERTICAL, UNV = UNIVERSAL, POLE = POLE, UC = UNDER CABINET, TR = TRACK, GND = GROUND

LED DRIVER TYPES: STND = STANDARD DRIVER, DIM10 = 0-10V 10% DIMMING, DIM1 = 0-10V 1% DIMMING, DIMD = 0-10V DIM TO DARK, STEP = STEP DIMMING, NOND = NON-DIMMING, DALI = DIGITAL ADDRESSABLE LIGHTING INTERFACE, DMX = DIGITAL MULTIPLEX, LUTR = LUTRON HI-LUME POE = POWER OVER ETHERNET, SDIM = STEP DIMMING

GENERAL NOTES:

A. WHERE "OR APPROVED EQUIVALENT" IS LISTED IN THE MANUFACTURER COLUMN, FIXTURES MUST BE SUBMITTED AS A SUBSTITUTION FOR APPROVAL PRIOR TO BID SUBMISSION.
B. LISTED LUMENS ARE DELIVERED LUMENS. PROVIDE FIXTURE WITHIN +/- 5% OF LISTED LUMENS.
C. LIGHTING PRODUCTS SHALL BE PROVIDED THROUGH THE AUTHORIZED LIGHTING MANUFACTURER'S REPRESENTATIVE RESIDING WITHIN PROJECT LOCATION.
D. SUBMITTALS SHALL BE PRODUCED AND SUBMITTED BY LOCAL AUTHORIZED LIGHTING MANUFACTURER'S REPRESENTATIVE. LETTERHEAD SHALL CONTAIN REPRESENTATIVES' CONTACT INFORMATION, PROJECT NAME, AND PROJECT LOCATION.

SCHEDULE NOTES:

1. CONNECT TO UNSWITCHED PORTION OF LIGHTING CIRCUIT.
2. PROVIDE WITH INTEGRAL OCCUPANCY AND DAYLIGHTING WIRELESS SENSOR.

TYPE	DESCRIPTION	LENS-LOUVER	MTG	LIGHTING OUTPUT/CCT	DRIVER	VOLT	WATT	BASIS OF DESIGN	APPROVED EQUIVALENT	NOTES
S2	SINGLE HEAD POLE FIXTURE, CAST ALUMINUM HOUSING, DIRECT ARM MOUNT TYPE II MEDIUM DISTRIBUTION, WITH INTEGRAL SURGE SUPRESSION, 20' HIGH SQUARE STRAIGHT STEEL POLE WITH VIBRATION DAMPER	REFRACTIVE ACRYLIC LENS	POLE	LED, 9900 LUMENS, 4000K	DIM10	120	72	LITHONIA RSX1	GARDCO OPF-S	

BRANCH PANEL NAME	VOLTAGE	PHASE	WIRE	BUS SIZE	MAIN OCP	AIC RATING
L1	240/120 Single	1	3	200 AMPS	200 A	22,000 AMPS SYMMETRICAL
	CODE: L=LIGHTING, R=RECEPTACLES, E=EQUIPMENT, K=KITCHEN					MOUNTING: SURFACE
ROOM:						ENCLOSURE: NEMA 1
FED FROM:						FEED:

LOAD	CODE	NOTE	POLE	BKR	CKT #	A KVA	B KVA	CKT #	BKR	POLE	NOTE	CODE	LOAD
LIGHTING			1	20 A	1	0.1 / 0.2		2	20 A	1			RECEPTACLE
					3			4					
					5			6					
					7			8					
					9			10					
					11			12					

		A	B
THIS SECTION TOTAL:	TOTAL LOAD:	324.0 VA	0.0 VA
	TOTAL AMPS:	2.7 A	0.0 A
TOTAL LOAD CONNECTED TO FEED THROUGH LUGS:	TOTAL LOAD:	0.0 VA	0.0 VA
	TOTAL AMPS:	0.0 A	0.0 A
PANEL GRAND TOTALS:	TOTAL LOAD:	324.0 VA	0.0 VA
	TOTAL AMPS:	2.7 A	0.0 A

LOAD CLASSIFICATION	CONNECTED LOAD (VA)	DEMAND FACTOR	ESTIMATED DEMAND (VA)	PANEL TOTALS	
RECEPTACLES	180 VA	100%	180 VA	CONNECTED LOAD:	324.0 VA
LIGHTING	144 VA	100%	144 VA	ESTIMATED DEMAND:	324.0 VA
				CONNECTED CURRENT:	1.4 A
				ESTIMATED DEMAND CURRENT:	1.4 A

NOTES:

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1ST & 3RD STREET PARKING IMPROVEMENTS

CITY OF BONDURANT
200 2ND ST NE, BONDURANT, IA 50035

DRAWN BY	RML
APPROVED BY	ES
ISSUED FOR	100 % REVIEW
ISSUE DATE	06/07/2024
PROJECT NUMBER	2240004020
FIELD BOOK	

ELECTRICAL SCHEDULES

E500

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SPECIFICATIONS
FOR
CITY OF BONDURANT, IOWA
1ST AND 3RD STREET PARKING IMPROVEMENTS

S-H PROJECT NO. 2240004020

SPECIFICATIONS
FOR
CITY OF BONDURANT, IOWA
1ST AND 3RD STREET PARKING IMPROVEMENTS

S-H PROJECT NO. 2240004020

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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.

06/17/2024

Signature Date

Printed or Typed Name: David R. Fliehler, PE

License Number: 23509

My License Renewal Date is: 12-31-2025

Pages, Sheets, or Divisions covered by this Seal: Project Manual

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1ST AND 3RD STREET PARKING IMPROVEMENTS
BONDURANT, IOWA
S-H PROJECT NO. 2240004020

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NOTICE OF HEARING AND LETTING

Sealed bids will be received by the City of Bondurant City Clerk's Office at 200 2nd Street NE, Bondurant, Iowa 50035, until **2:00 p.m.** on **Wednesday, July 10, 2024,** for the following described public improvement:

1ST AND 3RD STREET PARKING IMPROVEMENTS
BONDURANT, IOWA
S-H PROJECT NO. 2240004020

At the above time all bids received by the City will be opened and publicly read at the Bondurant City Hall (200 2nd St NE, Bondurant, IA 50035) after receiving bids at **2:00 p.m**. on **July 10, 2024** with the results being reported to the Bondurant City Council at their meeting on **July 15, 2024** at **6:05 p.m**. At which time the Council may take action on the proposals submitted or at such time as may then be fixed.

The extent of work on this project is the furnishing of all labor, equipment, and materials for the construction of improvements generally described as follows:

> The 1ST AND 3RD STREET PARKING IMPROVEMENTS project involves the development of two PCC parking lots and associated enhancements. The first parking lot, located on the north side of 1st Street SW between Garfield St SW and Grant St S, includes the construction of an angled 16-stall parking area, replacement of deteriorated road panels in the westbound direction of 1st Street SW, sidewalk construction, secondary electrical service, and overhead lighting improvements. The second parking lot, situated at the southeast corner of 3rd St SE and Main St SE, features the construction of a 15-stall parking area, permeable pavement sections, sidewalk improvements, overhead lighting, and storm sewer enhancements.

Materials, estimated quantities, and work to be done for the project on which bids will be received are as shown on the bid proposal for said project.

All work is to be done in strict compliance with the Plans and Specifications prepared by Shive-Hattery, Inc. All bids shall be made on a form furnished by the City and shall be filed on or before the time specified above, in a sealed envelope addressed to the City Clerk of Bondurant, Iowa, clearly stating that the envelope contains a bid on this project. Each proposal shall be accompanied by a bid bond, a cashier's or certified check drawn on an Iowa bank or a bank chartered under the laws of the United States in an amount equal to **ten percent (10%)** of the total amount of the bid. If a bid bond is submitted, it must be on the form provided with the contract documents.

The bid security submitted should be made payable to the City of Bondurant, Iowa, and not contain any conditions either in the body or as an endorsement thereon. This bid security is provided to the City of Bondurant as security that if the bidder is awarded the contract by the City, the bidder will enter into a contract on the form provided by the City at prices bid and shall furnish the required performance and payment bond to the City. If the bidder fails to execute the contract and to furnish an acceptable performance and payment bond or provide a Certificate of Insurance within **ten (10) days** after acceptance of the bid by the City, the bid security may be forfeited or cashed by the City as liquidated damages.

The successful bidder will be required to furnish a performance and payment bond in the amount of **one hundred percent (100%)** of the contract price guaranteeing faithful performance of the contract and guaranteeing payment to all persons supplying labor and/or materials in the execution of the work provided for in the contract. Additionally, the contractor must provide the City with a guarantee of maintenance of said improvement in the form of surety for a period of **four (4) years** from the time of acceptance by the City.

NOTICE OF HEARING AND LETTING

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

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.

If it is determined that adherence to these Iowa statutory requirements may cause denial of federal funds which would otherwise be available for a public improvement, or would otherwise be inconsistent with requirements of any federal law or regulation, the application of Iowa Code Chapters 73 and 73A shall be suspended to the extent necessary to prevent denial of the funds or to eliminate the inconsistency with federal requirements.

Work on said project shall begin after the notice to proceed is issued and the contract is awarded **on July 15, 2024**. The project must reach Substantial Completion by **November 22, 2024**, which includes the construction of both parking lots, all paved areas, storm sewer, electrical improvements, and making the sidewalk and parking sections available for public use. The entire project must be fully completed by **May 30, 2025**. Final Completion includes full restoration and seeding, tree plantings, wooden fence construction, and all remaining items not related to the substantial completion of the project.

Payment for the work will be made by the City in cash from such funds as may be legally available including cash on hand, proceeds from the sale and issuance of General Obligation Bonds and such other funds including the proceeds from the sale and issuance of such other bonds as may lawfully be issued as the City Council may at its sole discretion determine and provide.

Payment will be made to the contractor based on monthly estimates in amounts equal to ninety-five (95%) percent of the contract value of the work completed during the preceding calendar month and will be based upon an estimate prepared by the Contractor on the first day of the month, subject to the approval of the Engineer. Any such payment by the City shall in no way be construed as an act of acceptance for any part of the work partially or totally completed. Final payment by the City will be made in accordance with Iowa statues and the contract documents.

Bidding forms may be obtained from Action Reprographics, 5037 NE 14th Street, Des Moines, IA 50313, Phone: 515.288.2146, Email: planroom.actionrepro.com. Copies of Plans and Specifications and contract documents can be obtained at the same address.

The City reserves the right to reject any and/or all bids and to waive any and/or all technicalities and/or all irregularities.

Publish: By no later than June 28, 2024

_____

Shelby Hagan, City Clerk

INSTRUCTIONS TO BIDDERS

PARK SIDE TRAIL CONNECTION
BONDURANT, IOWA
S-H PROJECT NO. 2240004020

INDEX

1. GENERAL STATEMENT
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1. GENERAL STATEMENT

1.1 It is proposed under these Specifications to provide for furnishing completely the Contract requirements set forth in the Detailed Specifications.

1.2 The purpose of these Specifications is to require the furnishing of highest quality equipment, material, and workmanship, in accordance with these Specifications and best accepted practice.

1.3 The Bidder is expected to base their Bid on materials and equipment complying fully with the Plans and Specifications. In the event the Bid is based on material or equipment which does not conform, the Bidder will be held responsible for furnishing materials and equipment which conform fully at no change in the Bid Price.

1.4 Each Bidder in submitting their Bid, acknowledges their willingness to comply with the terms of these Contract Documents.

2. LAWS AND REGULATIONS

2.1 Attention of all Bidders is called to Federal, State, and Municipal laws, regulations and ordinances in reference to labor, materials, equipment, Bonds (Bidding, Performance, and Guarantee), and all other matters pertaining to the relationship between Owner, Contractor, and Engineer.

3. BIDDER'S KNOWLEDGE

3.1 Bidders shall familiarize themselves with the Specifications and conditions which will affect the construction. It will be the responsibility of the Bidder to make a personal examination of the job site and the physical conditions which may affect their bidding and performance under the Contract.

4. BIDDER'S QUALIFICATIONS

4.1 Bidders will be required to satisfy the Owner as to their integrity, experience, equipment, personal, and financial ability to perform the work.

4.2 If successful Bidder is a non-Iowa Corporation, proof shall be submitted to the Owner, prior to the execution of the Contract, of authorization by the Secretary of State to do business in Iowa.

5. METHOD OF BIDDING

5.1 Bidders shall submit Lump Sum Bid and Unit Price Bids, as required for the work covered by the Plans and Specifications. Prices shall cover complete work and include all costs incidental thereto, unless indicated otherwise.

5.2 In the event of discrepancies between Unit Prices and Unit Price Extensions listed in the Bidder's Proposal, Unit Prices shall govern and Unit Price extensions shall be corrected, as necessary, for agreement with Unit Prices.

5.3 Bids will be computed on the basis of the work shown on the Plans and Specifications. If Unit Price Bids are called for, quantities are approximate and only for comparison of Bids. Engineer retains right to change location, quantities, and combination of units as may be required during progress of construction. Compensation due Contractor will be computed on basis for final quantities of completed work.

5.4 Unit Prices for payment items included in the Specifications, but not listed in the Proposal, will be negotiated, if needed.

5.5 Award of the Contract will be made to the lowest responsible/responsive Bidder. Lowest Bid will be determined by the lowest Base Bid, exclusive of any Alternates, Allowances, or Unit Prices.

6. SUBMISSION OF BIDS

6.1 Bids shall be submitted on the Proposal form included herewith. The Proposal and Bid Security shall be submitted in separate sealed envelopes. The envelopes shall bear the return address of the Bidder and shall be addressed as follows:

TO:	City Clerk City of Bondurant 200 2ND Street NE Bondurant, Iowa 50035
PROPOSAL FOR:	1ST AND 3RD STREET PARKING IMPROVEMENTS S-H Project No. 2240004020
BID SECURITY FOR:	1ST AND 3RD STREET PARKING IMPROVEMENTS S-H Project No. 2240004020

6.2 The Bid shall be signed by a legally authorized representative of the Bidder.

7. BID SECURITY

7.1 Each Bid shall be accompanied by Bid Security as set out in the NOTICE OF HEARING AND LETTING.

7.2 The Bid Security shall be made payable to the CITY CLERK, CITY OF BONDURANT, IOWA and not contain any conditions either in the body or as an endorsement thereon. This bid security is provided to the City of Bondurant as security that if the bidder is awarded the contract by the City, the bidder will enter into a contract on a form provided by the City at prices bid and shall furnish to the City an acceptable performance bond, payment bond, and certificate of insurance meeting the requirements of the specifications including, but not limited to, naming the City and the Engineer as additionally insured. Bid Security shall be forfeited and become the property of the Owner in case the Bidder fails or refuses to enter into Contract and furnish acceptable bonds or provide a certificate of insurance within (10) calendar days after his proposal has been accepted.

7.3 Bid Security of the unsuccessful Bidders will be returned as soon as the Successful Bidder is determined or within thirty (30) days, whichever is sooner; Bid Security of Successful Bidder will be returned upon execution of Contract and furnishing of Bonds.

7.4 Use Bid Bond form included with Specifications.

8. WITHDRAWAL OF BIDS

8.1 Bids may be withdrawn any time prior to the scheduled closing time for receipt of Bids, but no Bid may be withdrawn for a period of thirty (30) calendar days thereafter.

9. EVALUATION OF BIDS

9.1 The Owner may consider such factors as Bid Price, responsibility of Bidder, and similar factors in determining which Bid it deems to be in its best interest.

9.2 The Owner may reject any or all Bids, waive informalities, or technicalities in any Bid, and accept that Bid which it deems to be in its best interest.

10. TAXES

10.1 The City of Bondurant will issue an Iowa Sales Tax Exemption Certificate to all contractors assigned to the project.

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 hereto including Subcontractors and Sureties upon any Bond given or filed in connection therewith.

12. PREFERENCE FOR LABOR AND MATERIALS

12.1 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, which shall be determined without regard to State or local law whereby preference is given on factors other than the amount of the Bid.

13. EXECUTION OF CONTRACT

13.1 The Successful Bidder shall, within ten (10) days of written Notice of Selection, enter into written Contract with the Owner on forms included with the Specifications for the performance of work awarded to the Successful Bidder.

14. QUESTIONS AND ADDENDA

14.1 If any person contemplating submitting a Bid for the proposed work, material, or equipment is in doubt as to the true meaning of any part of the Plans, Specifications, or other Contract Documents, the Bidder may request an interpretation thereof. The person submitting the request will be responsible for its prompt delivery.

14.2 Questions concerning interpretation or intent of the Contract Documents should be directed to:

David Fliehler, Project Engineer
Shive-Hattery, Inc.
4125 Westown Parkway, Suite 100
West Des Moines, IA 50266
Phone: 515.223.8104
Email: DFliehler@shive-hattery.com

14.3 Any oral interpretation given will be valid only if confirmed by written Addendum. Information obtained from an officer, agent, or employee of the Owner shall not affect the risks or obligations assumed by the Contractor or relieve the Contractor from fulfilling any of the conditions of the Contract.

14.4 The Owner reserves the right to revise or amend the Contract Documents, prior to the date set for receipt of Bids. Such revisions and amendments, if any, will be announced by an Addendum or Addenda to the Contract Documents.

14.5 Copies of such addenda as may be issued will be furnished to all holders of Specifications.

14.6 Bidders are required to acknowledge receipt of all Addenda by listing such Addenda in Proposal.

15. PRECONSTRUCTION CONFERENCE

15.1 Following the award of Contract, the Contractor and the Contractor's Subcontractors will be required to attend a Preconstruction Meeting at a time and place designated by the Engineer.

16. APPROVAL OF MATERIALS

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

17. PERIOD OF GUARANTEE AND BONDS

17.1 Performance Bond furnished by the Contractor shall remain in full force and effect until all bills are paid.

17.2 Maintenance Bonds will remain in full force and effect from the date of acceptance by the Owner for the period set out in the REGULATIONS OF THE CONTRACT.

18. METHOD OF PAYMENT

18.1 Payment to the Contractor will be made by the City in cash, or its equivalent, as set out in the NOTICE OF HEARING AND LETTING.

18.2 No separate payment will be made for work covered in this part of the Specifications except as set out below. Contract Unit and Lump Sum Prices shall include all costs for every item of work.

18.3 If items of work are revised during construction, which are not shown on Proposal, Contract Price shall be adjusted on basis of Unit or Lump Sum Price negotiated with Contractor.

19. IOWA RECIPROCAL PREFERENCE

19.1 In accordance with the requirements of the Iowa Department of Labor all bidders must submit a fully complete 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 complete Bidder Status Form may result in the Proposal being determined non-responsive.

PROPOSAL

1ST AND 3RD STREET PARKING IMPROVEMENTS
S-H PROJECT NO. 2240004020

PROPOSAL:

TO FURNISH ALL MATERIALS, TOOLS AND EQUIPMENT AND TO CONSTRUCT IMPROVEMENTS AS SPECIFIED HEREIN:

NAME OF BIDDER _____

ADDRESS OF BIDDER_____

TO THE: CITY COUNCIL
CITY OF BONDURANT
200 2nd STREET NE
BONDURANT, IOWA 50035

The Undersigned as a Bidder declares that he has examined the location of the proposed work and determined the amount and character of the proposed work and the material and equipment necessary to complete same in compliance with the Specifications, Plans, Contract, and Addenda number___, ___, and ___.

The Undersigned as a Bidder also acknowledges that Award of the Contract will be made to the lowest responsible/responsive Bidder with the lowest Bid being determined by the lowest Base Bid, exclusive of any Alternates, Allowances, or Unit Prices.

The Undersigned states that he has been engaged in Contract work of this class for a period of ___ years and invites your attention to the following work that has been completed under his direction:

_____

_____

_____

_____

_____

PROPOSAL

(Certified Check)
The Undersigned submits herewith a (Bid Bond) in the amount of
(Cashier's Check)
_____ ($ _____) which shall become the property of the City of Bondurant, 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 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 the Bidders Proposal and the Specifications that the provisions of the latter shall prevail.

The Undersigned hereby proposes to provide the required labor, materials, services, equipment and tools, and to perform the work described in the Specifications, within the time required for the sum or sums stated hereinafter in the Proposal Schedule, which schedule is hereby made a part of this Proposal.

The Undersigned Bidder certifies, by submission of this bid or proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency. Furthermore, the contractor will pass this requirement on to subcontractors (if allowable) seeking subcontracts over $25,000.

The bidder shall provide immediate written notice to the City of Bondurant, Bondurant City Clerk, if at any time they learn this certification has become erroneous by reason of changed circumstances.

Bidder: _____

By: _____

Title: _____

Date: _____

PROPOSAL

1ST AND 3RD STREET PARKING IMPROVEMENTS
S-H PROJECT NO. 2240004020

1. Construct the **1ST AND 3RD STREET PARKING IMPROVEMENTS, S-H Project No. 2240004020** for the following Unit and Lump Sum Prices.

ITEM NO.	ITEM	UNIT	TOTAL	UNIT PRICE	EXTENDED PRICE
1	CLEARING AND GRUBBING	LS	1	$	$
2	TOPSOIL, STRIP, SALVAGE AND SPREAD	CY	489.0	$	$
3	EXCAVATION, CLASS 10	CY	494.0	$	$
4	EMBANKMENT IN PLACE, STOCKPILE	CY	189.0	$	$
5	SUBGRADE PREPARATION, 12 IN.	SY	2402.0	$	$
6	STORM SWR G-MAIN, TRENCHED, HDPE, 12 IN	LF	104.0	$	$
7	STORM SUBDRAIN, TRENCHED, CORRUGATED HDPE, 6 IN	LF	97.0	$	$
8	STORM SUBDRAIN, CLEANOUT	EA	1	$	$
9	VALVE BOX ADJUSTMENT	EA	1	$	$
10	STD/S-F PCC PAVEMENT, CLASS C, CLASS III, 6 IN	SY	1337.0	$	$
11	SIDEWALK, PCC, 5 IN	SY	432.0	$	$
12	DETECTABLE WARNING	SF	109.0	$	$
13	PAVEMENT REMOVAL	SY	493.0	$	$
14	INTERLOCKING PERMEABLE PAVERS	SY	162.0	$	$
15	SANITARY MANHOLE ADJUSTMENT, MINOR	EA	1	$	$
16	SW-501 STORM STRUCTURE	EA	1	$	$

ITEM NO.	ITEM	UNIT	TOTAL	UNIT PRICE	EXTENDED PRICE
17	SW-401 STORM STRUCTURE, 48"	EA	1	$	$
18	PAINTED PAVEMENT MARKINGS, SOLVENT/WATERBORNE	STA	7.1	$	$
19	PAINTED PAVEMENT SYMBOLS AND LEGENDS	EA	2	$	$
20	TEMPORARY TRAFFIC CONTROL	LS	1	$	$
21	TYPE- 'A' SIGN ASSEMBLY INSTALLATION	EA	2	$	$
22	REMOVAL AND REINSTALLATION OF EXISTING TRAFFIC SIGN	EA	2	$	$
23	HYDRAULIC SEEDING, FERTILIZING, & MULCHING TYPE 1	AC	0.5	$	$
24	PLANTS WITH WARRANTY, TREE	EA	10	$	$
25	FILTER SOCK, 8 IN.	LF	546.0	$	$
26	REMOVAL OF FILTER SOCK	LF	546.0	$	$
27	INTAKE SEDIMENT FILTER BAG	EA	6	$	$
28	REMOVAL OF SEDIMENT FILTER BAG	EA	6	$	$
29	REMOVAL OF STRUCTURE	LS	1	$	$
30	CONSTRUCTION SURVEY*	LS	1	$ 8,500*	$ 8,500*
31	MOBILIZATION	LS	1	$	$
32	CONCRETE WASHOUT	EA	2	$	$
33	6 FT. WOODEN FENCE	LF	120.0	$	$

ITEM NO.	ITEM	UNIT	TOTAL	UNIT PRICE	EXTENDED PRICE
34	SITE LIGHTING AND CIRCUITRY	LS	1	$	$
35	TEMPORARY CONSTRUCTION FENCE	LF	300.0	$	$
*Services By Shive Hattery				**BID TOTAL:**	**$**

2. Work on said project shall begin after the notice to proceed is issued and the contract is awarded on July 15, 2024. The project must reach Substantial Completion by November 22, 2024, which includes the construction of both parking lots, all paved areas, storm sewer, electrical improvements, and making the sidewalk and parking sections available for public use. The entire project must be fully completed by May 30, 2025. Final Completion includes full restoration and seeding, tree plantings, wooden fence construction, and all remaining items not related to the substantial completion of the project.

4. Required Attachment(s):
   - Authorization to Transact Business
   - Bidder Status Form
   - Bid Bond (10%)

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.

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 bidders who are residents? ☐ Yes ☐ No

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

_____

_____

You may attach additional sheet(s) if needed.

To be completed by all bidders — Part D

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

Firm Name: _____

Signature: _____ Date: _____

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

309-6001 02-14

BID BOND

1ST AND 3RD STREET PARKING IMPROVEMENTS
BONDURANT, IOWA
S-H PROJECT NO. 2240004020

KNOW ALL MEN BY THESE PRESENTS, That we, _____
as Principal, and _____, as Surety are held and firmly bound unto the CITY OF BONDURANT, IOWA, hereinafter called "OWNER", in the penal sum of _____DOLLARS ($_____) lawful money of the United States, for the payment of which sum will and truly be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents. The condition of this obligation is such that whereas the Principal has submitted the accompanying Bid, dated _____, 2024, for the **1ST AND 3RD STREET PARKING IMPROVEMENTS, S-H Project No. 2240004020.**

NOW, THEREFORE,

(A) If said Bid shall be rejected, or in the alternate;

(B) If said Bid shall be accepted and the principal shall execute and deliver a Contract in the form specified and shall furnish a Bond for the faithful performance of said Contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said Bid.

Then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

By virtue of statutory authority, the full amount of this Bid Bond shall be forfeited to the Owner in liquidation of damages sustained in the event that the Principal fails to execute the contract and provide the Bond as provided in the Specifications or by law.

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

BID BOND

IN WITNESS WHEREOF, the Principal and the Surety, have hereunto set their hands and seals, and such of them as are corporations, have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers this _____day of _____, A.D., 2024.

_____ Witness Principal

(Seal)

By _____
(Title)

_____
(Surety)

By _____
(Attorney-in-Fact)

CONTRACT

1ST AND 3RD STREET PARKING IMPROVEMENTS
BONDURANT, IOWA
S-H PROJECT NO. 2240004020

STATE OF IOWA }
} ss.
COUNTY OF POLK }

THIS AGREEMENT AND INDENTURE made and entered into this, the _____ day of _____, 2024, by and between the CITY OF BONDURANT, IOWA, termed in this Agreement and the Specifications as the "Owner", and _____, termed in this Agreement and the Specifications as the "Contractor".

WITNESSETH:

THAT, WHEREAS, The Contractor will commence and complete the construction of the following improvements known as the **1ST AND 3RD STREET PARKING IMPROVEMENTS, S-H Project No. 2240004020.**

WHEREAS, The Owner has heretofore caused to be prepared certain Contract Documents for furnishing material and constructing improvements therein fully described, and the Contractor did, on the ____ day of _____, _____, file with the Owner a copy of said Contract Documents, including therein his offer and Proposal to furnish said materials and construct said improvements at the terms therein fully stated and set forth; and,

WHEREAS, The said Contract Documents and Proposal accurately and fully describe the terms and conditions upon which the Contractor is willing to furnish the material and construct the improvements called for by the said Plans and Specifications and in the manner and time of furnishing and constructing same.

IT IS THEREFORE, AGREED;

FIRST, That a copy of said Contract documents and Proposal filed as aforesaid are a part hereof and that the same do in all particulars become the Agreement and Contract between the parties hereto in all matters and things set forth therein and described; that both parties hereby accept and agree to the terms and conditions of said Contract Documents and Proposal so filed; and further that the part or parts of the Proposal accepted and the compensation therefore are as follows:

SECOND, The Contract Documents and Proposal hereto annexed are made a part of this Agreement and Contract as fully and absolutely as if herein set out in detail.

THIRD, This Contract is executed in three copies, each of which will be deemed an original with distribution as follows: Owner – one (1) copy, Contractor – one (1) copy, Bonding Company – one (1) copy.

CONTRACT

The term "Contract Documents" means and includes the following:

A. Notice of Hearing and Letting
B. Instructions to Bidders
C. Proposal
D. Authorization to Transact
E. Bidder Status
F. Bid Bond
G. Contract
H. Performance Bond
I. Regulations of the Contract
J. Supplemental Regulations of the Contract
K. Special Conditions
L. Detailed Specifications
M. Plans Numbered
C000, C001, C002, C003, CD01, CD02, C101, C102, C201, C202, C203, C301, C501, C502, L101, L102, E000, E101, E102, E500
N. Standard Drawings
O. Addenda Number ____ through____.
P. Change Orders Number ____ through____.
Q. Notice to Proceed

IN FAITH WHEREOF, Witness the hands and seals of both parties on the day and year in this Agreement first above written.

CONTRACTOR:

_____

By:_____

Title: _____

ATTEST:

_____

By:_____

Title: _____

CITY OF BONDURANT, IOWA

By: _____
Shelby Hagan
City Clerk

PERFORMANCE BOND

1ST AND 3RD STREET PARKING IMPROVEMENTS
BONDURANT, IOWA
S-H PROJECT NO. 2240004020

KNOW ALL MEN BY THESE PRESENTS, that we, the Undersigned, _____ _____of _____, hereinafter referred to as "Contractor" and _____, a Corporation organized under the laws of the State of Iowa, and authorized to transact business in the State of Iowa, as Surety, are held and firmly bound unto the City of Bondurant, hereinafter referred to as "Owner" in the penal sum of _____ DOLLARS ($_____), lawful money of the United States of America for the payment of which sum, will and truly be made, we bind ourselves and our heirs, executors, administrators, successors, and assigns, jointly and severally by these presents.

1ST AND 3RD STREET PARKING IMPROVEMENTS, S-H Project No. 2240004020

WITNESSETH:

WHEREAS, the above bonded Contractor has, on the _____ day of _____, 20____, entered into a written Contract with the aforesaid Owner for furnishing all materials, equipment, tools, superintendents, labor and other facilities, and accessories, for the construction of certain improvements as designated, defined and described in the said Contract and the Conditions thereof, and in accordance with the Specifications and Plans therefore, a copy of said Contract being attached hereto and made a part hereof.

The condition of the foregoing obligation is such that if the said Contractor shall and will, in all particulars duly and faithfully observe, perform, fulfill and abide by each and every covenant, condition and part of said Contract Documents hereto attached, or by reference, made a part hereof, according to the true intent and meaning in each case, and indemnify and save harmless the owner from all loss, liability, counsel fees, costs, and damage of whatsoever nature or kind, by reason of the Contractor's default or failure, then this obligation shall be and become null and void, otherwise it shall remain in full force and effect.

Provided further, the undersigned Contractor and Surety hereby bind themselves to the obligations and conditions set forth in Chapter 573, Code of Iowa, 2019, which by this reference is made a part hereof as though fully set out herein.

Provided further, the said Surety hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the Contract, or the work to be performed hereunder, or the Specifications accompanying the same, shall in any way affect its obligation on this Bond and it does hereby waive notice of any change, extension of time, alteration, or addition to the terms of the Contract, or to the work, or to the Specifications.

Provided further, the Contractor hereby waives all Notice of Default or any other acts giving rise to the claim under this Bond. In the event that any actions or proceedings are initiated with respect to this Bond, the parties agree that the venue thereof shall be Polk County, State of Iowa.

Provided further, if legal action is required by the Owner against the Surety or Principal to enforce the provisions of this Bond or to collect the monetary obligation incurring to the benefit of the Owner, the Surety or Principal agrees to pay to Owner all damages, costs, and attorney fees incurred by enforcing any of the provisions of this agreement. All rights, powers, and remedies of the Owner hereunder shall be cumulative and not alternative and shall be in addition to all rights, powers and remedies given to Owner by law. Owner may proceed against Surety for any amount guaranteed hereunder whether action is brought against Principal or whether Principal is joined in any such action or actions or not.

Provided further, this instrument embodies the entire agreement between the parties. There are no promises, terms, conditions or obligations other than those contained herein, and this Bond agreement shall supersede all previous communications, representations, or other agreements, either verbal or written, between the parties hereto.

IN WITNESS WHEREOF, the said Contractor has hereunto set his hand, and the said Surety has caused these presents to be executed in its name, and its corporate seal to be hereunto affixed, by its Attorney-in-Fact duly authorized thereunto so to do at _____
_____, on the _____ day of _____, 20____.

_____
Contractor

By: _____
(Seal)

_____
Surety Company

By: _____
(Attorney-in-Fact)

(Seal)

By: _____

(Accompany this Bond with Attorney-in-Fact's authority from the Surety Company certified to include the date of the Bond.)

REGULATIONS OF THE CONTRACT

BONDURANT, IOWA

1ST AND 3RD STREET PARKING IMPROVEMENTS, BONDURANT, IOWA
S-H PROJECT NO. 2240004020

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1. GENERAL STATEMENT

1.1 It is expressly understood and agreed that the Contract Documents comprised of the Notice of Hearing and Letting, Instructions to Bidders, Regulations of the Contract, Proposal, Contract, Supplemental Regulations, Performance Bond, Statutory Bond, Special Conditions, Detailed Specifications, Plans, all Addenda thereto issued prior to the time of opening of Bids for the work, all of which are hereto attached, Approved Change Orders, Notice to Proceed, and other Drawings, Specifications, and engineering data which may be furnished by the Contractor and approved by the Owner, together with such additional Drawings which may be furnished by the Engineer from time to time as are necessary to make clear and to define in greater detail the intent of the Specifications and Drawings.

1.2 That several parts of the 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 the Documents is to include the furnishing of all materials, labor, tools, equipment and supplies necessary for completion of the contract obligations. Materials or work described in words which so applied have a well-known technical or trade meaning shall be held to refer to such recognized standards. Notwithstanding Section 1.1 of the Special Conditions, in the event of a conflict between any of the contract documents, the Contractor is to provide the greater quantity and/or better quality, unless otherwise directed in writing by the Owner or Engineer.

1.3 The Contract shall be executed in Polk County in the State of Iowa. Five copies of Contract Documents shall be prepared, each containing an exact copy of the Contractor's Proposal as submitted, the Performance Bond properly executed, a Statutory Bond where required, and the Documents shall be filed as follows: Two with the Owner, One with the Contractor, One with the Engineer, One with Bonding Company.

2. DEFINITIONS

2.1 Wherever any work or expression in this article, or pronoun used in its stead, occurs in these Contract Documents, it shall have and is mutually understood to have the meaning herein given:

2.1.1 "Contract" or "Contract Documents" shall include all of the Documents enumerated in the previous article.

2.1.2 "Owner", "Purchaser", shall mean the party entering into Contract or duly authorized officers or agents of the owner.

2.1.3 "Contractor" shall mean the party entering into Contract for the performance of the work covered by this Contract and duly authorized agents or legal representatives of the Contractor.

2.1.4 "Engineer" shall mean the Engineer or Engineers who have been employed by the Owner for this work, or their duly authorized agents, such agents acting severally within the scope of the particular duties entrusted to them.

2.1.5 "Inspector" shall mean the engineering or technical inspector or inspectors duly authorized by the Owner, limited to the particular duties entrusted to them.

2.1.6 "Date of Award Contract" or words equivalent thereto, shall mean the date upon which the Successful Bidder's Proposal is accepted by the Owner.

2.1.7 "Day" or "Days", unless herein other expressly defined, shall mean a calendar day or days of twenty-four (24) hours each.

2.1.8 "The work" shall mean the work to be done and the equipment, supplies, materials and labor to be furnished under this Contract, unless some other meaning is indicated by the context.

2.1.9 "Plans" or "Drawings" shall mean and include all Drawings which may have been prepared by the Engineer as a basis for proposals, all Drawings submitted by the Successful Bidder with his Proposal and by the Contractor to the Owner, if and when approved by the Engineer, and all Drawings submitted by the Owner to the Contractor during the progress of the work as provided for therein.

2.1.10 Whenever in these Contract Documents the words, "as ordered", "as directed", "satisfactory", or words of like effect and import, unless otherwise particularly specified herein, shall mean approved, reasonable, suitable, acceptable, proper or satisfactory in the judgment of the Owner and Engineer.

2.1.11 Similarly the words “approved”, “reasonable”, “suitable”, “acceptable”, “properly”, “satisfactory”, or words of like effect and import, unless otherwise particularly specified herein, shall mean approved, reasonable, suitable, acceptable, proper or satisfactory in the judgment of the Owner and Engineer.

2.1.12 Whenever the statement is made in these Contract Stipulations containing the expression “it is understood and agreed”, or an expression of the like import, such expression means the mutual understanding and agreement of the Contractor and Owner.

2.1.13 Wherever the words, “Notice to Bidders” appear in these Specifications or Contract Documents, there should be substituted therefore the words, “Notice of Hearing and Letting”.

3. CONTRACTOR’S OBLIGATIONS

3.1 It is understood and agreed that the Contractor, by careful examination, has been satisfied as to the nature and location of the work, the conformation of the ground, the character, quality and quantity of the materials to be encountered, the character of the equipment and facilities needed preliminary to and during the prosecution of the work, the general local conditions, and all other matters which can in any way affect the work under this Contract. No verbal agreement or conversation with any officer, agent, or employee of the Owner, either before or after the execution of the Contract, shall Affect or modify any of the terms of obligations herein contained.

4. ENGINEER’S OBLIGATIONS

4.1 The Engineer shall have general supervision of the work as representative of the Owner. The Engineer shall have authority to direct the program of the construction insofar as the proper execution of the Contract is affected and to the extent that the forces of labor may be increased or decreased by the Engineer’s order to ensure the execution of the Contract in the time and in the manner prescribed.

4.2 All work performed under this Contract shall be done in a first-class manner, and done to the satisfaction of the Owner. The Owner shall in all cases determine the amount, quality, acceptability, and fitness of the several kinds of work and materials herein specified. The Owner shall decide all questions which may arise as to the fulfillment of the terms of the Contract by the Contractor, or as to the intent or purpose of the Contract.

4.3 The Engineer shall, within a reasonable time after presentation, make decisions in writing on claims arising between the principals of the Contract and shall make interpretations of the Plans and Specifications. Such decisions and interpretations shall be regarded as final. In case of disagreements on decisions recourse may be taken to arbitration as hereinafter provided.

4.4 Any plan or method of work suggested by the Engineer, or other representative of the Owner, to the Contractor, but not specified or required, if adopted or followed by the Contractor in whole or in part, shall be used at the risk and responsibility of the Contractor; and the Engineer and the Owner will assume no responsibility thereof.

5. BOND

5.1 Coincident with the execution of the Contract and Agreement, the Contractor shall furnish a good and sufficient surety Bond in the full amount of the contract sum. This surety Bond, executed by the Contractor to the Owner, shall be a guarantee: (a) for the faithful performance and completion of the work in strict accordance with the terms of the Contract Documents: (b) the payment of all bills and obligations arising from this Contract which might in any manner become a claim against the Owner: (c) for payment to the Owner of all claims due or which may become due by the terms of the Contract, as well as by reason of any violation thereof by the Contractor: (d) for the protection of the Owner against all suits and claims for infringements of the patent right and/or processes: for the period of four (4) years from and immediately following the completion of said Contract and acceptance thereof by the Owner of all improvements, the payment to the Owner or the Owner's successor or assigns for all damage, loss and expense which may occur to the Owner, the Owner's successor or assigns by reason of defective materials used, or by reason of defective workmanship done, in the furnishing of materials and equipment in performance of said Contract, or in lieu thereof the Owner, the Owner's successors or assigns, may require the Contractor to maintain such items in need of repair for the said periods specified therein.

5.2 All provisions of the Bond shall be complete and in full accordance with the statutory requirements. The Bond shall be executed with the proper sureties through a company licensed and qualified to operate in the state and approved by the Owner. The Bond shall be signed by an agent resident in the State of Iowa and date of Bond shall be the date of execution of the Contract. If at any time during the continuance of the Contract, the surety on the Contractor's Bond becomes irresponsible, the Owner shall have the right to require additional and sufficient sureties which the Contractor shall furnish to the satisfaction of the Owner within ten (10) days after notice to do so. In default thereof, the Contract may be suspended, all payments or money due the Contractor withheld, and the Contract completed as hereinafter provided.

6. INSURANCE

6.1 General

6.1.1 The Contractor shall purchase and maintain insurance to protect the Contractor, the Engineer and Owner against all hazards enumerated herein. All policies shall be in the amounts, form and companies satisfactory to the Owner.

6.1.2 All Certificates of insurance required herein shall state that thirty (30) days written notice will be given to the Owner before the Policy is canceled or changed. All certificates of insurance shall be delivered to the Owner and Engineer prior to the time that any operations under this Contract are started.

6.1.3 All of said Contractor's certificates of insurance shall be written by an insurance company authorized to do business in the State of Iowa.

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

6.2.1 Claims under workers' or workmen compensation, disability benefit and other similar employee benefit acts;

6.2.2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;

6.2.3 Claims for damages because of the Contractor's injury, sickness or disease, or death of any person other than the Contractor's employees;

6.2.4 Claims for damages insured by usual personal injury liability coverage which are sustained.

A. by any person as a result of an offense directly related to the employment of such person by the Contractor, or

B. by the other person;

6.2.5 Claims for damages, other than to the work itself, because of injury to or destruction of tangible property, including loss of use resulting there from; and,

6.2.6 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.

6.3 Limits of Liability

6.3.1 The insurance required by Paragraph 6 shall be written on an occurrence form of policy for not less than any limits of liability specified herein, or required by law, whichever is greater:

General Liability; contractually, independent Contractors, Broad Form Property damage	$500,000 (including single limit per occurrence)
Personal Injury, Underground Explosion and Collapse	$500,000 (Aggregate hazards)
Automobile Liability (including all owned, non- owned and hired autos) single limit	$500,000 Combined
Worker's Compensation	Statutory Benefits $100,000 Coverage B
Umbrella Liability; (applying directly excess of above liability single limit coverage)	$1,000,000 Combined $1,000,000

6.4 Contractual Liability Insurance

6.4.1 The insurance required by Paragraph 6 shall include contractual liability insurance applicable to the Contractor's obligations as follows:

A. To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner and the Engineer and their agents, officers and employees from and against all claims, damages, losses and expenses, including, but not limited to attorney's fees, arising out of or resulting from the performance of the work, provided that any such claim, damage, loss or expense (1) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the work itself) including the loss of use resulting there from, and (2) is caused in whole or in part by any negligent act or omission of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity which would otherwise exist as to any party or person described in this paragraph.

B. In any and all claims against the Owner or Engineer or any of their agents, officers or employees by any employee of the Contractor, any Subcontractor, any directly or indirectly employed by any of them or anyone for whose acts may be liable, the indemnification obligation under this Subparagraph 4 shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

C. The obligations of the Contractor under this Subparagraph 4 shall not extend to the liability of the Engineer, the Engineer's agents or employees arising out of (1) the preparation or approval of Maps, Drawings, Opinions, Reports, Surveys, Change Orders, Designs or Specifications, or (2) the giving of or the failure to give directions or instructions by the Engineer, the Engineer's agents or employees providing such giving or failure to give are the primary cause of the injury or damage.

6.5 Contractor's Insurance for other Losses for the consideration in this agreement heretofore stated, in addition to the Contractor's other obligations, the Contractor assumes full responsibility for all loss or damage from any cause whatsoever to any tools owned by the mechanics, any tool machinery, equipment, or motor vehicles owned or rented by the Contractor, the Contractor's agents, Subcontractors, materials owned or rented by the Contractor, the Contractor's agents, Subcontractors, material suppliers or their employees, tool sheds or other temporary structures, scaffolding and staging, protective fences, bridges and sidewalk hooks. The Contractor shall also assume responsibility for all loss or damage caused by, arising out of or incident to larceny, theft, or any cause whatsoever (except as hereinbefore provided) to the structure on which the work of this Contract, and any modifications, alterations, enlargement thereto, is to be done, and to the following items and labor connected or to be used as a part of the permanent materials, and supplies necessary to the work.

6.6 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.

7. ASSIGNMENT OF CONTRACT

7.1 The Contractor shall not assign or transfer this Contract, nor sublet it as a whole, without the written consent of the Owner and of the Surety on the Contractor's Bond. Such consent of Surety, together with copy of assignment shall be filed with the Engineer. No assignment, transfer or subletting, even though consented to, shall relieve the Contractor of the Contractor's liabilities under this Contract. Should any assignee fail to perform the work undertaken by the Assignee in a satisfactory manner, the Owner may at the Owner's option annul and terminate Assignee's Contract.

8. SUB-CONTRACTS

8.1 The Contractor shall, as soon as practicable after the signing of the Contract, notify both the Owner and the Engineer in writing of the names of Subcontractors proposed for the work and shall not employ any that the Owner or the Engineers may within a reasonable time object to as incompetent or unfit.

8.2 The Contractor agrees that the Contractor is as fully responsible to the Owner for the acts and omissions of the Contractor's subcontractors and of persons either directly or indirectly employed by them, as the Contractor is for the acts and omissions of persons directly employed by the Contractor.

8.3 Nothing contained in the Contract Documents shall create any contractual relation between any Subcontractor and the Owner.

8.4 No officer, agent or employee of Owner, including the Engineer, shall have any power or authority whatsoever to bind the Owner or incur any obligation in its behalf to any Subcontractor, material supplier, or other person in any manner whatsoever.

9. OTHER CONTRACTS

9.1 The Owner reserves the right to let other contracts in connection with this work. The Contractor shall afford other Contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work, and shall properly connect and coordinate the Contractor's work with theirs.

9.2 If any part of the Contractor's work depends for proper execution or results on the work of any other Contractor, the Contractor shall inspect and promptly report to the Engineer any defect in such work that renders it unsuitable for such proper execution and results.

9.3 The Contractor's failure to inspect and report shall constitute an acceptance of the other Contractor's work as fit and proper for the reception of his work, except as to defects which may develop in the other Contractor's work after the execution of the Contractor's work.

9.4 Wherever work being done by the Owner's forces or by other Contractors is contiguous to work covered by this Contract, the respective rights of the various interests involved shall be established by the Engineer, in order to secure the completion of the various portions of the work in general harmony.

10. LEGAL RESTRICTIONS

10.1 The Contractor shall procure at the Contractor's own expense all necessary licenses and permits of a temporary nature and shall give due and adequate notice to those in control of all licenses and easements for permanent structures or permanent changes in existing facilities shall be provided by the Owner unless otherwise specified. The Contractor shall have all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the work as drawn or specified.

11. ROYALTIES AND PATENTS

11.1 It is agreed that all royalties for patents or patent infringement claims, whether such patents are for processes or devices, that might be involved in the construction or use of the work, shall be included in the Contract amount and the Contractor shall satisfy all demands that may be made at any time for such, and shall be liable for any damages or claim for patent infringements, and the Contractor shall at the Contractor's own expense, defend any and all suits or proceedings that may be instituted at any time against the Owner for infringement or alleged infringement of any patent or patents involved in the work, and in case of an award of damages, the said Contractor shall pay such award; final payment to the Contractor by the Owner will not be made while any such suits or claims remain unsettled.

12. SCOPE AND INTENT OF SPECIFICATIONS AND PLANS

12.1 General

12.1.1 These Specifications and Project Plans are intended to supplement, but not necessarily duplicate each other, and together constitute one complete set of Specifications and Plans so that any work exhibited in the one and not in the other, shall be executed just as if it has been set forth in both, in order that the work shall be completed according to the complete design of the Engineer.

12.1.2 Should anything be omitted from the Specifications and Plans which is necessary to a clear understanding of the work, or should it appear various instructions are in conflict, then the Contractor shall secure written instructions from the Engineer before proceeding with the construction affected by such omissions or discrepancies. It is understood and agreed that the work shall be performed and completed according to the true spirit, meaning and intent of the Contract, Specifications and Plans.

12.2 Figures Dimensions to Govern

12.2.1 Dimensions and elevations shown on the Plans shall be accurately followed, even though they differ from scaled measurements. No work shown on the Plans, the dimensions of which are not indicated, shall be executed until the required dimensions have been obtained from the Engineer.

12.3 Contractor to Check Plans and Schedules

12.3.1 The Contractor shall check all dimensions, elevations and quantities shown on the Plans and schedules given to the Contractor by the Engineer, and shall notify the Engineer of any discrepancy between the Plans and the conditions on the ground, or any error or omissions in the plans, or in the layout as given by stakes, points, or instructions, which the Contractor may discover in the course of the work. The Contractor will not be allowed to take advantage of any error or omission in the Plans or Contract Documents, as full instructions will be furnished by the Engineer should error or omission be discovered, and the Contractor shall carry out such instructions as if originally specified.

12.3.2 The apparent silence of the Plans and Specifications as to any detail or the apparent omission from them of a detailed description concerning any point, shall be regarded as meaning that only the best general practices, as accepted by the particular trades or industries involved, shall be used.

13. SUPERVISION

13.1 The Owner may appoint or employ (either directly or through the Engineer) such engineering inspectors as the Owner may deem proper, to inspect the materials furnished and the work performed under this Contract, and to see that the said materials are furnished, and the said work performed, in accordance with the Plans and Specifications therefore.

13.2 The Contractor shall furnish all reasonable aid and assistance required by the Engineer, or by the Supervisors or Inspectors, for the proper inspections and examination of the work and all parts therefore.

13.3 The Contractor shall regard and obey the directions and instructions of the Engineer, or by the Supervisors or Inspectors, for the proper inspection and examination of the work and all parts thereof.

13.4 The Contractor shall regard and obey the directions and instructions of the Engineer, or any Supervisor or Inspector so appointed, when the same are consistent with the obligations of this Contract and the Specifications therefore, provided, however, that should the Contractor object to any order given by any subordinate Engineer, Supervisor, or Inspector, the Contractor may make written appeal to the Engineer for his decision.

13.5 Engineering Inspectors, and other properly authorized representative of the Owner or Engineer shall be free at all times to perform their duties, and intimidation or attempted intimidation of anyone of them by the Contractor or by any of the Contractor's employees shall be sufficient reason, if the Owner so decides, to annul the Contract.

13.6 Such inspection shall not relieve the Contractor from any obligation to perform said work strictly in accordance with the Plans and Specifications or any modifications thereof as herein provided, and work not so constructed shall be removed and made good by the Contractor at the Contractor's own expense, and free of all expense to the Owner, whenever so ordered by the Engineer, without reference to any previous oversight or error in inspection. Any defective material or workmanship may be rejected by the Engineer at any time before the final acceptance of the work, even though the same may have been previously overlooked and estimated for payment.

13.7 Inspector shall have authority subject to the final decision of the Engineer to condemn and reject any defective work or material and to suspend the work when the same is not being properly done.

13.8 All condemned work shall be promptly taken out and replaced by satisfactory work; all condemned materials shall be promptly removed from the vicinity of the work. Should the Contractor fail or refuse to comply with instructions in this respect the Owner may, upon certification by Engineer, withhold payment or proceed to terminate Contracts as herein provided.

13.9 Re-examination of questioned work may be ordered by the Engineer, and if so ordered, the work must be uncovered by the Contractor. If such work be found not done in accordance with the Contract Documents, the Owner shall pay the cost of re-examination and replacement. If such work be found not in accordance with the Contract Documents, the Contractor shall pay such cost, unless the Contractor shall show that defect in the work was caused by another Contractor of the Owner and in that event the Owner shall pay the cost.

13.10 The Contractor shall furnish samples for testing purposes of any material required by the Engineer, and shall furnish any information required concerning the nature or source of any material which the Contractor proposes to use. Laboratory tests are to be made as directed by the City Engineer and the cost to be paid by the Owner.

14. LINE AND GRADE

14.1 All construction work shall be done to the lines and grades shown on the Plans. The Engineer will establish on the site horizontal and vertical control benchmarks as shown on the Plans. Detailed survey and staking for location and grade of individual structures or other construction, as well as measurements and elevations within structures shall be performed by the Contractor.

14.2 For the construction of sewers, water lines, street and other types of lines or route work, the Engineer will establish on the site horizontal and vertical control bench marks, as shown on the Plans, with reference to dimensions thereto from which the work may be laid out by the Contractor.

14.3 Consult Special Conditions for any exceptions to above requirements concerning detailed survey and staking applying to this particular contract. In any case, all such detailed survey and stake out shall be checked by the Contractor who shall assume full responsibility for the accuracy and correctness thereof.

14.4 In all cases, the Contractor shall provide without extra compensation, competent workers and the necessary tools, and other materials required for proper checking of the work.

14.5 The Contractor shall without extra compensation furnish competent workers and the necessary tools to make all test holes and exploration required at any time for the purpose of determining the location of existing structures beneath the ground surface which might conflict or interfere with this work.

14.6 The Contractor shall carefully preserve all monuments, reference points, stakes and benchmarks set by the Engineer, and in case of destruction of same through carelessness or negligence on the part of the Contractor, he will be charged with the resulting expense of replacement and responsibility for any mistakes or loss of time caused thereby.

15. SUPERINTENDENCE

15.1 The Contractor shall keep on the project, during its progress, a competent Superintendent and any necessary assistants, all satisfactory to the Engineer. The Superintendent shall represent the Contractor in the Contractor's absence and all directions given to the Superintendent shall be binding as if given to the Contractor.

15.2 The Contractor shall provide proper tools and equipment and the services of all workers, mechanics, trades people, and other employees necessary in the construction and execution of the work contemplated and outlined herein. The employees of the Contractor shall be competent and willing to perform satisfactorily the work required of them. Any employee who is disorderly, intemperate or incompetent or who neglects or refused to perform his work in a satisfactory manner, shall upon the request of the Engineer, be promptly discharged from the Project and shall not be re-employed except with the Engineer's consent.

15.3 It is called particularly to the Contractor's attention that only first-class workmanship will be acceptable.

16. PROTECTION OF WORK

16.1 The Contractor shall continuously maintain adequate protection of all the Contractor's work from damage and shall protect the Owner's property from injury of loss arising in connection with this Contract. The Contractor shall make good any such damage, injury or loss, except such as may be directly due to errors in the Contract Documents or caused by agents or employees of the Owner. The Contractor shall adequately protect adjacent property as provided by law and the Contract Documents. The contractor shall Provide and maintain all passageways, guard fences, lights and other facilities for protection required by public authority of local conditions.

16.2 In an emergency affecting the safety of life or of the work or of adjoining property, the Contractor without special instruction or authorization from the Engineer, is hereby permitted to act at the Contractor's discretion to prevent such threatened loss or injury, and the Contractor shall so act, without appeal, if so instructed or authorized. Any compensation, claimed by the Contractor on account of emergency work, shall be determined by agreement or arbitration.

16.3 Whenever, in the opinion of the Engineer, the Contractor has not taken sufficient precaution for the safety of the public or the protection of the work to be constructed under this Contract, or of adjacent structures or property which may be injured by the processes of construction on account of such neglect, and whenever, in the opinion of the Engineer, an emergency shall arise and immediate action shall be considered necessary in order to protect the public or private, personal or property interest, then the Engineer, with or without notice to the Contractor, may provide suitable protection to the said interest by causing such work to be done and material to be furnished and placed as the Engineer may consider necessary and adequate.

16.4 The cost and expense of such work and material so furnished shall be borne by the Contractor, and, if the same shall not be paid on presentation of the bills therefore, such costs shall be deducted from any amounts due or to become due the Contractor. The performance of such emergency work under the direction of the Engineer shall in no way relieve the Contractor of responsibility for damages which may occur during or after such precaution has been duly taken by the Engineer.

17. SAFETY REGULATIONS

17.1 Notwithstanding any other provisions to the contrary, the Contract Documents shall be subject to the applicable provisions of the Williams-Steiger Occupational Safety and Health Act of 1970, Public Law 91-596, 84 Stat. 1590; and Iowa Senate File 1218, Acts 64th General Assembly, Second Regular Session (1972); and all lawful regulations and rules pursuant thereto.

18. MATERIALS AND WORKMANSHIP

18.1 The Contractor hereby guarantees the work in connection with this Contract against faulty materials or poor workmanship during the period of time, as set out in the Notice after the date of completion and acceptance of the Contract.

19. SHOP DRAWINGS

19.1 The Contractor shall furnish the Engineer with duplicate copies of all shop and erection Drawings for preliminary approval. These Drawings shall include the Drawings prepared on structural and reinforcing steel, special layout, Drawings of equipment or machinery purchased under this Contract, and any other supplementary Drawings required in the prosecution of the work. One copy shall be returned to the Contractor for correction and one copy retained by the Engineer for office reference. After correction, the Contractor shall submit five (5) corrected copies to the Engineer for final approval and distribution to all interested parties. No material or equipment shall be used or installed until such formal approval is received by the Contractor.

19.2 The purpose of having shop and erection Drawings checked and approved by the Engineer are two-fold:

19.2.1 To assure the compliance with the purpose and intent of the Plans and Specifications.

19.2.2 To assist the Contractor in interpreting the Plans and Specifications so as to eliminate mistakes in the material or equipment actually shipped to the site of the work.

19.3 The formal approval given to the Contractor is to be considered as in compliance with these purposes and in no manner shall be construed so as to relieve the Contractor from any liability or responsibility for proper construction or compliance with the Plans and Specifications.

20. USE OF COMPLETED WORK

20.1 The Owner shall have the right to take possession of and use any completed or partially completed portions of the work, notwithstanding the time for completing the entire work or such portions as may not have expired; but such taking, possession and use shall not be deemed an acceptance of any work not completed in accordance with the Contract Documents. If such prior use increases the cost of, or delays the work, the Contractor shall be entitled to such extra compensation or extension of time, or both, as the Engineer may determine.

20.2 The Owner, in taking possession of completed portions, agrees to accept the decision of the Engineer on matters relating to responsibility for damage that may occur to any portion of the work during the period of possession preceding acceptance and final payment.

21. CHANGED WORK

21.1 The Owner, without invalidating the Contract, may order additional work to be done in connection with the Contract, or may alter or deduct from the work, the contract sum to be adjusted accordingly. All such work shall be executed under the conditions of the original Contract and subject to the same inspection and test as though therein included.

21.2 Provided, however, that any additional, omitted or changed work shall not be ordered, undertaken or commenced until after the consent has been obtained in writing of the Contractor's construction surety bonds persons, except minor changes not inconsistent with the general purpose of the Contract not involving costs or substitution of materials.

21.3 The Owner shall have authority, by verbal instructions, to make minor changes in the work, not involving cost, and not inconsistent with the purposes of the work. Otherwise, except in an emergency endangering life or property, all extra work or changes shall be done as ordered in writing by the Owner, which order shall state the location, character, amount, and method of compensation. No extra work or change shall be made unless in pursuance of such written order by the Owner, and no claim for an addition to the Contract sum shall be valid unless so ordered. The adjustment to the Contract sum for any such extra work or change shall be determined in one or more of the following ways:

21.3.1 By a Lump Sum Price agreed upon prior to starting the additional or changed work.

21.3.2 By Unit Prices named in the Proposal or as agreed upon prior to starting the additional or changed work.

21.3.3 By cost plus a fixed fee, the latter agreed upon prior to starting the additional or changed work.

21.3.4 By cost plus percentage, the latter agreed upon prior to starting the additional or changed work.

21.4 "Cost" in methods (21.3.3) and (21.3.4) shall include all labor, materials, power, fuel and rental on major items of equipment. The Contractor shall keep and present in such forms as the Engineer may direct, a correct account of the several items of cost together with vouchers. This definition and requirement applies equally to work done by Subcontractors.

21.5 Under method (21.3.4), compensation or adjustment for work done by Subcontractors shall be computed on the same basis as if done by the Contractor except that ten percent (10%) shall be added to the amount or charged by the Subcontractor.

21.6 The above percentages shall be understood to include all other costs and compensation such as insurance, small tools, superintendence, office and other overhead costs and profit. Rental on equipment shall be charged against the additional or changed work only for the actual time which the equipment is used specifically thereof, and will be charged according to the current schedule of the Associated General Contractors of America, whether owned or rented by the Contractor. Transportation charges necessarily incurred in connection with equipment authorized by the Engineer for use on the extra work which is not already on the job will be charged.

21.7 Changed work shall be adjusted considering separately the parts of the work added and the parts omitted. Amount of adjustment for parts omitted shall be estimated at time omission of work is authorized and the agreed adjustment will be deducted from final quantities.

21.8 Statements for additional or changed work shall be rendered by the Contractor not later than fifteen (15) days after the completion of each assignment of additional or changed work and if found correct will be approved by the Engineer and submitted for payment with the final quantities.

21.9 The Owner reserves the right to Contract with any person or firm other than the Contractor for any or all extra work. The Contractor's attention is especially called to the fact that he shall be entitled to no claim for damages for anticipated profits on any portion of the work that may be omitted.

21.10 In Unit Price Contracts the total quantity of work may be adjusted upward or downward by the Owner, to the extent that the final Contract price is between 80 and 120 percent of the original estimated Contract price. Amounts of individual items may be varied to any extent and individual items may be omitted entirely as long as the above limits are met. In the event that the total quantity of work is adjusted upward or downward beyond the above limits, that portion of the work beyond said limits may be performed at the original Contract unit prices if agreed by the Owner and the Contractor, or otherwise, shall be handled in accordance with the provisions stated previously in this article.

22. DISPUTED CLAIMS

22.1 In any case where the Contractor deems that extra compensation is due the Contractor for work material not clearly covered in the Contractor's Contract and not ordered by the Engineer as extra work as defined herein, the Contractor shall notify the Engineer in writing of the Contractor's intention to make claim for such extra compensation before the Contractor begins the work on which the contractor bases the Contractor's claim.

22.2 The Owner shall be responsible for damages attributable to the performance, nonperformance, or delay, of any other Contractor, governmental agency, utility, firm, corporation, or individual authorized to do work on the Project, only when such damages result from negligence on the part of the Contracting Authority as damages resulting from such performances, nonperformance, or delays. The Contractor shall notify the Engineer in writing at the time the delay occurs.

22.3 In either case, if such notification is not given, or if after such notification is given, the Engineer is not afforded facilities for keeping strict account of actual costs as defined for force-account construction, the Contractor thereby agrees to waive the claim for extra compensation for such work. Such notice by the Contractor, and the fact that the Engineer has kept account of the cost as aforesaid, shall not be construed as establishing the validity of the claim. The claim, when filed, shall be in writing and in sufficient detail to permit auditing and an intelligent evaluation by the Owner. The claim shall be supported by such documentary evidence as the claimant has available and shall be verified by affidavit or the claimant or other persons having knowledge of the facts. In the event the claimant wishes an opportunity to present his claim in person, then the claim shall be accompanied by a written request to do so. Where the claimant asks an opportunity to present the claimant's claim in person, the Owner, within thirty (30) days of filing of the claim, shall fix a time and place for a meeting between the claimant, the Owner, or its designated representative or representatives. The Owner shall, within a reasonable time from the filing of the claim or the meeting above referred to, whichever is later, rule upon the validity of the claim and notify the claimant, in writing, of its ruling together with the reasons thereof. In case the claim is found to be just, in whole or in part, it shall be allowed and paid to the extent so found.

22.4 Any claim of the Contractor denied in whole or in part by the Owner or Engineer may be submitted to arbitration as set forth in Article 32.

23. SUSPENSION OF WORK

23.1 The Owner may at any time without cause suspend the work or any part thereof by giving ten (10) days written notice to the Contractor. The work shall be resumed by the Contractor within ten (10) days after the date fixed in the written notice from the Owner to the Contractor to do so. Failure of the Contractor to maintain the policies of insurance as required by Section 6 shall constitute a substantial violation of the Contract and the Owner shall have the right to suspend and/or terminate the Contract in accordance with Section 25.

23.2 If the work or any part thereof, shall be stopped by the notice in writing aforesaid, and if the Owner does not give notice in writing to the Contractor to resume within a reasonable period of time, then the Contractor may abandon that portion of the work so suspended, and he will be entitled to the estimated payments for all work done on the portions abandoned, if any.

24. OWNER'S RIGHT TO DO WORK

24.1 If the Contractor should be adjudged bankrupt, or if the Contractor should make a general assignment for the benefit of the Contractor's creditors, or if a receiver should be appointed on account of the Contractor's insolvency, or if the Contractor should persistently or repeatedly refuse or should fail, except in cases for which extension of time is provided, to supply enough properly skilled workers or proper materials, or if the Contractor should fail to make prompt payments to subcontractors or for material or labor, or persistently disregard laws, ordinances or instructions of the Engineer, or otherwise be guilty of a substantial violation of any provision of the Contract, then the Owner, upon the certificate of the Engineer that sufficient cause exists to justify such action, may without prejudice to any other right or remedy and after giving the Contractor seven (7) days written notice, terminate the employment of the Contractor and take possession of the premises and of all materials, tools, and appliances thereon and finish the work by whatever method the Engineer may deem expedient.

24.2 In such case, the Contractor shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the Contract price shall exceed the expense of finishing the work, including compensation for additional managerial and administrative services, such excess shall be paid to the Contractor. If such expense shall exceed such unpaid balance, the Contractor shall pay the difference to the Owner. The expense incurred by the Owner as herein provided and damage incurred through the Contractor's default, shall be certified by the Engineer.

24.3 Pending arbitration or settlement of disputes on any point of controversy the Engineer may suspend action on all or any part of the work. The Contractor shall not be entitled to any claim for loss or damage by reason of such delay nor shall he be entitled to any claim for loss or damage by reason of such delay nor shall he be entitled to extension of time although such extension of time may be granted by the Engineer if the Engineer deems it in the interest of the work.

25. CONTRACT TERMINATION

25.1 If the Contractor should be adjudged bankrupt, or if he should make a general assignment for the benefit of the Contractor's creditors, or if a receiver should be appointed on account of the Contractor's insolvency, or if the Contractor should persistently or repeatedly refuse or should fail, except in cases for which extension of time is provided, to supply enough properly skilled workers or proper materials, or if the Contractor should fail to make prompt payment to subcontractors or for material or labor, or persistently disregard laws, ordinances or instructions of the Engineer, or otherwise be guilty of substantial violation of any provision of the contract, then the Owner, upon the certificate of the Engineer that sufficient cause exists to justify such action, may, without prejudice to any other right or remedy and after giving the Contractor seven (7) days written notice, terminate the employment of the Contractor and take possession of the premises and of all materials, tools, and appliances thereon and finish the work by whatever method the Engineer may deem expedient.

25.2 In such case, the Contractor shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the Contract price shall exceed the expense of finishing the work, including compensation for additional managerial and administrative services, such excess shall be paid to the Contractor. If such expense shall exceed such unpaid balance, the Contractor shall pay the difference to the Owner. The expense incurred by the Owner as herein provided and the damage incurred through the Contractor's default, shall be certified by the Engineer.

25.3 Pending arbitration or settlement of disputes on any point of controversy, the Engineer may suspend action on all or any part of the work. The Contractor shall not be entitled to any claim for loss or damage by reason of such delay nor shall the Contractor be entitled to extension of time although such extension of time may be granted by the Engineer if the Engineer deems it in the interest of the work.

26. CONTRACTOR'S RIGHTS

26.1 If the work should be stopped under an order of any court, or other public authority, for a period of three (3) months, through no act or fault of the Contractor or of anyone employed by the Contractor, or if the Engineer should fail to issue any estimate for payment within fourteen (14) days after it is due, or if the Owner should fail to pay the Contractor within twenty (20) days of its maturity and presentation any sum certified by the Engineer or awarded by arbitrators, then the Contractor, may, upon seven (7) days written notice to the Owner and the Engineer, stop work or terminate this Contract and recover from the Owner payment for all work executed and any loss sustained upon any plant or materials and reasonable profit and damages.

27. TIME OF COMPLETION

27.1 The Contract shall be completed within the time stated in the NOTICE OF HEARING AND LETTING subject to such extensions as may from time to time be allowed the Contractor by the Owner as hereinafter provided.

27.2 Substantial Completion will be determined by the engineer as follows. To achieve substantial completion for a given phase, the contractor must complete the following items:

27.2.1 Construction of both parking lots, including all paved areas making the sidewalk and parking sections available for public use.

27.2.2 All electrical work related to the secondary service supply and overhead lighting fixtures.

27.2.3 All storm sewer / utility items installed.

27.2.4 Finish grading and topsoil placement.

27.2.5 Stabilization of the site.

27.2.8 Tress, wooden fencing, seeding, or other permanent installation of site restoration is not required to be completed to achieve substantial completion provided such installation is ready to be completed at such time as appropriate weather and time of year allow for installation per the project plans and specifications.

28. DELAYS

28.1 The Contractor expressly covenants and agrees that in undertaking to complete the work within the time herein fixed, the Contractor has taken into consideration and made allowances for all of the ordinary delays and hindrances incident to such work, whether growing out of delays in securing materials or workers, reasonably anticipatable weather, or otherwise. Should the Contractor, however, be delayed in the prosecution and completion of the work by reason of delayed shipment orders, abnormal weather, or by any changes, additions, omissions therein ordered in writing by the Owner, through no fault of the Contractor (or by the abandonment of the work by the workers engaged thereon), or by any act taken by the U.S. Government such as the commandeering of labor, or materials, embargoes, etc., which would affect the fabrication or delivery of materials and/or equipment to the work; or by neglect, delay or default of any other contractor of the Owner, or delays caused by court proceedings; the Contractor shall have no claims for damages for any such cause or delay; but shall in such cases be entitled to such extension of the time specified for the completion of the work as the Owner shall award in writing on account of such delays, provided, however, that claim for such extension of time is made by the Contractor to the Owner in writing with one (1) week from the time when any such alleged cause for delay shall occur.

29. PAYMENTS

29.1 Payment for said improvement will be made in accordance with the terms and conditions as set forth in the published NOTICE OF HEARING AND LETTING.

30. PAYMENTS WITHHELD

30.1 The Owner may withhold or, on account of subsequently discovering evidence, nullify the whole or a part of any certificate to such an extent as may be necessary to protect himself from loss on account of:

30.1.1 Defective work not remedied.

30.1.2 Claims filed or reasonable evidence indicating a probable filing of claims.

30.1.3 Failure of the Contractor to make payments properly to Subcontractors or for material or labor.

30.1.4 A reasonable doubt that the Contractor can be completed for the balance then unpaid.

30.1.5 Damage to another Contractor.

30.1.6 Any other violation of or failure to comply with the provisions of this Contract.

31. SALES TAX

31.1 The City of Bondurant will issue an Iowa Sales Tax Exemption Certificate to all contractors assigned to the project.

32. REMEDIES

32.1 Subject to any submission and notice provisions contained in the Contract Documents, including those in Articles 22 and 28, which shall be conditions precedent to a request for arbitration, all controversies and claims between the submitted to arbitration, at the sole discretion of the Owner. If the Owner refuses to allow arbitration of a controversy or claim, then the parties agree and consent to the jurisdiction of the Iowa District Court for Polk County.

32.2 During such time as any dispute is the subject of a demand for arbitration or a lawsuit, the contract terms shall remain in force and work shall continue as directed by the Owner or Engineer. Failure of the Contractor to continue to work as directed shall constitute a waiver by the Contractor of its claim.

32.3 All disputes allowed by the Owner to be submitted to arbitration shall be decided in accordance with the Construction Industry Arbitration Rules of American Arbitration Association ("AAA").

32.4 A written demand for arbitration shall be filed with the American Arbitration Association office in Minneapolis, Minnesota and with the other party within a reasonable time after the date of final payment to the Contractor by the Owner or after the expiration of thirty days from the rendering of a written decision by the Engineer, whichever earlier occurs.

32.5 Notwithstanding the Rules of the AAA, the arbitration panel shall consist of three persons. The Owner and the Contractor shall each appoint an arbitrator and the third shall be appointed by agreement of the appointees of the Owner and Contractor.

32.6 The arbitrators' award shall contain findings of fact and conclusions of law. The award shall be final, binding and conclusive as to findings of facts in accordance with the applicable arbitration law, but shall be reviewable for errors of law.

32.7 Nothing contained herein shall increase or otherwise expand the Owner's obligation to pay the Contractor other than documented and audited cases in accordance with the Owner's rules and regulations, regarding cost or pricing data and analysis and cost principles.

END OF SECTION

SUPPLEMENTAL REGULATIONS OF THE CONTRACT

1ST AND 3RD STREET PARKING IMPROVEMENTS, BONDURANT, IOWA
S-H PROJECT NO. 2240004020

INDEX

1. **PURPOSE**
2. **LOCATION**
3. **COPIES OF PLANS AND SPECIFICATIONS**
4. **PAYMENT**
5. **FINAL REVIEW AND ACCEPTANCE**

1. PURPOSE

1.1 SUPPLEMENTAL REGULATIONS are intended to clarify, supplemental or supersede REGULATIONS OF THE CONTRACT.

2. LOCATION

2.1 All work is located within the City of Bondurant, Iowa, in easements on private property and on property owned by the City of Bondurant.

3. COPIES OF PLANS AND SPECIFICATIONS

3.1 After award of the contract, the Engineer will furnish the Contractor up to three (3) set of Plans and Specifications. Additional copies will be furnished at the Engineer's cost of reproduction.

4. PAYMENT

4.1 Separate payment will be made for only those items specially listed in the Proposal. All other work shall be paid for by applicable Unit Prices for items to which work pertains.

5. FINAL REVIEW AND ACCEPTANCE

5.1 Notify Engineer when installation is considered complete and ready for Final Review.

5.2 Owner will accept work and make final payment to Contractor:

5.2.1 When the Engineer has certified the work of the Contractor has been reviewed and stated that the work is complete and in essential compliance with the Plans and Specifications;

5.2.2 When Contractor has filed with Owner or Engineer documents called for in Specifications;

5.2.3 When all government agencies involved have indicated, in writing that the work is complete and acceptable.

SPECIAL CONDITIONS

1ST AND 3RD STREET PARKING IMPROVEMENTS, BONDURANT, IOWA
S-H PROJECT NO. 2240004020

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1. FORM OF TECHNICAL SPECIFICATIONS
2. NOTICE TO PROCEED
3. SERVICE FACILITIES
4. MINOR WORK
5. WASTE SITES
6. WORKING DAYS
7. CONSTRUCTION FACILITIES BY CONTRACTOR
8. SOIL BORINGS
9. CONSTRUCTION ON HIGHWAY RIGHT OF WAY
10. EMPLOYMENT PRACTICES
11. WORK HOURS
12. DUST ABATEMENT
13. WATER USAGE
14. QUANTITIES
15. PROJECT FUNDING REQUIREMENTS

1. FORM OF TECHNICAL SPECIFICATIONS

1.1 Omissions of words or phrases such as “the Contractor shall”, “in accordance with”, “shall be”, “as noted on the Plans”, “according to the Plans”, “a”, “an”, “the”, and “all” are intentional, supply omitted words or phrases by inference.

1.2 “Owner”, and “City” shall mean the City of Bondurant, Iowa, acting through the City Council.

1.3 “Person” shall mean any individual, partnership, limited partnership, joint venture, society, association, joint stock company, corporation, limited liability company, estate, receiver, trustee, assignee, or referee, whether appointed by a court or otherwise, and any combination of individuals.

1.4 “Engineer” shall mean the City of Bondurant City Engineer or designated agent.

1.5 “Standard Drawings” shall mean Construction Detail Drawings bound with these Specifications.

1.6 “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.

1.7 “Or equal” shall follow manufacturers names used to establish standards and, if not stated, is implied.

2. NOTICE TO PROCEED

2.1 The Contractor shall proceed with the work and in the time set forth according to the conditions as outlined in the NOTICE OF HEARING AND LETTING upon issuance of a written Notice to Proceed.

3. SERVICE FACILITIES

3.1 The Contractor will be required to make arrangements for all services required during the construction period and pay for such services at no additional cost to the Owner.

4. MINOR WORK

4.1 Any minor work not specifically mentioned in the Specifications as shown on the Plans but obviously necessary for the proper completion of the work shall be considered as being a part of and included in the contract and shall be executed in the proper manner and the Contractor shall not be entitled to extra or additional compensation for the same.

5. WASTE SITES

5.1 All waste material shall be hauled to a construction debris recycling center or salvage yard of the Contractor's choice with the Engineer's approval or an approved hazardous waste disposal site if required. Disposal costs will be included in the Contract Cost and not paid by the City as a separate item. All salvage material payments or rebates are to be credited back to the Owner and receipts or documentation provided.

6. WORKING DAYS

6.1 Work will be permitted Monday through Fridays. A 48-hour notice shall be provided to the engineer or inspector prior to work on Saturdays or Sundays. If work is to occur during an observed holiday (included below), which requires inspection, a 1-week notice shall be provided to the engineer or inspector.

6.2 Holidays are observed as follows:

- Labor Day: Monday, September 2, 2024
- Veterans Day: Friday, November 11, 2024
- Thanksgiving: Thursday, November 28, 2024
- Friday after Thanksgiving: Friday, November 29, 2024
- Christmas Eve (observed): Tuesday, December 24, 2024
- Christmas Day: Wednesday, December 25, 2024
- New Year's Day: Wednesday, January 1, 2025
- Martin Luther King Jr. Day: Monday, January 20, 2025
- Presidents' Day: Monday, February 17, 2025
- Memorial Day: Monday, May 26, 2025
- Juneteenth: Thursday, June 19, 2025
- 4th of July: Friday, July 4, 2025

7. CONSTRUCTION FACILITIES BY CONTRACTOR

7.1 Provide a telephone, attended at all times during the working day; provide liaison between telephone and construction personnel for expeditions handling of messages.

7.2 Provide suitable storage buildings necessary for proper storage of materials and equipment.

7.3 Location of all construction facilities, including Project construction plant and yard, subject to approval by Engineer; remove all construction facilities upon completion of work.

7.4 Provide and maintain suitable sanitary facilities for construction personnel for duration of work; remove upon completion of work.

7.5 Provide fences, barricades, and/or watch persons to prevent access of unauthorized persons to site where work is in progress.

7.6 Provide telephone number(s) at which responsible representatives of Contractor can be reached evenings, weekends and holidays.

9. CONSTRUCTION ON HIGHWAY RIGHT-OF-WAY

9.1 All work in Right-of-Way of State and Federal Highways must comply with requirements of Iowa Department of Transportation.

10. EMPLOYMENT PRACTICES

10.1 Neither the Contractor nor his Subcontractors, shall employ any person whose physical or mental condition is such that this employment will endanger the health and safety of himself/herself, others employed on the Project, or the public.

10.2 The Contractor shall not commit any of the following employment practices and agrees to include the following clauses in any Subcontracts:

10.2.1 To discharge from employment or refuse to hire any individual because of sex, gender identity, sexual orientation, race, color, religion, national origin, marital status, age, veteran status, or disability unless such disability is related to job performance of such person or employee.

10.2.2 To discriminate against any individual in terms, condition, or privileges of employment because of sex, gender identity, sexual orientation, race, color, religion, national origin, marital status, age, veteran status, or disability unless such disability is related to job performance of such person or employee.

11. WORK HOURS

11.1 The Contractor will be required to limit the Contractor's work hours on the Project from 7:00 a.m. to 10:00 p.m., Sunday through Saturday unless noted otherwise. Should equipment be used which is excessively noisy and distressing to area residents, the Engineer reserves the right to limit hours of operation from 7:00 a.m. to 7:00 p.m.

12. DUST ABATEMENT

12.1 The Contractor shall make a reasonable effort to assure dust does not become a problem. The Engineer reserves the right to stop Contractor's operations whenever dust becomes a problem on the Project and direct the Contractor to revise operations to solve the dust problem. It is realized some dust on the Project is inevitable, but it must be kept to a minimum.

13. WATER USAGE

13.1 Bondurant Public Works will provide the Contractor a nominal amount of water on the Project free of charge for watering sod only, with the following requirements:

13.1.1 The water is to be metered and the Contractor must obtain the meter from the Bondurant Public Works and a refundable meter deposit is required.

13.1.2 The Contractor will abide by rules and regulations of bulk water usage as prepared by Bondurant Public Works.

13.1.3 The Contractor will only use hydrants that have been previously approved by the Bondurant Public Works for bulk water usage.

13.1.4 The Contractor shall not use water from private residential or business hose bibs, without the written consent of the private owner. Any such agreements must be filed with the Engineering prior to water usage.

13.1.5. The water provided on the Project free of charge will consist of 870 gallons of water per square (100 square feet) of sod installed on the Project. Additional water usage shall be the sole responsibility of the Contractor. Additional water shall be paid for at the current Bondurant Public Works rate.

13.1.6 The Contractor must notify Bondurant Public Works prior to using the assigned water meter on any other project.

14. QUANTITIES

14.1 The Contractor is to realize some of the quantities on this Project are best estimates and may vary from actual conditions at time of construction of the Project. Quantities must be regarded as approximate only and are given as a guide to the Bidder and for comparison of Bids. The City reserves the right to increase or diminish these quantities within reasonable limits and the Contractor will be paid for only as much work as the contractor is required to do by the City at the unit price stated in the Proposal.

15. PROJECT FUNDING REQUIREMMENTS

15.1 Division 1 of the project contains federal funding through the Land and Water Conservation Fund. As such the Build America, Buy America Law DOI Small Grants Waiver applies to Division 1 of the project.

15.2 The contractor is expected to promote participation of disadvantaged business enterprises as suppliers, manufactures and subcontractors through a continuous, positive, result-oriented program. **No TSB Goal has been assigned to this project.**

15.2.1 Contractor shall complete TSB Pre-Bid Contact Information Form and included in the bid submission. Refer to Appendix A for TSB Contract Provision and Pre-Bid Contact Form.

PLAN LIST

1ST AND 3RD STREET PARKING IMPROVEMENTS, BONDURANT, IOWA
S-H PROJECT NO. 2240004020

1. PLANS

1.1 The work shall conform to the following Drawings (bound herewith) and Detail and Standard Drawings (bound herewith), all of which constitute the "Plans" and are an integral part of the Contract Documents.

Index of Sheets	**Drawing Number**	**Revision Number**
Cover Sheet	C000	
Construction Notes	C001	
Estimated Project Quantities	C002	
Estimate Reference Notes	C003	
Demolition Plan – 3rd Street	CD01	
Demolition Plan – 1st Street	CD02	
Site Plan – 3rd Street	C101	
Site Plan – 1st Street	C102	
Grading Plan – 3rd Street	C201 - C202	
Grading Plan – 1st Street	C203	
Utility Plan – 3rd Street	C301	
Construction Details	C501 – C502	
Landscape Plan	L101 – L102	
Electrical General Information	E000	
Electrical Site Plan – 3rd Street	E101	
Electrical Site Plan – 1st Street	E102	
Electrical Schedules	E500	

DETAILED SPECIFICATIONS

1ST AND 3RD STREET PARKING IMPROVEMENTS, BONDURANT, IOWA
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8. STANDARDS AND CODES
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15. STORAGE OF MATERIALS AND EQUIPMENT
16. HISTORICAL AND ARCHAEOLOGICAL AUDITS
17. EROSION CONTROL AND NPDES STORMWATER PERMIT
18. LANDSCAPE PLANTING

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 required 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; Engineer's interpretation shall be accepted as final.

4. WORK INCLUDED

4.1 Construct Improvements as set out in NOTICE OF HEARING AND LETTING and these Contract Documents.

5. STARTING AND COMPLETION TIMES

5.1 Start work within 10 calendar days after date set forth in written Notice to Proceed. It is anticipated that the Notice to Proceed will be issued within 30 calendar days after the award of contract. Complete work within the time set out in the NOTICE OF HEARING AND LETTING.

6. INFORMATION FOR ENGINEER

6.1 After award of Contract submit following information and drawings for Engineer's review. Total number of reviewed copies required for distribution: four (4) and all copies required by Contractor.

6.1.1 Manufacturer's Specifications and catalog data for manhole steps, covers and frames, castings, and other special items.

6.1.2 Shop Drawings showing reinforcing steel details, structural steel and supports.

6.1.3 Such other information as Engineer may request.

6.2 Within 15 days after award of contract, provide construction schedule showing dates of starting and completing various portions of work. After initiation of construction, provide bi-weekly written report of construction schedule for following 2-week period.

6.3 Provide two (2) copies of the following information:

6.3.1 Purchase orders without prices and subcontracts with prices.

6.3.2 Shipping papers for all material.

6.3.3 All material test reports.

6.3.4 Concrete mix design; submit 8 days before proposed mix is to be used.

7. PLANS AND SPECIFICATIONS

7.1 Engineer will furnish up to three (3) sets of Plans and Specifications after award of Contract. Contractor shall compensate Engineer for printing costs for additional copies required.

7.2 Subcontractors and suppliers will be furnished copies of Plans and Specifications only at request of Contractor. Engineer will be compensated for printing costs by Contractor.

7.3 Provide one (1) set of Plans and Specifications for each foreman or superintendent in charge of each crew on job.

8. STANDARDS AND CODES

8.1 Do work in accordance with best present-day installation and construction practices.

8.2 Conform with and test materials in accordance with applicable sections of latest revisions or tentative revisions of following codes and standards unless specifically noted to the contrary.

8.2.1 American Association of State Highway and Transportation Officials (AASHTO).

8.2.2 American Concrete Institute (ACI).

8.2.3 American Institute of Steel Construction (AISC).

8.2.4 American National Standards Institute (ANSI).

8.2.5 American Society of Testing and Materials (ASTM).

8.2.6 American Water Works Association (AWWA).

8.2.7 American Standards Association (ASA).

8.2.8 American Welding Society (AWS).

8.2.9 Federal Specifications (FS).

8.2.10 Iowa Statewide Urban Design and Specifications (SUDAS) 2023 Edition.

8.2.11 Iowa Occupational Safety and Health Act of 1972 (Chapter 83, Code of Iowa 1987) (IOSHA).

8.2.12 Manual of Accident Prevention in Construction by Associated General Contractors of America, Inc. (AGC).

8.2.13 Occupational Safety and Health Act of 1970 (Public Law 91-596) (OSHA).

8.2.14 Manual on Uniform Traffic Control Devices (MUTCD).

8.2.15 American Disabilities Act (ADA).

8.2.16 Standards and Codes of the State of Iowa and applicable local standards and codes of the City of Bondurant and Polk County.

8.2.17 Other standards and codes which may be applicable to acceptable standards of the industry for equipment, materials and installation under the Contract.

9. MATERIALS TESTS

9.1 Includes all materials tests or tests specified hereinafter.

9.2 Employ testing laboratory approved by Engineer to show that construction materials comply with Specifications.

9.3 Incorporate no materials in work until laboratory tests have been furnished which show that materials comply with Specifications.

9.4 All materials subject to sampling, testing, inspection and rejection at site by Engineer.

9.5 Incorporate no material in work until laboratory tests have been furnished which show materials comply with specification.

9.6 Laboratory tests for materials:

9.6.1 Reinforced concrete pipe: Test two (2) pieces of each diameter of each class furnished; check reinforcing size and placement; ASTM C76.

9.6.2 Vitrified clay pipe: Test two (2) pieces of each diameter furnished, ASTM C301.

9.6.3 Ductile iron pipe: Certify that pipe conforms to ANSI A21.51.

9.6.4 Steel pipe: Certify that pipe conforms to ASTM A53.

9.6.5 Other pipe: Certify that pipe conforms to applicable Specifications.

9.6.6 Cement: Bin sample for entire requirement, ASTM C150.

9.6.7 Concrete aggregates: One (1) sample of each, ASTM C33.

9.6.8 Reinforcing steel: Furnish original and one copy of certified test report by manufacturer.

9.6.9 Welded wire fabric: Furnish original and one copy of certified test report by manufacturer.

10. FIELD TESTS

10.1 Notify Engineer when installation is complete and ready for testing.

10.2 Owner will retain testing laboratory and conduct all field tests and determine location of tests.

10.3 If test results do not meet those specified, make necessary corrections and repeat tests to demonstrate that test requirements are satisfied.

11. RESPONSIBILITY OF CONTRACTOR

11.1 Protection of the 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 Cooperate with Owner, Engineer and representative 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.

11.5 Keep cleanup current.

11.6 Comply with all Federal, State of Iowa, Polk County and City of Bondurant Laws and Ordinances.

11.7 Keep existing sewers in continuous operation without bypassing.

12. TEMPORARY WORK

12.1 Make all temporary service connections necessary for maintaining utility service during the course of the work.

12.2 Construct temporary drains to keep work in the dry; maintain new improvements as directed by Engineer.

12.3 Construct temporary asphalt surfaces as directed, in order to enhance traffic control.

13. TRAFFIC CONTROL

13.1 Erect and maintain barricades and lights and/or provide watchmen for protection and warning of pedestrians and vehicles. All barricades, lights and/or watchmen at expense of Contractor. Maintenance shall include sign washing as required by the Engineer.

13.2 Location and arrangement: Conform to Ordinances, Laws and MUTCD; meet approval of Owner and Engineer.

13.3 Responsibility: Maintain, control, and protect traffic within construction area including side street crossings, temporary run-arounds, use of one or more lanes and related operations and detours outside construction area.

13.4 Closing or partially closing streets: Close or restrict traffic in streets only with permission of Engineer; provide for maximum safety and convenience of public; open street when work is complete or as directed by Engineer. Access to private property must be maintained during construction.

13.5 Emergency traffic: Provide continuous access for police, fire and emergency vehicles.

13.6 Take every precaution to protect pedestrian and vehicle traffic.

14. REMOVAL AND REPLACEMENT OF IRRIGATION SYSTEMS

14.1 Irrigation lines and sprinkler heads may exist along this project. It is the Contractor's responsibility to determine the location and types of irrigation systems to be encountered and the total work to be completed under this paragraph.

14.2 Remove parts of irrigation systems within as necessary to complete the grading, paving and utility adjustments. Cap off ends or modify systems where removals occur to allow the system's owner continued use of the remaining system. Notify owner of work completed so that necessary repairs can be completed by them.

15. STORAGE OF MATERIALS AND EQUIPMENT

15.1 Limited storage space for materials and equipment will be available at project sites and along easements; string pipe within construction easements provided.

15.2 Storage areas shall be subject to approval of Engineer.

15.3 Store materials and equipment in manner which will preserve their quality and fitness.

16. HISTORICAL/ARCHAEOLOGICAL AUDITS

16.1 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.

17. EROSION CONTROL AND NPDES STORMWATER PERMIT

17.1 This project is subject to Section 402 (b) of the Clean Water Act and Iowa Code Section 455B.174 and 567 IAC 64.4 (projects disturbing one (1) or more total acres) and requires issuance of a National Pollution Discharge Elimination System (NPDES) General Permit No. 2, or an individual NPDES Permit for Stormwater Discharge Associated with Industrial Activity for Construction Activities.

17.2 Contractor shall be the responsible party for obtaining authorization, implementing and complying with a General Permit No. 2 for Stormwater discharge for the construction activities associated with the project. Contractor shall be the permittee and solely responsible for compliance and costs associated therewith, including those specifically referenced herein. Contractor shall not rely on any stormwater discharge permitting or efforts already undertaken by the City of Bondurant for this project, including but not limited to those referenced herein. Contractor will be responsible for preparation of a Storm Water Pollution Prevention Plan.

17.3 Contractor shall be responsible to retain or engage persons knowledgeable in the preparation of a Storm Water Pollution Prevention Plan. The Storm Water Pollution Prevention Plan shall be prepared by the Contractor in a manner that complies with all Iowa Department of Natural Resources applicable requirements.

17.4 Contractor shall be the responsible party for publishing notice in newspapers as required for General Permit No. 2. The Contractor will be the responsible party for preparing and submitting Notice of Intent to the Iowa Department of Natural Resources for General Permit No. 2. The Contractor shall be responsible to pay all fees and costs associated with the preparation of the Storm Water Pollution Prevention Plan, publication of the notice and filing of Notice of Intent for coverage under General Permit No. 2.

17.5 The Contractor is responsible for implementation, inspection, maintenance, and monitoring compliance with the Storm Water Pollution Prevention Plan requirements and General Permit No.2.

17.6 All subcontractors must sign the NPDES certification statement before conducting any work at the site. The certifications must be signed in accordance with the signatory requirements found in the permit and must be incorporated in the Storm Water Pollution Prevention Plan.

17.7 In the event that the Iowa Department of Natural Resources considers the Owner to be a co-permittee, the Contractor agrees to indemnify and hold harmless the Owner for all issues and activities relating to the Storm Water Pollution Prevention Plan and permit including, but not limited to fines and penalties.

17.8 References to silt fences and other erosion control devices or measures, if any, in the specifications or on the plans are intended to illustrate typical erosion control measures to be implemented by the Contractor. References in the plans or specifications shall not be considered a part of the Storm Water Pollution Prevention Plan. The occasion that erosion control measures or devices are not indicated on the plans or in the specifications does not waive the Contractor's responsibilities associated with the NPDES Storm Water permit nor the Storm Water Pollution Prevention Plan.

17.9 Contractor is responsible for developing the phasing and staging plans for implementation of the Storm Water Pollution Prevention Plan.

17.10 The Contractor is responsible for filing the Notice of Discontinuation of General Permit No. 2 after vegetative growth has been re-established to the required levels of permit.

17.11 The Contractor is responsible for all fees and fines associated with the permit and permit violations.

17.12 The Contractor is responsible for maintaining a copy of the Storm Water Pollution Prevention Plan on the project site and for all site inspection and monitoring required by the permit.

17.13 The Contractor is responsible to complete all requirements for NPDES General Permit No. 2 in a timely manner to avoid any delays in start of construction. No construction activity shall commence until General Permit No. 2 has been issued and any requirements contained therein have been met. No extension of time for completion of construction will be granted for delays experienced in issuance or failure to meet requirements of the General Permit No. 2 in a timely manner.

17.14 The Contractor is responsible for providing project copies of the Storm Water Pollution Prevention Plan and any updates, inspection reports, and Notice of Discontinuation to the City in a timely manner.

18. LANDSCAPE PLANTING

PART 1 GENERAL

1.1 WORK INCLUDED

A. The Contractor shall furnish all labor, materials, tools, equipment, supervision, and services necessary to install plant material, preparation of soil, fine grading, planting, mulching, landscape stone, guying, pruning, watering, edging, and the proper disposal of any excess earth or debris, maintenance all in accordance with the accompanying Drawings and these Specifications.

1.2 QUALITY ASSURANCE

A. Regulatory Requirements

1. Comply with applicable requirements of Federal, State, and Local laws, regulations and codes having jurisdiction at the project site. The Contractor shall take out all required permits, arrange for all necessary inspections and shall pay any fees and expenses in conjunction with the same as a part of the work under this section.
2. Contractor shall be responsible for certificates of inspection of plant material that may be required by Federal and Local authorities to accompany shipments of plants.
3. The entire installation shall fully comply with all local and state laws and ordinances and with all the established codes applicable thereto.
4. Local zone hardy plant material shall be utilized.

B. Reference Standards

1. "Standardized Plant Names" by the American Joint Committee of Horticultural Nomenclature.

a. "American Standard of Nursery Stock" by the American Association of Nurseryman current edition. Standards: All plant materials, methods, etc., are to conform to the Standards of the American Association for Nursery Stock. 2In the event there is a discrepancy between these standards and this Specification, the most restrictive requirement shall govern.

b. Nomenclature: The names of plants required under this Contract conform to those given in the “Standardized Plant Names”, current edition, prepared by the American Joint Committee on Horticultural Nomenclature. Names of varieties not included therein conform generally with names accepted in the nursery code.

c. American National Standards Institute (ANSI); Publication ANSI/AHIA Z60.1-current edition.

C. Inspection of Plant Material

1. The nursery supplier shall tag and photograph all plant material to be delivered to the site. Photographs shall be sent to the Owner and/or Owner’s Representative and Contractor for review and coordination.

2. At the time the plant material is delivered to the job site, the Contractor shall be responsible to inspect plant material and reject any material that does not meet standards detailed in ANSI Publication ANSI/AHIA Z60.1-current edition standards and Section 2.4 of this specification. Plant material shall be unwrapped in order to thoroughly inspect trunk, bark, branches, rootball, leaders and form. If material is rejected it shall be sent back to the nursery at the time of delivery at no additional charge to the owner or contractor.
3. The Owner and/or Owner's Representative shall be notified of plant inspection times at least 3 days prior by the Contractor once plant delivery has begun.

D. Coordination

1. Work in conjunction with other trades as directed, taking all reasonable precautions to avoid disturbance or interference with any other operation or installation on the site. Contractors shall be responsible for the cost of replacing any material damaged as a result of his/her negligence.

E. Points of Inspection: The Contractor shall notify the Owner and/or Owner's Representative at least five (5) days prior to start of work, inspections, or delivery to the Project Site to allow for inspection scheduling for each of the following work activities listed below. The notice must be sent via confirmable email or facsimile transmission to the Owner and/or Owner's Representative.

1. Pre-Installation Meeting: The Contractor shall meet with the Owner and/or Owner's Representative to review schedule, submittals, and project expectations. This meeting shall occur at least 10 days prior to the start of any work or deliveries to the job site.
2. 1st Inspection Meeting: The Contractor shall notify the Owner and/or Owner's Representative 5 days in advance for review on plant stock delivery, balled and burlapped tree planting procedures, plant bed preparation, and other review. This meeting shall occur before planting begins to ensure beds are correct and the proper planting procedures are followed.
3. Plant stock delivery: Contractor shall notify the Owner and/or Owner's Representative at least two (2) days in advance of delivery of plant material. The Owner and/or Owner's Representative must approve all plant material before installation.
4. Progress Inspections: The Owner's Representative will observe the site to monitor correct planting procedures, coordinate on unexpected site conditions, and inspection of additional plant stock on site.
5. Punch List Inspection(s): A punch list by the Landscape Architect/Owner's Representative shall be created and sent to the Contractor to coordinate any clean up, plant replacement, and repair. Refer to PART 3 -Section 3.5 for requirements.
6. One Year Warranty Inspection: Refer to PART 3 -Section 3.7

1.3 SUBMITTALS

A. Contractor shall submit the following to the Owner and/or Owner's Representative at least thirty (30) days prior to start of the work.

1. The source and supplier of all plant material, planting schedule, fertilizer, hardwood mulch, compost and other materials along with the type of equipment to be used on this project.

B. Grower's Certificates: Proof of certification of Nursery Stock Grower and Dealer Inspection as well as any other certificates required by governmental authorities.

C. Fertilizer Manufacturer's Certificate of Compliance: Written documentation verifying compliance with chemical analysis of fertilizer furnished. Submit to Owner and/or Owner's Representative 5 days prior to delivery.

D. Substitutions: Substitutions of plant material will not be permitted unless authorized in writing by the Owner and/or Owner's Representative. If proof is submitted that any plant specified is not obtainable, a proposal will be considered for use of the nearest equivalent size or variety with corresponding adjustment of Contract Price. Such proof shall be substantiated and submitted in writing to the Owner and Owner and/or Owner's Representative at least thirty (30) days prior to start of the work under this Section. These provisions shall not relieve the Contractor of the responsibility of obtaining specified materials in advance if special growing conditions or other arrangements must be made in order to supply specified materials.

1.4 STORAGE, HANDLING, AND DELIVERY

A. Storage of Materials

1. All materials delivered to the job shall be stored so as to keep them in new condition and free from deterioration. Fertilizer, etc., shall be stored in temporary sheds off-site at Contractor's expense.

2. All nursery stock must be kept secure, cool, and moist while being stored. If storing B&B plants on site, store in either a refrigerated truck or heeled into soil or mulch.

B. Packaged Materials

1. Deliver packaged materials in unopened containers showing weight, analysis, and name of manufacturer. Protect materials from deterioration during delivery and while stored at site.

C. Plant Material

1. Plants shall not be delivered to the site until the corresponding beds are fully prepared and approved. Vegetated material shall be inspected upon delivery at job site by the Contractor. All materials must arrive with identification labels calling out the size and species name. All plant material is subject to rejection by the Contractor, Owner and/or Owner's Representative either at time of delivery or at the 1 year warranty inspection, provided it does not comply with the requirements stated herein. Any rejected stock shall be immediately removed from the premises and replaced with approved stock.

2. All plant tags shall stay on plants through planting and shall NOT be removed until Owner and/or Owner's Representative has performed the initial inspection. The plant tags shall be removed, collected, and provided to the owner once Initial Inspection is completed.

1.5 JOB CONDITIONS

A. Examination of Site:

1. The bidder must acknowledge that he has examined the site, Drawings and Specifications and the submission of a quotation shall be considered evidence that examinations have been made.

a. Field Conditions: The Contractor shall verify drawing dimensions with actual field conditions and inspect related work and adjacent surfaces. The Contractor shall report to the Owner and/or Owner's Representative all conditions which prevent proper execution of this work. The Contractor agrees to be fully responsible for any and all damage which might be occasioned by the Contractor's failure to exactly locate and preserve any and all utilities, structures, and geogrid reinforcement.

1) Soil moisture must be at or below field capacity to avoid destroying the soil structure before any work begins.

1.6 SEQUENCING/SCHEDULING

A. Planting Time: Proceed with and complete planting as rapidly as portions of the site become available, working within seasonal limitations for each kind of landscape work required.

B. Allowable Planting Dates:

1. Evergreen Plants: September 1 to October 15 and prior to June 1, but not after candles exceed 1 inch.
2. Deciduous Plants (Balled and Burlapped and Container): August 15 to November 15 or the 1st frost of the season and in the spring prior to June 1
3. Perennials: August 15 to October 15 and prior to June 1.
4. Weather Restrictions: Planting may be conducted under unseasonable conditions, except in weather below 32 degrees or above 90 degrees. No variance from plant warranty or other requirements will be given for plants installed outside the specified period.

1.7 MATERIALS CLEAN-UP

A. The Contractor shall keep the premises free from rubbish and all debris associated with their work at all times and all unused materials and debris shall be removed from the site.

PART 2 MATERIALS

2.1 TOPSOIL

A. Refer to Plan Notes.

B. Topsoil shall be fertile, natural topsoil, typical of the locality. Stockpiled topsoil may be used if approved by the Owner and/or Owner's Representative. It shall be free of subsoil, slag, clay, stones, lumps, sticks, plants or their roots, toxic substances or other extraneous matter that may be harmful to plant growth or would interfere with future maintenance.

2.2 FERTILIZER

A. All fertilizers shall be horticultural grade complete formula fertilizers and shall conform to the applicable State Fertilizer Laws. Fertilizer shall consist of uniform dry granulated nutrients produced by mining and manufacturing processes and commonly used in the agricultural or lawn care industries. It shall contain the three major plant nutrients of nitrogen, phosphorous, and potassium. Commercial fertilizer may be furnished as a homogenous or blended form. Submit product information for Owner and/or Owner's Representative approval.

2.3 PLANT MATERIALS

A. Plant Schedule: A list of plant materials is scheduled on the Drawings. In the event of any discrepancy between this schedule and the Plan Drawing showing the plants, the Plan Drawing shall govern.

B. Certification of inspection of plant materials required by Federal, State, or other governmental agencies to accompany all shipments to be furnished to the Owner and/or Owner's Representative. Plants shall have been grown under climatic conditions similar to those in the locality of the project.

C. Planting stock shall be well-branched and well formed, sound, vigorous, healthy, free from disease, sun-scale, windburn, abrasion, and harmful insects or insect eggs; and shall have healthy, normal unbroken root systems. Deciduous trees and shrubs shall be symmetrically developed with branches of uniform growth, with straight trunks and central leaders, and free from objectionable disfigurements. One-sided branching plant material will be rejected.

D. Evergreen trees and shrubs shall have well-developed symmetrical tops with typical spread of branches for each particular species or variety. Evergreen leaders shall be straight and central. Evergreen trees and shrubs shall not be sheared.

E. Stock Sizes: All stock measurements - caliper, height, branching level, number of canes, ball sizes shall be in strict accordance with the latest edition of the American Standard for Nursery Stock, unless otherwise noted on the plans. Plants used on the project shall meet or exceed all minimum requirements indicated in the size, condition, and remarks sections of the planting legend on the plan sheets.

F. Provide plants free of the following:

1. Harmful insects, insect eggs, borers, and all forms of infestation
2. Plant diseases and moldy or dried roots
3. Damage to trunk, bark, branches, leaders, root systems, or cut-leaders
4. Defects, disfiguring knots, sunscald injuries, and frost cracks
5. Rodent or deer damage to bark and buds

G. Plants with broken or cut back terminal leaders will be rejected. Plants with crooked or split leaders will be rejected.

H. All stock shall be balled and burlapped or container grown stock. Bareroot stock of any kind is unacceptable.

I. All plant material must be watered the same day it is planted in order to comply with these Specifications.

J. Delivered trees with more than 4" or more of soil over the root flare shall be rejected. If after carefully removing the soil over the trunk flare unveils encircling or excessive roots and/or unhealthy conditions the tree will be rejected. The trunk of the tree shall not be more than 10% off center within the rootball. The Contractor, Owner and/or Owner's Representative may open soil balls to inspect for root condition, size, balance, and trunk location within the ball.

2.4 MULCHES

A. Double Shredded Hardwood Mulch

1. Shredded hardwood mulch as approved by the Owner and/or Owner's Representative. No artificially colored mulch will be accepted.

2. Provide 4" depth double shredded hardwood mulch for trees planted outside of planting beds.

2.5 WEED BARRIER & WEEDING

A. Provide a chemical base weed prevention plan for all planting beds. Apply once installation is complete.

B. Contractor shall be responsible for weeding of vegetated areas and tree rings until acceptance.

2.6 STAKING MATERIALS

A. Stakes for tree support shall be steel "T" bar fence post, 6' long, painted dark green with the top 6” painted white.

B. Hose shall be reinforced garden hose no less than ½” inside diameter or fabric straps or other material approved by the Owner and/or Owner’s Representative. Provide hose of adequate length to prevent contact of staking or guying wire with tree trunk.

C. Provide wire of sufficient gauge to resist breaking during high winds.

2.7 WATER

A. Water shall not contain elements toxic to plant life. It shall be the Contractor’s responsibility to obtain water to be used for a temporary watering system of plant material. The Contractor shall coordinate with the Owner to locate the best area for water connection.

B. Provide temporary watering through the growing season to establish plant material and as needed through the warranty period to keep plant material in a thriving and healthy condition.

C. The transition of maintenance responsibilities shall be summarized by the Contractor and provided in written form to the Owner once the Contractor has fulfilled work requirements to ensure watering and maintenance care keeps plants in a thriving condition.

PART 3 EXECUTION

3.1 GENERAL PREPARATION

A. Protection of Existing Vegetation

1. All areas under drip lines of existing trees shall be kept free of construction equipment, trailers, material storage, and vehicles.

2. Exercise extreme care when working around existing trees to remain. No soil scarification or compaction from construction vehicles shall occur under any existing critical root zone.

B. Clearing

1. All planting bed areas and areas of turf establishment are to be cleared by the Contractor.

2. Clearing shall consist of the satisfactory removal and disposal of brush, rubbish, and other vegetative growth occurring within all proposed turf and planting bed areas unless turf is being over-seeded. All debris associated with this work shall be gathered and removed from the project by the Contractor.

3.2 TREE, SHRUB, AND PERENNIAL INSTALLATION

A. All planting shall be performed by personnel familiar with the accepted procedure of planting and under the constant supervision of a qualified planting foreman.

B. All planting is to be done as shown on drawings and as specified herein and in strict accordance with standard horticultural practices.

C. Preparation of Planting Mixture and Beds

1. Plant material locations shall be staked on the project site by the Contractor and approved by the Owner and/or Owner's Representative before any plant pits or beds are excavated. Plant material locations and bed outlines may be adjusted by the Owner and/or Owner's Representative to meet field conditions.

2. Mix recommended soil amendments and fertilizers with topsoil at recommended rates. Delay addition of fertilizer if planting mixture will not be used within two (2) days.

3. The Contractor shall be responsible for testing percolation rates to measure adequate drainage in the planting area. Where trees, shrubs, or perennials are planted a test bed shall be prepared with the location selected by the Owner and/or Owner's Representative. A percolation test shall be conducted by filling a 16" deep planting hole with water and measuring the time it takes for the water to drain. Adequate drainage will be considered equal to or greater than a percolation rate of ½" per hour. In case of inadequate drainage, the Owner and/or Owner's Representative shall be notified. Beds shall be free of rocks larger than one inch diameter, weeds, scrap material, and objectionable materials. Beds shall also demonstrate proper incorporation of soil additives.

D. Installation of Trees, Shrubs and Perennial.

1. Planting pits shall be excavated to produce vertical sides and flat bottoms. Scarify side walls to alleviate glazing and loosen any hard subsoil in bottom of pit. Minimum pit sizes shall be as shown on drawings.

2. Dispose of all subsoil, clay, and rock (off-site) removed from planting excavations. The top six (6) inches of topsoil excavated from the planting pit, if free from subsoil, clay, rocks, roots, or other debris, may be utilized in the topsoil mixture as specified.

3. Setting Plants

a. The Contractor shall install the first balled and burlapped tree with the Owner and/or Owner's Representative present to ensure proper planting methods. Refer to planting details and specifications for the proper planting procedure of hole preparation and removal of all twine, wire cage and other trappings of the root ball. Root ball crowns shall also be set so that they are 2" higher than the surrounding grade to ensure the root flare is slightly above grade.

b. Balled and burlapped and container grown plants shall be handled and moved only by the ball or container. Remove all the wire cage and burlap except for 1/3 of the bottom before placing root ball in the ground. Inspect rootball to ensure specifications are met in Section 2.4. Plants shall be set plumb and held in position until a sufficient quantity of planting soil mixture has been firmly placed around roots or ball. Once the tree is stabilized in the planting hole, carefully remove burlap, twine, and all other trappings as much as possible before partially backfilling. Trees shall be watered in allowing water to completely soak into ground after partial backfill.

c. The remainder of backfill of planting soil mixture shall be tamped and watered.

d. Container-grown stock shall be removed from containers without damaging plant or root system. Planting shall be completed as specified for balled or burlapped plants.

4. Mulching

a. Double shredded hardwood mulch for all tree plantings shall be (4") in depth.

b. Mulching shall take place within 48 hours after planting.

c. Mulch shall be kept off walls, sidewalks, light standards, and other structures.

d. The top of all areas of mulch cover shall be 1/2" below the top of adjacent curb, walk, wall, wall cap, or edge of pavement.

e. Double shredded hardwood mulching shall be considered incidental to the overall project. No additional compensation shall be allowed.

5. Staking

a. Plants shall be staked as indicated on plans within 24 hours of planting.

b. Stakes shall be driven vertically into the ground to a depth specified in details and in such a manner as not to damage the ball or roots.

c. All deciduous trees greater than two- and one-half inches (2 1/2") caliper shall be staked with three metal “T” stakes, spaced equal distant around the tree.

d. All evergreen trees shall be staked with two metal “T” stakes, spaced on either side of the tree.

e. Staking shall be considered incidental to the overall project. No additional compensation shall be allowed.

6. Pruning: The Contractor shall prune new plant material in the following manner: Dead and broken branches shall be removed. Evergreen plants shall not be thinned out or sheared. Shrubs shall not be sheared. All plants shall meet or exceed the minimum requirements indicated in the size, condition, and remarks sections of the planting legend on the plan sheets after pruning has taken place. Cuts shall be made with sharp instruments and shall be in compliance with ANSI A300 Pruning Standards. "Headback" cuts at right angles to line of growth shall not be permitted. All trimmings shall be removed from the site.

a. Pruning shall be considered incidental to the overall project. No additional compensation shall be allowed.

7. Wrapping: The Contractor shall wrap trees in the fall to help prevent sun scald and frost cracks unless otherwise directed by Owner and/or Owner's Representative. 4-inch-wide bituminous impregnated tape, corrugated or crepe paper, specifically manufactured for tree trunk wrapping, having qualities to resist insect infestation, or similar material approved by the Owner and/or Owner's Representative. Wrapping shall overlap about 33 percent with each turn and fastened with twine. All wrap and twine shall be removed in spring.
8. Watering: The Contractor is responsible for maintaining adequate, but not excessive, soil moisture for plants installed. Watering must respond to varying seasonal conditions, soil types, and drainage. Water must thoroughly soak the entire root area rather than dampen the soil surface.
9. Initial inspection of the planting to determine completion of contract work, exclusive of possible replacement of plants, will be made by the Owner and/or Owner's Representative upon completion of the work. All plants shall be alive, healthy and in a vigorous growing condition at the time of initial acceptance. The Contractor shall notify the Owner and/or Owner's Representative when initial installation is complete.

3.3 MAINTENANCE

A. Begin immediately following installation of plant material and continue until Owner's Representative issues the Notice of Acceptance. Contractor retains responsibility for maintenance during the period between the punch list inspection and completion of any punch list items. The Owner will only assume maintenance responsibilities upon issuance of Notice of Acceptance or Notice of Conditional Acceptance, if applicable.

B. Include weeding, watering, re-mulching, resetting to proper grades and other related operations.

C. Contractor shall be responsible for effective chemical or mechanical weed control from the time they move on site until Owner's Representative issues the Notice of Acceptance. At no time shall weeds in plant beds be allowed to grow over one foot in height or produce seeds. All cut or pulled weeds shall be removed from site and disposed of properly.

3.4 ACCEPTANCE

A. Planting acceptance shall be based upon the following criteria:

1. All requirements for the completed installation and maintenance have been provided.
2. Clean-up operations are completed.
3. All required submittals have been received by the Owner, including maintenance instructions.
4. Plants shall be well-branched and well-formed alive, healthy, and in a vigorous growing condition at the time of acceptance.

B. Seven (7) calendar days prior to the anticipated date of punch list inspection, submit written notice requesting inspection to the Owner's Representative.

C. The Owner, Contractor, and Landscape Architect will complete a punch list inspection of the landscape to determine completion of contract work. Punch list inspection will not be conducted unless all items of work as outlined in PART 3 - EXECUTION have been completed.

D. After the punch list inspection, the Contractor will be notified in writing by the Owner's Representative, of any deficiencies in the requirements for completion of the work.

E. The Contractor will complete/resolve all of the items on the punch list and submit written notice requesting follow up inspection to the Owner's Representative seven (7) calendar days prior to the anticipated date of a follow up inspection.

F. The Owner, Contractor, and Landscape Architect will complete a follow up inspection of the landscape to determine completion of all punch list items. If all items are complete, the Owner's Representative will issue a written Notice of Acceptance. If not, the Contractor will be notified in writing by the Owner's Representative, of any remaining deficiencies in the requirements for completion of the work and another follow up inspection will be scheduled. The Landscape Architect will perform no more than two inspections to determine whether the Work or a designated portion thereof has attained Final Completion in accordance with the Contract Documents. The Owner is entitled to reimbursement from the Contractor for the amounts paid to the Landscape Architect for any additional inspections.

G. At the time of the Notice of Acceptance, the 1 year warranty inspection will be scheduled by the Owner's Representative.

3.5 PARTIAL AND CONDITIONAL ACCEPTANCE

A. There may be instances where the Contractor and Owner agree that a specified portion of the site should undergo the punch list inspection process with the intent of the Owner granting acceptance of that portion of the site, occupying it for the Owner's use and accepting maintenance responsibilities. This constitutes a Partial Acceptance.

1. The process for completing the punch list inspection and issuance of the Notice of Partial Acceptance is the same as described in Section 3.5 but only applies to that portion of the site as agreed to by the Owner and Contractor.

2. An exhibit with the boundaries of the partial acceptance clearly illustrated will be prepared by the Owner's Representative and will be attached to the Notice of Acceptance.

3. Upon issuance of the Notice of Acceptance, the Owner will assume maintenance responsibilities for that area of the site and the one year plant warranty period will begin for all plants within the defined area.

4. By implication, the remainder of the work must undergo the same process once judged to be complete by the Contractor and another Partial Acceptance must be achieved.

B. There may be instances where the Contractor may choose to seek Conditional Acceptance of the work or portions of the work. This would apply to instances where plants have been installed but for some reason do not meet all of the requirements of the specifications such as a variance in size or the plant material was installed outside the approved planting dates. In these instances, the Owner may choose to grant the Conditional Acceptance with the understanding that the plant material will be re-assessed at a future date and either fully accepted or rejected.

1. This provision will only be allowed at the discretion of the Owner and should be used only in extremely unusual circumstances. This provision is not included to allow or encourage the Contractor to install plant material outside the approved planting dates.

2. The process for completing the punch list inspection and issuance of the Notice of Conditional Acceptance is the same as described in Section 3.5 but only applies to the specific portions of the work as agreed to by the Owner and Contractor. The process for achieving Acceptance for the remainder of the work should be proceeding in parallel with this process.
3. An exhibit clearly defining which portions of the work are included will be prepared by the Owner's Representative and will be attached to the Notice of Conditional Acceptance. The Notice will also clearly set a date by which a follow up inspection will be made.
4. Upon issuance of the Notice of Conditional Acceptance, the Owner may or may not assume maintenance responsibilities for that portion of the work. This is a detail that will need to be worked out between the Owner and Contractor and will be documented in the Notice of Conditional Acceptance.
5. On or before the date specified in the Notice of Conditional Acceptance, the Owner, Contractor, and Landscape Architect will complete a follow up inspection to determine if the work in question meets the requirements for acceptance.
    a. If so, the original Notice of Acceptance for the remainder of the site will be amended to include the work in question and beginning date of the warranty period for those plants shall be deemed to be the same as the remainder of the project.
    b. If not, the contractor shall follow the same procedures for rectifying the non-compliant work and re-inspection as outlined in Section 3.5. One the work has been corrected and verified, a Notice of Partial Acceptance will be issued for that portion of the work and the one year plant warranty period will begin for all plants included in that portion of the work.

3.6 WARRANTY AND REPLACEMENT

A. Plant material shall be warrantied for 1 full year after issuance of the Notice of Acceptance and shall be alive, in good health, and in satisfactory condition at the end of warranty period.

B. Any plant required under this Contract that is dead or not in a vigorous, thriving condition, as determined by the Owner's Representative at the time of warranty inspection, will be removed from the site.

C. The Owner, Contractor, and Landscape Architect will complete a warranty inspection of the landscape.

D. After the warranty inspection, the Contractor will be notified in writing by the Owner's Representative, of any deficiencies or required replacements.

E. The Contractor will complete/resolve all of the items on the warranty inspection and submit written notice requesting follow up inspection to the Owner's Representative seven (7) calendar days prior to the anticipated date of a follow up inspection.

F. The Owner, Contractor, and Landscape Architect will complete a follow up inspection of the landscape to determine completion of all warranty items. If all items are complete, the Owner's Representative will issue a written Notice of Warranty Fulfillment. If not, the Contractor will be notified in writing by the Owner's Representative, of any remaining deficiencies in the requirements for completion of the work and another follow up inspection will be scheduled.

G. Plants that are missing at the time of warranty inspection are to be installed during the specified planting season when weather and site conditions permit.

H. After Notice of Acceptance, the Contractor shall replace plants (once during or at the end of the warranty period) that are observed to be dead or in a badly impaired condition. One replacement after Notice of Acceptance shall constitute fulfillment of Contractor's warranty for the particular plant replaced. Plants replaced during the punch list process are considered to be part of the fulfillment of the requirements of the Contract and are not part of the warranty.

I. Replacement Plants: Plants of the same kind and size as specified in the Plant Schedule; furnished and planted as specified herein. Guyed or staked, mulched, fertilized, pruned, and restored to original condition as originally specified at no cost to Owner.

J. Replacement cost shall be borne by Contractor except for possible replacements resulting from loss or damage due to occupancy at project in any part, vandalism, civil disobedience, and acts of neglect on the part of others, physical damage by animals, vehicles, fire, or losses due to curtailment of water by local authority, or to "Acts of God". Droughts, floods, tornadoes, winds of hurricane force, and hail are not normal and the damage they do cannot be calculated in a bid.

END OF SECTION

SHIVEHATTERY
ARCHITECTURE + ENGINEERING

CITY OF BONDURANT
1ST STREET & 3RD STREET PARKING IMPROVEMENTS
Final Plans Opinion of Construction Costs
June 17, 2024

DIVISION 1 - 3RD STREET
DIVISION 2 - 1ST STREET

#	ITEM DESCRIPTION	UNITS	D1 QUANTITY	D2 QUANTITY	TOTAL QUANTITY		UNIT COST		D1 COST	D2 COST	TOTAL COST
1	CLEARING AND GRUBBING	LS	0.0	1.0	1	*	$ 6,000.00	=	$ -	$ 6,000.00	$ 6,000.00
2	TOPSOIL, STRIP, SALVAGE AND SPREAD	CY	273.0	216.0	489.0	*	$ 14.00	=	$ 3,822.00	$ 3,024.00	$ 6,846.00
3	EXCAVATION, CLASS 10	CY	261.0	233.0	494.0	*	$ 12.00	=	$ 3,132.00	$ 2,796.00	$ 5,928.00
4	EMBANKMENT IN PLACE, STOCKPILE	CY	189.0	0.0	189.0	*	$ 18.00	=	$ 3,402.00	$ -	$ 3,402.00
5	SUBGRADE PREPARATION, 12 IN.	SY	1308.0	1094.0	2402.0	*	$ 4.50	=	$ 5,886.00	$ 4,923.00	$ 10,809.00
6	STORM SWR G-MAIN, TRENCHED, HDPE, 12 IN	LF	104.0	0.0	104.0	*	$ 80.00	=	$ 8,320.00	$ -	$ 8,320.00
7	STORM SUBDRAIN, TRENCHED, CORRUGATED HDPE, 6 IN	LF	97.0	0.0	97.0	*	$ 30.00	=	$ 2,910.00	$ -	$ 2,910.00
8	STORM SUBDRAIN, CLEANOUT	EA	1	0	1	*	$ 900.00	=	$ 900.00	$ -	$ 900.00
9	VALVE BOX ADJUSTMENT	EA	1	0	1	*	$ 800.00	=	$ 800.00	$ -	$ 800.00
10	STD/S-F PCC PAVEMENT, CLASS C, CLASS III, 6 IN	SY	665.0	672.0	1337.0	*	$ 68.00	=	$ 45,220.00	$ 45,696.00	$ 90,916.00
11	SIDEWALK, PCC, 5 IN	SY	184.0	248.0	432.0	*	$ 62.00	=	$ 11,408.00	$ 15,376.00	$ 26,784.00
12	DETECTABLE WARNING	SF	109.0	0.0	109.0	*	$ 55.00	=	$ 5,995.00	$ -	$ 5,995.00
13	PAVEMENT REMOVAL	SY	170.0	323.0	493.0	*	$ 18.00	=	$ 3,060.00	$ 5,814.00	$ 8,874.00
14	INTERLOCKING PERMEABLE PAVERS	SY	162.0	0.0	162.0	*	$ 150.00	=	$ 24,300.00	$ -	$ 24,300.00
15	SANITARY MANHOLE ADJUSTMENT, MINOR	EA	1	0	1	*	$ 2,800.00	=	$ 2,800.00	$ -	$ 2,800.00
16	SW-501 STORM STRUCTURE	EA	1	0	1	*	$ 4,500.00	=	$ 4,500.00	$ -	$ 4,500.00
17	SW-401 STORM STRUCTURE, 48"	EA	1	0	1	*	$ 5,500.00	=	$ 5,500.00	$ -	$ 5,500.00
18	PAINTED PAVEMENT MARKINGS, SOLVENT/WATERBORNE	STA	2.8	4.3	7.1	*	$ 500.00	=	$ 1,400.00	$ 2,150.00	$ 3,550.00
19	PAINTED PAVEMENT SYMBOLS AND LEGENDS	EA	1	1	2	*	$ 150.00	=	$ 150.00	$ 150.00	$ 300.00
20	TEMPORARY TRAFFIC CONTROL	LS	0.5	0.5	1	*	$ 5,000.00	=	$ 2,500.00	$ 2,500.00	$ 5,000.00
21	TYPE- 'A' SIGN ASSEMBLY INSTALLATION	EA	1	1	2	*	$ 360.00	=	$ 360.00	$ 360.00	$ 720.00
22	REMOVAL AND REINSTALLATION OF EXISTING TRAFFIC SIGN	EA	2	0	2	*	$ 250.00	=	$ 500.00	$ -	$ 500.00
23	HYDRAULIC SEEDING, FERTILIZING, & MULCHING TYPE 1	AC	0.30	0.20	0.50	*	$ 6,500.00	=	$ 1,950.00	$ 1,300.00	$ 3,250.00
24	PLANTS WITH WARRANTY, TREE	EA	4	6	10	*	$ 600.00	=	$ 2,400.00	$ 3,600.00	$ 6,000.00
25	FILTER SOCK, 8 IN.	LF	266.0	280.0	546.0	*	$ 2.50	=	$ 665.00	$ 700.00	$ 1,365.00
26	REMOVAL OF FILTER SOCK	LF	266.0	280.0	546.0	*	$ 0.50	=	$ 133.00	$ 140.00	$ 273.00
27	INTAKE SEDIMENT FILTER BAG	EA	4	2	6	*	$ 250.00	=	$ 1,000.00	$ 500.00	$ 1,500.00
28	REMOVAL OF SEDIMENT FILTER BAG	EA	4	2	6	*	$ 59.00	=	$ 236.00	$ 118.00	$ 354.00
29	REMOVAL OF STRUCTURE	LS	1.0	0.0	1	*	$ 4,500.00	=	$ 4,500.00	$ -	$ 4,500.00
30	CONSTRUCTION SURVEY	LS	0.6	0.4	1	*	$ 8,500.00	=	$ 5,100.00	$ 3,400.00	$ 8,500.00
31	MOBILIZATION	LS	0.6	0.4	1	*	$ 22,000.00	=	$ 13,200.00	$ 8,800.00	$ 22,000.00
32	CONCRETE WASHOUT	EA	1	1	2	*	$ 1,750.00	=	$ 1,750.00	$ 1,750.00	$ 3,500.00
33	6 FT. WOODEN FENCE	LF	120.0	0.0	120.0	*	$ 85.00	=	$ 10,200.00	$ -	$ 10,200.00
34	SITE LIGHTING AND CIRCUITRY	LS	0.60	0.40	1	*	$ 48,000.00	=	$ 28,800.00	$ 19,200.00	$ 48,000.00
35	TEMPORARY CONSTRUCTION FENCE	LF	150.0	150.0	300.0	*	$ 10.00	=	$ 1,500.00	$ 1,500.00	$ 3,000.00
							Subtotal		**$ 208,299.00**	**$ 129,797.00**	**$ 338,096.00**
							10% Construction Contingency		**$ 20,830.00**	**$ 12,980.00**	**$ 33,810.00**

Division 1	Division 2	Project Total
$ 229,129.00	**$ 142,777.00**	**$ 371,906.00**

**TOTAL PROJECT COSTS AND CONSTRUCTION COSTS PROVIDED HEREIN ARE MADE ON THE BASIS OF ENGINEER'S EXPERIENCE AND QUALIFICATIONS AND REPRESENT THE ENGINEER'S BEST JUDGMENT. HOWEVER, THE ENGINEER CANNOT AND DOES NOT GUARANTEE THAT BIDS OR ACTUAL TOTAL PROJECT OR CONSTRUCTION COSTS WILL NOT VARY FROM THE ESTIMATE OF PROBABLE CONSTRUCTION COST. THIS ESTIMATE IS INTENDED TO ASSIST IN BUDGETARY ASSESSMENT AND DOES NOT GUARANTEE THAT ACTUAL PROJECT COSTS WILL NOT EXCEED OR BE LOWER THAN THE AMOUNTS STATED IN THIS ESTIMATE.

BUSINESS OF THE CITY COUNCIL
BONDURANT, IOWA
AGENDA STATEMENT

Item No. 5.q.
For Meeting of 6/17/2024
Resolution

TITLE: - Resolution approving IMWCA Renewal

CONTACT PERSON:
Marketa Oliver, ICMA-CM, SPHR, City Administrator
Jene Jess, Finance Director

BRIEF HISTORY & ANALYSIS: Attached are renewal documents from Iowa Municipalities Workers' Compensation Association (IMWCA) for the city's upcoming workers' compensation renewal with them on 7/1/2024. The estimated premium schedule for the 7/1/24-7/1/25 policy term is $83,085. The estimated premium for the 7/1/23 - 7/1/24 policy term was $99,056, meaning that the City is saving nearly $16,000. This significant drop in the premium is in large part due to the City's exceptional loss/claim experience. The City's experience modification factor is decreasing from 0.69 to 0.54. That experience mod factor improvement combined with decreasing workers' compensation rates in Iowa are responsible for the reduced premium. The other factor that has reduced the City's workers' compensation obligations is the effort the Finance and Employee Services Director has put into the accurate categorization of time employees spend in each wage category. Some wage categories carry a higher premium than others. Through the City's ongoing automation efforts, the implementation of electronic timekeeping has also helped accumulate the data necessary to accurately track time spent in the different wage categories. In FY22, the City paid $164,548 for Workers' Compensation insurance.

FUNDING SOURCE: Employee Benefits and Enterprise funds

STAFF RECOMMENDATION: Approve resolution on a roll call vote.

APPROVED FOR SUBMITTAL:

ATTACHMENTS:
1. RESOLUTION NO. 240617-133

CITY OF BONDURANT
RESOLUTION NO. 240617-133

A RESOLUTION APPROVING IMWCA RENEWAL

WHEREAS, the City of Bondurant has received renewal documents from the Iowa Municipalities Workers' Compensation Association (IMWCA) for the workers' compensation insurance policy term beginning July 1, 2024, and ending July 1, 2024; AND

WHEREAS, the estimated premium for the upcoming policy term is $83,085, which represents a significant reduction from the previous year's estimated premium of $99,056, resulting in nearly $16,000 in savings for the City; AND

WHEREAS, this reduction in premium is primarily attributed to the City's exceptional loss/claim experience, reflected in the decrease of the City's experience modification factor form 0.69 to 0.54; AND

WHEREAS, the reduction in workers' compensation rates in Iowa has also contributed to the lower premium; AND

WHEREAS, the City's Finance and Employee Services Director has made significant efforts in accurately categorizing the time employees spend in each wage category, recognizing that some wage categories carry a higher premium than others; AND

WHEREAS, the City's ongoing automation efforts and the implantation of electronic timekeeping have facilitated the accurate tracking of employee time spent in different wage categories, further aiding in the reduction of workers' compensation obligations; AND

WHEREAS, in FY22, the City paid $164,548 for Workers' Compensation insurance, highlighting the significant progress made in reducing these costs over the past two fiscal years.

1. That the renewal of workers' compensation insurance with the Iowa Municipalities Workers' Compensation Association (IMWCA) for the policy term July 1, 2024, to July 1, 2025, with an estimated premium of $83,085 is hereby approved.
2. That the City Council acknowledges and commends the efforts of the City's Finance and Employee Services Director in achieving accurate categorization of employee work time and the successful implementation of electronic timekeeping, which have contributed to the reduction in the City's workers' compensation premium.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Bondurant, Iowa, that the IMWCA Renewal is hereby approved.

Passed this 17th day of June 2024,

_____
Doug Elrod, Mayor

ATTEST: I, Shelby Hagan, City Clerk of Bondurant, hereby certify that at a meeting of the City Council held on the above date, among other proceedings, the above was adopted.

IN WITNESS WHEREOF, I have hereunto set my hand the day and year above written.

_____

Shelby Hagan, City Clerk

Council Action	Ayes	Nays	Abstain	Absent
Driscoll				
Sillanpaa				
Peffer				
McKenzie				
Cox				

BUSINESS OF THE CITY COUNCIL
BONDURANT, IOWA
AGENDA STATEMENT

Item No. 7.a.
For Meeting of 6/17/2024
Public Hearing

TITLE: Public hearing on the proposed plans, specifications, form of contract, estimate of cost for the Park Side Trail Connection Project

CONTACT PERSON:
Maggie Murray, Planning & Community Development Director
John Horton, Public Works Director

BRIEF HISTORY & ANALYSIS: This public hearing is for the Park Side Trail connection.

The Parkside Trail Connection Project will connect the Parkside, Featherstone, and Petocka Run developments via trail connection to the Lake Petocka trail and to the rest of the CVT regional trail system. Shive-Hattery designed the trail and bids were opened on Wednesday, June 12. There were 13 bids ranging from $467,721.18 to $631,582.50. The engineer's estimate of cost for the project was $500,365.

Based on reviewing the bids by Shive-Hattery and City Staff, RW Excavating Solutions LC. is the lowest responsive bidder for the project at $467,721.18

FUNDING SOURCE: NA

STAFF RECOMMENDATION: Hold public hearing.

APPROVED FOR SUBMITTAL:

ATTACHMENTS:
1. 24-05-17_ParkSide Trail_Final Bid Plans_Signed
2. 24-05-17_ParkSide Trail_Project_Manual
3. 24-05-17_ParkSide Trail_Cost-Estimate

TOTAL SHEETS
23

PLANS OF PROPOSED IMPROVEMENTS TO

PARK SIDE TRAIL CONNECTION

PARK SIDE SUBDIVISION TO CHICHAQUA VALLEY TRAIL CONNECTION

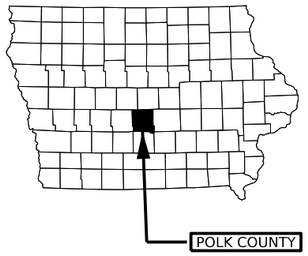
BONDURANT, IOWA

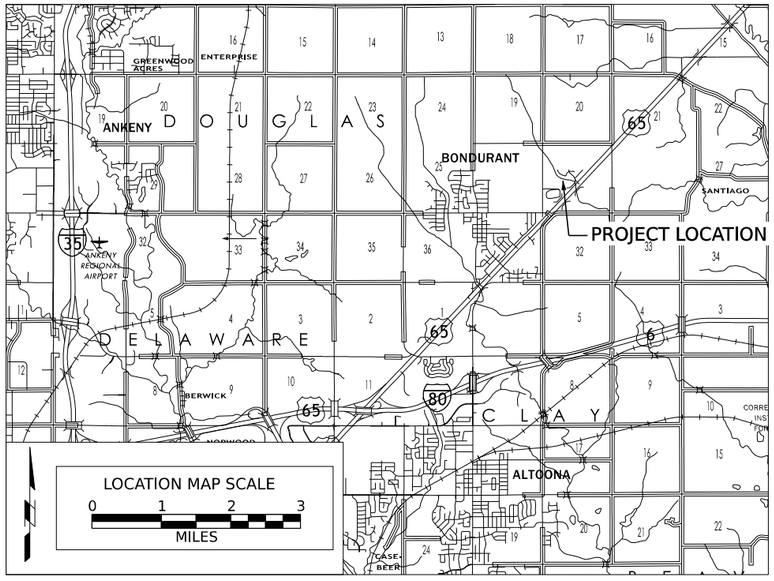
IOWA ONE CALL
1-800-292-8989
www.iowaonecall.com | 811

WHERE PUBLIC UTILITY FIXTURES ARE SHOWN AS EXISTING ON THE PLANS OR ENCOUNTERED WITHIN THE CONSTRUCTION AREA, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE OWNERS OF THOSE UTILITIES PRIOR TO THE BEGINNING OF ANY CONSTRUCTION. THE CONTRACTOR SHALL AFFORD ACCESS TO THESE FACILITIES FOR NECESSARY MODIFICATION OF SERVICES. UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORD, AND THEREFORE THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. IT IS POSSIBLE THERE MAY BE OTHERS. THE EXISTENCE OF WHICH PRESENTLY NOT KNOWN OR SHOWN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THEIR EXISTENCE AND EXACT LOCATION AND TO AVOID DAMAGE THERETO. NO CLAIMS FOR ADDITIONAL COMPENSATION WILL BE ALLOWED TO THE CONTRACTOR FOR ANY INTERFERENCE OR DELAY CAUSED BY SUCH WORK.

ALL CONSTRUCTION SHALL CONFORM TO THE 2023 EDITION OF THE SUDAS STANDARD SPECIFICATIONS.

STATE OF IOWA





INDEX OF SHEETS	
No.	**Description**
A. Sheets	**Title Sheets**
A.1	Title Sheet
A.2	Legend and Symbols
A.3	Overall Project Limits
B. Sheets	**Typical cross Sections and Details**
B.1	Typical Sections
C. Sheets	**Quantities and General Information**
C.1	Estimated Project Quantities
C.2 - 3	Estimate Reference Notes
C.4	General Notes
D. Sheets	**Mainline Plan and Profile Sheets**
D.1 - 2	Mainline Plan and Profile
E. Sheets	**Side Plan and Profile Sheets**
E.1	Sidewalk Connection Plan and Profile
G. Sheets	**Control Sheets**
G.1 - 2	Alignment Data
P. Sheets	**Landscape Plan**
P.1 - 3	Landscape Plan
P.4	Landscape Schedule
P.5	Fishing Node Detail
P.6	Planting Details
V. Sheets	**Culvert Type, Size, and Location Plan**
V.1	Culvert Situation Plan
W. Sheets	**Cross Sections**
W.1 - 3	Mainline Cross Sections

UTILITY CONTACT INFORMATION

COMPANY	CONTACT	PHONE	EMAIL
City of Bondurant	Patrick Collison	(515) 971-6856	pcollison@cityofbondurant.com
Midamerican Gas and Electric	Matt Novy	(515) 901-8274	matthew.novy@midamerican.com
MI-Fiber	Justin Miller	(515) 897-8802	jmiller@mi-fiber.net
Mediacom	Kevin Collins	(515) 246-6668	kcollins1@mediacomcc.com
Centurylink	Sadie Hull	(918) 547-0147	sadie.hull@lumen.com

LICENSED PROFESSIONAL ENGINEER
DAVID R FLIEHLER
23509
IOWA

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT DESCRIBED BELOW 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.

Signature: 05/17/2024 Date

Printed or typed name: David R. Fliehler

License Number: P23509

My License Renewal Date is: DECEMBER 31, 2025

PAGES, SHEETS OR DIVISIONS COVERED BY THIS SEAL:

ALL SHEETS

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MManzer

LEGEND AND SYMBOLS

- Evergreen Tree
- Deciduous Tree
- Shrub (Bushes)
- Vegetation Line
- Hedge
- Stump
- Survey Control Point Rod (CP ROD)
- Existing Fiber Optic Marker (FIBER)
- Existing Drainage
- Proposed Drainage
- Sign - Single - Double Post
- Existing Flagpole
- Monitoring Well
- Beehive Intake
- Existing Intake (Circle Rectangle Square)
- Existing Intake (Curb)
- Existing Storm Manhole
- Existing Sanitary Manhole
- Existing Water Manhole
- Existing Telephone Manhole
- Existing Traffic Manhole
- Fire Hydrant
- Gas Valve
- Water Valve
- Irrigation Valve
- Clean Out

- Underground Cable Line (C)
- Existing Water Line (W)
- Existing Sanitary Sewer Line
- Existing Sanitary Sewer Force Line
- Existing Telephone Line (T)
- Existing Fiber Optic Line (FO)
- Existing Storm Sewer Culvert
- Proposed Storm Sewer
- Existing Storm Sewer Line
- Existing Gas Line (G)
- Existing Overhead Power Line (OE)
- Existing Underground Power Line (E)
- Chain Link or Security Fence
- Wood Fence
- Right of Way
- Temporary Easement
- Permanent Easement
- Public Utility Easement (PUE)
- Telephone Pole
- Power Pole
- Power Pole with Light
- Light Pole
- Pedestrian Push Button
- Traffic Signal
- Telephone Pedestal (T)
- Electric Meter (E)
- Vault Box (V)
- Hand Hole (HH)
- Cable TV Pedestal (C)
- Fiber Optic Box (F)
- Traffic Signal Box (S)

SHIVEHATTERY ARCHITECTURE + ENGINEERING
4125 Westown Parkway Suite 100
West Des Moines, Iowa 50266
515.223.8104 | shive-hattery.com

CITY OF Bondurant

SH PROJECT NO: 2142301580
CLIENT PROJECT NO:

DRAWN BY: MAM
APPROVED BY: DRF
DATE: 5/17/2024

NO.	REVISION DESCRIPTION	APPROVED	DATE

PARK SIDE SUBDIVISION TO CHICHAQUA VALLEY TRAIL CONNECTION

LEGEND AND SYMBOLS

A.2

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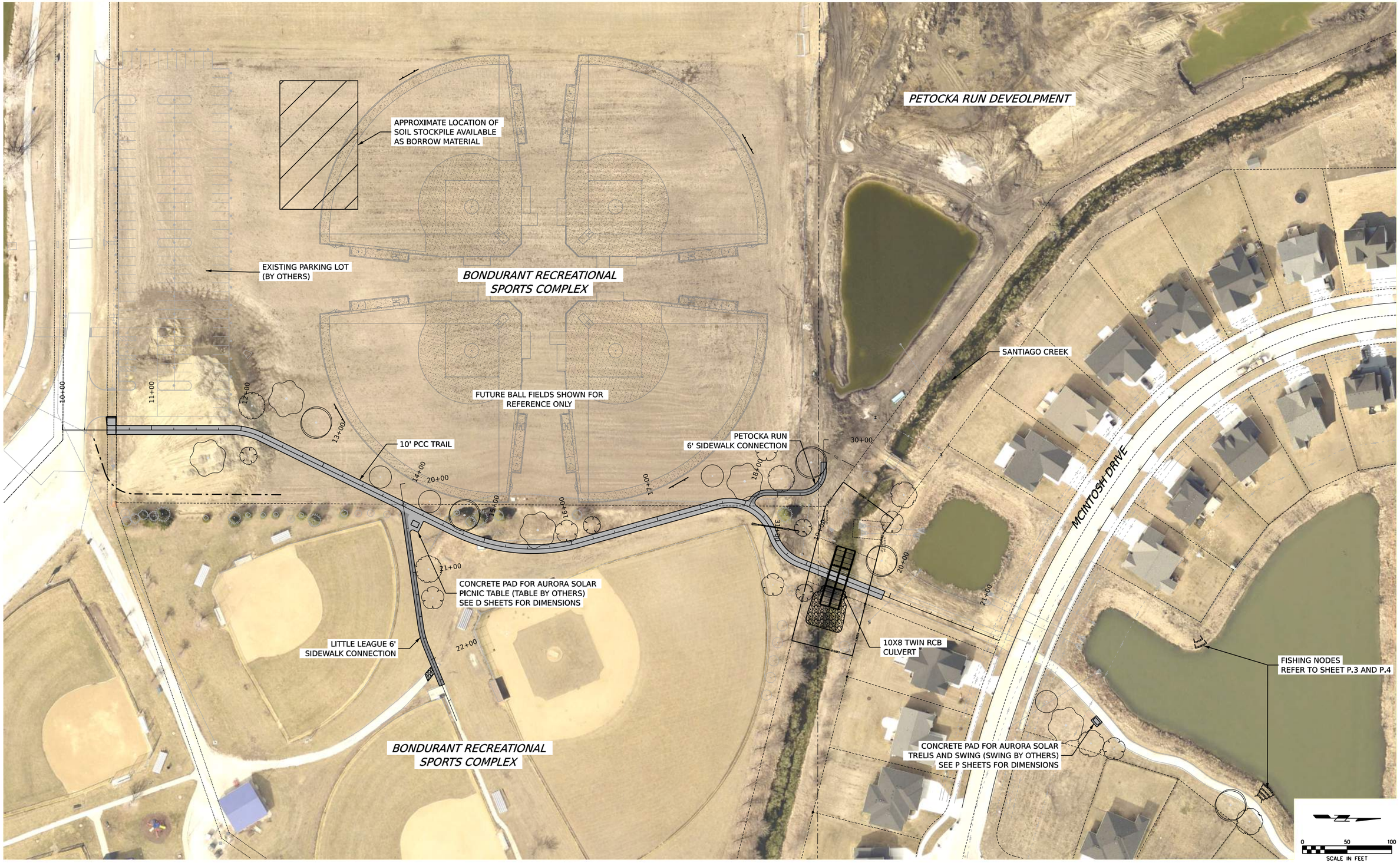

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SHIVEHATTERY ARCHITECTURE + ENGINEERING
4125 Westown Parkway Suite 100
West Des Moines, Iowa 50266
515.223.8104 | shive-hattery.com

CITY OF Bondurant

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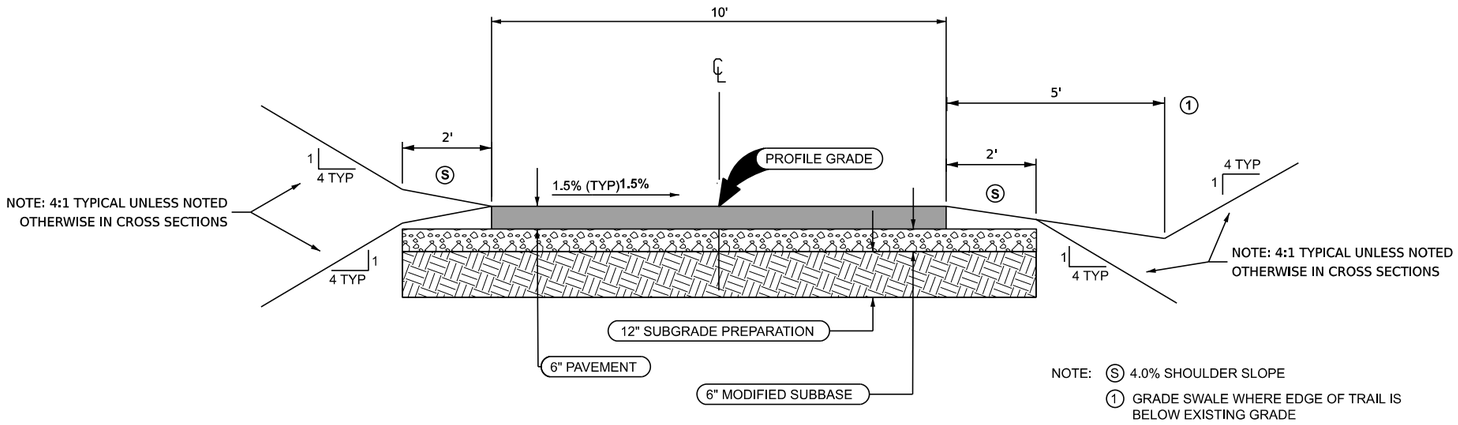
APPROVED BY: DRF
DATE: 5/17/2024

NO.	REVISION DESCRIPTION	APPROVED	DATE

PARK SIDE SUBDIVISION TO CHICHAQUA VALLEY TRAIL CONNECTION

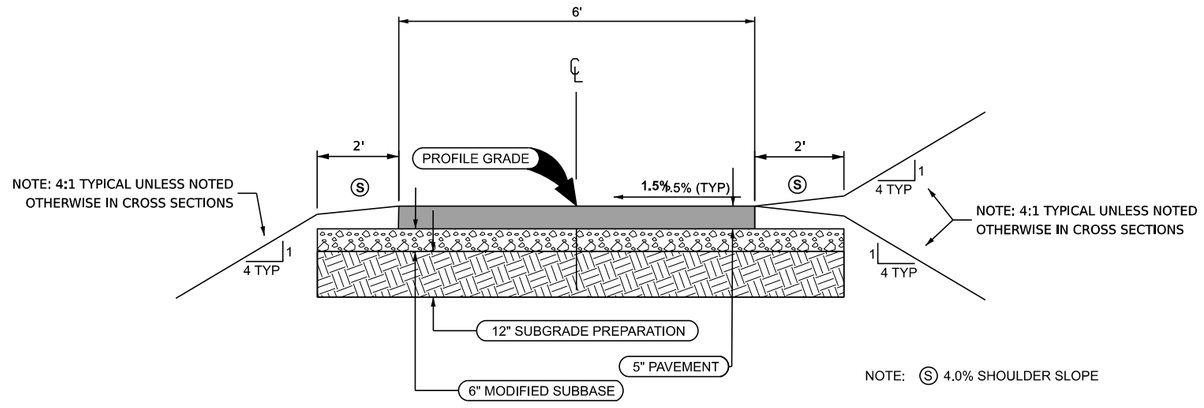
OVERALL PROJECT LIMITS

A.3



10' TRAIL TYPICAL SECTION

STATION: 10+60 - 19+93



6' SIDEWALK TYPICAL SECTION

LITTLE LEAGUE 6' SIDEWALK CONNECTION: 20+31 - 22+31.24
PETOCKA RUN 6' SIDEWALK CONNECTION: 30+25 - 31+39.99

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CITY OF Bondurant

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CLIENT PROJECT NO:

DRAWN BY: MAM
APPROVED BY: DRF
DATE: 5/17/2024

NO.	REVISION DESCRIPTION	APPROVED	DATE

PARK SIDE SUBDIVISION TO CHICHAQUA VALLEY TRAIL CONNECTION

TYPICAL SECTIONS

B.1

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100-1C
MODIFIED

ESTIMATED PROJECT QUANTITIES

Division 1: Project work south of creek
Division 2: Project work from creek to the North including culvert and fishing jetties
Division 3: 6' sidewalk construction

Item No.	Item Code	Item	Unit	Quantities							
				Estimated				As-Built			
				Division 1	Division 2	Division 3	Total	Division 1	Division 2	Division 3	Total
DIVISION 2 - EARTHWORK											
1	2010-C	CLEARING AND GRUBBING	LS	0.9	0.1		1				
2	2010-D-1	TOPSOIL, STRIP, SALVAGE AND SPREAD	CY	1250.0	140.0	205.0	1595.0				
3	2010-E	EXCAVATION, CLASS 10	CY	565.0	105.0	105.0	775.0				
4	2010-J	MODIFIED SUBBASE, 6 IN.	SY	1365.0	125.0	340.0	1830.0				
5	2010-K-1	REMOVALS, PER PLAN	LS	0.9	0.1		1				
DIVISION 4 - SEWERS AND DRAINS											
6	4020-A-1	STORM SEWER, TRENCHED, DUAL WALL POLYPROPYLENE, 12 IN.	LF	38.0			38.0				
DIVISION 6 - STRUCTURES FOR SANITARY AND STORM SEWERS											
7	6010-E-1	MANHOLE ADJUSTMENT, MINOR	EA	1			1				
8	6010-SPECIAL	REINFORCED CONCRETE BOX CULVERT, TWIN 10X8	LF		24.0		24.0				
9	6010-SPECIAL	REINFORCED CONCRETE BOX CULVERT STRAIGHT END SECTION, TWIN 10X8	EA		2		2				
10	6010-SPECIAL	GRANULAR MATERIAL FOR WORKING BLANKET	TON		111.0		111.0				
DIVISION 7 - STREETS AND RELATED WORK											
11	7030-D	SPECIAL SUBGRADE PREPARATION FOR SHARED USE PATH	SY	1365.0	125.0	460.0	1950.0				
12	7030-E	SHARED USE PATH, PCC, 6 IN.	SY	1000.0	100.0		1100.0				
13	7030-E	SIDEWALK, PCC, 5 IN.	SY			210.0	210.0				
14	7030-H	DRIVEWAY, GRANULAR, 6 IN.	TON			4.0	4.0				
15	7040-H	PAVEMENT REMOVAL	SY		20.0		20.0				
16	SPECIAL	3/8" MINUS CRUSHED LIMESTONE, 5 IN.	TON		14.0		14.0				
DIVISION 8 - TRAFFIC CONTROL											
17	8030-A	TEMPORARY TRAFFIC CONTROL	LS	0.9	0.1		1				
DIVISION 9 - SITE WORK AND LANDSCAPING											
18	9010-B	HYDRAULIC SEEDING, FERTILIZING SUDAS TYPE 1	AC	1.8	0.3	0.1	2.2				
19	9010-B	HYDRAULIC SEEDING, FERTILIZING SUDAS TYPE 3	AC	0.2	0.1		0.3				
20	9010-B	HYDRAULIC SEEDING, FERTILIZING SUDAS TYPE 5	AC	2.0	1.0	0.1	3.1				
21	9010-B	HYDRAULIC SEEDING, FERTILIZING CUSTOM POLLINATOR SEED MIX	AC		0.2		0.2				
22	9010-B	HYDRAULIC SEEDING, FERTILIZING SUDAS WETLAND GRASS SEED MIX	AC		0.4		0.4				
23	9030-B	PLANTS WITH WARRANTY, TREE	EA	21	9		30				
24	9030-B	PLANTS WITH WARRANTY, PERENNIALS AND ORNAMENTAL GRASSES PLUG	EA	1314	1253		2567				
25	9040-A-1	SWPPP PREPARATION	LS	0.9	0.1		1				
26	9040-A-2	SWPPP MANAGEMENT	LS	0.9	0.1		1				
27	9040-D-1	FILTER SOCK, 9 IN.	LF	500.0	100.0	300.0	900.0				
28	9040-D-2	FILTER SOCK, REMOVAL	LF	500.0	100.0	300.0	900.0				
29	9040-E	TEMPORARY RECP, EROSION CONTROL BLANKET	SQ	50.0	200.0		250.0				
30	9040-J	RIP-RAP, CLASS E	TON		135.0		135.0				
31	9040-K-SPECIAL	TEMPORARY SEDIMENT BASIN AND CHECK DAM	LS		1		1				
32	9040-N-1	SILT FENCE OR DITCH CHECK	LF	500.0	250.0		750.0				
33	9040-N-2	SILT FENCE OR DITCH CHECK, REMOVAL OF SEDIMENT	LF	500.0	250.0		750.0				
34	9040-N-3	SILT FENCE OR DITCH CHECK, REMOVAL OF DEVICE	LF	500.0	250.0		750.0				
35	9040-Q-2	EROSION CONTROL MULCHING, HYDROMULCH	AC	4.0	2.0	0.2	6.2				
36	9040-Q-SPECIAL	HARDWOOD MULCH SURFACING	CY	19.0	18.0		37.0				
37	9060-SPECIAL	DECORATIVE STEEL FENCE, 48 IN.	LF		44.0		44.0				
38	9060-SPECIAL	DECORATIVE STEEL FENCE, 60 IN.	LF		82.0		82.0				
39	9090-SPECIAL	WEST LIMESTONE FISHING JETTY	LS		1		1				
40	9090-SPECIAL	EAST LIMESTONE FISHING JETTY	LS		1		1				
DIVISION 11 - MISCELLANEOUS											
41	11010-A	CONSTRUCTION SURVEY	LS	0.6	0.3	0.1	1				
42	11020-A	MOBILIZATION	LS	0.3	0.6	0.1	1				
43	11050-A	CONCRETE WASHOUT	LS	0.6	0.3	0.1	1				

SHIVEHATTERY ARCHITECTURE + ENGINEERING
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CITY OF Bondurant

SH PROJECT NO: 2142301580
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PARK SIDE SUBDIVISION TO
CHICHAQUA VALLEY TRAIL CONNECTION

ESTIMATED PROJECT QUANTITIES

C.1

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ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
EARTHWORK		
1	2010-C	CLEARING AND GRUBBING
		Item includes removal of undesirable shrubs and trees within limits shown on the D sheets. The City will flag desirables trees and shrubs to remain within this area prior to construction. Outside of the limits shown, contractor to limit clearing of vegetation to minimum required to construct trail and grading.
2	2010-D-1	TOPSOIL, STRIP, SALVAGE AND SPREAD
		Strip and salvage topsoil to a minimum depth of 8 inches before excavation occurs. The bid item quantity of 1,570 CY represents the quantity of topsoil to be stripped. A minimum of 8 inches of topsoil shall be spread in all disturbed areas. Excess topsoil, if any, shall be wasted within native planting areas, foreslopes, back slopes and ditches. This item shall be paid for based on plan quantity and will not be measured.
3	2010-E	EXCAVATION, CLASS 10
		Division 1 of the project requires 330 CY of unfactored cut and 565 CY of factored fill (including a 30% fill factor). Division 2 of the project requires 15 CY of unfactored cut and 105 CY of factored fill (including a 30% fill factor). Division 3 of the project requires 105 CY of unfactored cut and 25 CY of factored fill (including a 30% fill factor). The Class 10 Excavation bid quantity represents the calculated factored fill volume for Division 1 and 2 and the calculated cut volume for Division 3. Borrow soil for use in Division 1 and 2 may be excavated for use from the location shown on Sheet A.3. Soil excavated from the creek for culvert and revetment installation shall be used in fill areas but shall not be used underneath pavement. Shoulder finishing is included in this item. This item shall be paid for based on plan quantity and will not be measured. Type 'A' compaction shall apply to this item.
4	2010-J	MODIFIED SUBBASE, 6 IN.
		Refer to sheet B.1 for trail and sidewalk typical sections. Modified subbase shall be placed a minimum of 2' beyond edge of pavement.
5	2010-K-1	REMOVALS, PER PLAN
		Remove and properly dispose of items as necessary for construction of the project. This item includes but is not limited to: removal of existing batting cage and footings, trash or debris located within areas shown on the D sheets, top section of sheet pile located in Santiago Creek at trail crossing. Existing sheet pile shall be removed to 1 foot minimum below the base of the proposed box culvert. Concrete encasement of sanitary sewer shall be removed to 2" below bottom of concrete box culvert.
SEWERS AND DRAINS		
6	4020-A-1	STORM SEWER, TRENCHED, DUAL WALL POLYPROPYLENE, 12 IN.
		This item includes the material, excavation, placement, and backfill of the 12" dual wall polypropylene pipe. See sheet D.2 for lengths, locations, and elevations. Incidental to this item includes two end sections. Contractor to submit product information for review prior to construction.
STRUCTURES FOR SANITARY AND STORM SEWERS		
7	6010-E-1	MANHOLE ADJUSTMENT, MINOR
		See sheet D.2 for location.
8	6010-SPECIAL	REINFORCED CONCRETE BOX CULVERT, TWIN 10X8
		This item shall include all necessary material, labor, equipment, and excavation to install culvert barrel section, including backfill material, subdrain pipe, and any required overexcavation due to unsuitable soils. Unsuitable soils shall be wasted on site within the grading limits. This item will pay for a precast or cast in place barrel section subject to approved submittals. Refer to V sheets for additional notes. Televising of existing sanitary sewer before and after construction shall be considered incidental to this item.
9	6010-SPECIAL	REINFORCED CONCRETE BOX CULVERT STRAIGHT END SECTION, TWIN 10X8
		This item shall include all necessary material, labor, equipment, and excavation to install culvert end section, including backfill material,, subdrain pipe, and any required overexcavation due to unsuitable soils. Unsuitable soils shall be wasted on site within the grading limits. This item will pay for one precast or cast in place monolithic twin end section or two single barrel end sections if the side by side single cell option is chosen, subject to approved submittals. Refer to V sheets for additional notes.
10	6010-SPECIAL	GRANULAR MATERIAL FOR WORKING BLANKET
		This item shall include all necessary material, labor, equipment, and excavation to install granular working blanket for RCB culvert and RCB end sections. Refer to Iowa DOT Section 4118 for material requirements. Quantity will be verified by tickets.
STREETS AND RELATED WORK		
11	7030-D	SPECIAL SUBGRADE PREPARATION FOR SHARED USE PATH
		This item shall include subgrade preparation for both the trail and sidewalk sections. Refer to sheet B.1 for trail and sidewalk typical sections. Special subgrade preparation shall be completed a minimum of 2' beyond edge of pavement. Subgrade shall be prepared in two (2) six-inch lifts. Type 'A' compaction shall apply to this item.
12	7030-E	SHARED USE PATH, PCC, 6 IN.
		Refer to B and D Sheets for locations and details. Submit proposed mix designs to City and Engineer for approval. Class C concrete shall be used. Special Compaction of Subgrade shall apply to this item.
13	7030-E	SIDEWALK, PCC, 5 IN.
		Refer to B and E Sheets for locations and details. Submit proposed mix designs to City and Engineer for approval. Class C concrete shall be used. Special Compaction of Subgrade shall apply to this item.
14	7030-H	DRIVEWAY, GRANULAR, 6 IN.
		Refer to E-Sheets for location and details. Granular driveway to be constructed to a 6" depth. Item includes blending of granular surface into existing driveways to create a smooth transition.
15	7040-H	PAVEMENT REMOVAL
		Refer to D.2 for location. Quantity includes removal and disposal of all removed pavement. Full depth saw cutting is incidental and required prior to removal of pavement adjacent to existing pavement. Adjacent pavement damaged during removals shall be replaced by Contractor incidental to this item.
16	SPECIAL	3/8" MINUS CRUSHED LIMESTONE, 5 IN.
		This item shall include all necessary material, labor, and equipment to install 3/8" minus crushed limestone trail. Cross-slope of pathway shall not exceed 2%. This item shall include excavation to embed the limestone flush with existing grade, and compaction of the subgrade. Weed fabric shall be installed between crushed limestone layer and natural earth to prevent migration of granular material. Refer to sheet P.3 for location.
TRAFFIC CONTROL		
17	8030-A	TEMPORARY TRAFFIC CONTROL
		Traffic control plan shall be the responsibility of the contractor. Item includes providing, placing, shifting, maintaining, replacing and removing of all traffic control signage and devices required during the project. This item shall include any signs, barricades, and temporary fencing required to properly identify the construction site and keep the public out of the site.

100-4A
10-29-02

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
18	9010-B	HYDRAULIC SEEDING, FERTILIZING SUDAS TYPE 1
		Type 1 seeding shall be United Seeds Inc. Rescue Plus Tall Fescue/Bluegrass Mix (93% Summer Turf Type Tall Fescue & 7% Jackpot Kentucky Bluegrass) and seeded at a rate of 450lbs/acre. Apply a commercial starter fertilizer with a 24-25-4 ratio at a initial rate of 140lbs/acre. A second fertilizer application shall occur in the following growing season at a rate of 160lbs/acre. Place in accordance with Storm water Pollution Prevention Plan. Top six inches of the seedbed shall be free of rock and debris. Broadcast half of the seed before hydro-seed mixture is applied and place the other half in the hydro-seed mixture. Refer to Seeding Plan on P Sheets for Type 1 seeding limits. Payment Shall include all necessary material, labor and installation for complete seeding, and fertilizing. Mulching shall be paid for in item "Erosion Control Mulching, Hydromulch". This item includes quantity to stabilize disturbed area of the borrow pile. **This Item Includes furnishing water and other care during the care period. Acceptance no sooner than 60 days. Acceptance Requirements below:** 1. Seeded areas shall be in a live, healthy, growing, and well-established condition without eroded areas, bare spots, weeds, undesirable grasses, disease, or insects. 2. Seeded areas shall have a dense uniform stand of grass growing not less than 95 percent of the overall area and with no individual bare spots larger than 3 inches in size and no concentrations of bare spots. 3. Reseed and maintain all seeded areas which do not meet the requirements of this Section at the time of final inspection.
19	9010-B	HYDRAULIC SEEDING, FERTILIZING SUDAS TYPE 3
		Place in accordance with Storm water Pollution Prevention Plan. Top six inches of the seedbed shall be free of rock and debris. Broadcast half of the seed before hydro-seed mixture is applied and place the other half in the hydro-seed mixture. Refer to Seeding Plan on P Sheets for Type 3 seeding limits. Payment Shall include all necessary material, labor and installation for complete seeding, and fertilizing. Mulching shall be paid for in item "Erosion Control Mulching, Hydromulch". **This item includes furnishing water and other care during the care period. Acceptance no sooner than 60 days. Acceptance Requirements below:** 1. Seeded areas shall be in a live, healthy, growing, and well-established condition without eroded areas, bare spots, weeds, undesirable grasses, disease, or insects. 2. Seeded areas shall have a dense uniform stand of grass growing not less than 95 percent of the overall area and with no individual bare spots larger than 3 inches in size and no concentrations of bare spots. 3. Reseed and maintain all seeded areas which do not meet the requirements of this Section at the time of final inspection.
20	9010-B	HYDRAULIC SEEDING, FERTILIZING SUDAS TYPE 5
		Place in accordance with Storm water Pollution Prevention Plan. Quantity has been calculated to include a single application across all disturbed areas. Top six inches of the seedbed shall be free of rock and debris. Payment Shall include all necessary material, labor and installation for complete seeding, and fertilizing. Mulching shall be paid for in item "Erosion Control Mulching, Hydromulch".
21	9010-B	HYDRAULIC SEEDING, FERTILIZING CUSTOM POLLINATOR SEED MIX
		Place in accordance with Storm water Pollution Prevention Plan. Top six inches of the seedbed shall be free of rock and debris. Broadcast half of the seed before hydro-seed mixture is applied and place the other half in the hydro-seed mixture. Refer to Seeding Plan on P Sheets for native seeding limits. Refer to sheet P.4 for required seed mix. Payment Shall include all necessary material, labor and installation for complete seeding, and fertilizing. Mulching shall be paid for in item "Erosion Control Mulching, Hydromulch". Product information, submittals, labor, materials, and installation. **This item includes furnishing water and other care during the care period. Acceptance no sooner than 60 days. Acceptance Requirements below:** 1. Seeded areas shall be in a live, healthy, growing, and well-established condition without eroded areas, bare spots, weeds, undesirable grasses, disease, or insects. 2. Seeded areas shall have a dense uniform stand of grass growing not less than 95 percent of the overall area and with no individual bare spots larger than 3 inches in size and no concentrations of bare spots. 3. Reseed and maintain all seeded areas which do not meet the requirements of this Section at the time of final inspection.
22	9010-B	HYDRAULIC SEEDING, FERTILIZING SUDAS WETLAND GRASS SEED MIX
		Refer to Seeding Plan on P Sheets for wetland seeding limits. Refer to sheet P.4 for required seed mix. Payment Shall include all necessary material, labor and installation for complete seeding, and fertilizing. Mulching shall be paid for in item "Erosion Control Mulching, Hydromulch". Product information, submittals, labor, materials, and installation. **This Item Includes furnishing water and other care during the care period. Acceptance no sooner than 60 days. Acceptance Requirements below:** 1. Seeded areas shall be in a live, healthy, growing, and well-established condition without eroded areas, bare spots, weeds, undesirable grasses, disease, or insects. 2. Seeded areas shall have a dense uniform stand of grass growing not less than 95 percent of the overall area and with no individual bare spots larger than 3 inches in size and no concentrations of bare spots. 3. Reseed and maintain all seeded areas which do not meet the requirements of this Section at the time of final inspection.
23	9030-B	PLANTS WITH WARRANTY, TREE
		Refer to P sheets for species, sizes, and location. Refer to P sheets for planting details. Tree shall be minimum 2-inch caliper balled and burlapped root stock. Refer to supplemental specification 32 9100 Landscape Planting for product submittals, labor, materials, installation, and a warranty period of 2 years.
24	9030-B	PLANTS WITH WARRANTY, PERENNIALS AND ORNAMENTAL GRASSES PLUG
		Refer to P sheets for species, sizes, and location. Refer to supplemental specification 32 9100 Landscape Planting for product submittals, labor, materials, installation, and a warranty period of 2 years.

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
25	9040-A-1	SWPPP PREPARATION
		The Contractor is responsible for obtaining authorization, implementing, and complying with the National Pollutant Discharge Elimination System (NPDES) General Permit No. 2 for Stormwater Discharge Associated with Construction Activities. The Contractor is the permittee and solely responsible for compliance and all costs as described herein. The Contractor shall not rely on any stormwater discharge permitting or efforts already under taken by the City of Bondurant for this project, including but not limited to those referenced herein. The Contractor will be responsible for preparation of a Storm Water Pollution Prevention Plan (SWPPP). The Contractor shall retain or engage persons knowledgeable in the preparation of the SWPPP, complying with all Iowa Department of Natural Resources (IDNR) applicable requirements. The Contractor shall publish the Public Notice of Storm Water Discharge in one local newspaper as required for General Permit No. 2 and prepare and submit the Notice of Intent to the IDNR. The Contractor shall pay all fees and costs associated with the preparation and filing of the SWPPP, Public Notice of Storm Water Discharge and the Notice of Intent. The Contractor is responsible for implementation, inspection, maintenance, and monitoring compliance of the SWPPP. All subcontractors must sign the contractor certification statement before conducting any work at the site. The certification must be signed in accordance with the signatory requirement found in the permit and must be incorporated into the SWPPP. In the event that the Iowa Department of Natural Resources considers the Owner to be a co-permittee, the Contractor agrees to indemnify and hold harmless the Owner for all issues and activities relating to the SWPPP and NPDES General Permit No. 2, including but not limited to, fines and penalties. References to erosion and/or sediment control measures or devices on the plans are intended to illustrate typical measures to be implemented by the Contractor. References in the plans shall not be considered a part of the SWPPP. The occasion that erosion and/or sediment control measures or devices are not indicated on the plans does not waive the Contractor's responsibilities associated with NPDES General Permit No. 2 or the SWPPP. Contractor is responsible for developing the phasing and staging plans for implementation of the SWPPP. Payment shall be by lump sum and shall be considered full payment for preparation of the SWPPP as noted. Mobilizations for erosion control shall be incidental to this item.
26	9040-A-2	SWPPP MANAGEMENT
		Contractor is responsible for developing the phasing and staging plans for implementation of the Storm Water Pollution Prevention Plan. The Contractor is responsible for filing the Notice of Discontinuation of General Permit No. 2 after vegetative growth has been re-established to the required levels of permit. The Contractor is responsible for all fees and fines associated with the permit and permit violations. The Contractor is responsible for maintaining a copy of the Storm Water Pollution Prevention Plan on the project site and for all site inspection and monitoring required by the permit. The Contractor is responsible to complete all requirements for NPDES General Permit No. 2 in a timely manner to avoid any delays in start of construction. No construction activity shall commence until General Permit No. 2 has been issued and any requirements contained therein have been met. No extension of time for completion of construction will be granted for delays experienced in issuance or failure to meet requirements of the General Permit No. 2 in a timely manner. The Contractor is responsible for providing project copies of the Storm Water Pollution Prevention Plan and any updates, inspection reports, and Notice of Discontinuation to the City in a timely manner. Payment shall be by lump sum and shall be considered full payment for management of the Storm Water Pollution Prevention Plan as noted.
27	9040-D-1	FILTER SOCK, 9 IN.
		Place in accordance with Storm water Pollution Prevention Plan or at the direction of the Engineer. Item includes anchoring stakes. Refer to SUDAS specifications 9040.102 and 9040.105 for further information on filter sock.
28	9040-D-2	FILTER SOCK, REMOVAL
		Remove filter sock as necessary and at the completion of the project.
29	9040-E	TEMPORARY RECP, EROSION CONTROL BLANKET
		Item to be placed as directed on the P Sheets, on slopes steeper than 4:1, and as needed or at the direction of the Engineer. Refer to supplemental specification 32 9200 Seeding.
30	9040-J	RIP-RAP, CLASS E
		Place rip-rap as shown on Sheet V.1. This item shall cover the difference in revetment needed following final placement of existing rip-rap used for the temporary sediment basin and check dam. Rip-rap is to be placed 2 feet thick and shall be embedded so that the top of the rip-rap is flush with the final grade. Engineering fabric shall be placed under rip-rap and shall be considered incidental to this item. Refer to SUDAS specifications 9040.106, 9040.107, 9040.110 and 9040.111for further information. Excavation required for the placement shall be considered incidental to this item and wasted on site. No additional payment will be made for wasting material on site. Item shall be measured in tons & paid for based on material placed (verified by material tickets).
31	9040-K-SPECIAL	TEMPORARY SEDIMENT BASIN AND CHECK DAM
		Prior to construction of the box culvert, the contractor shall remove the existing Class-E rip-rap at the existing sanitary sewer crossing within Santiago Creek and excavate a temporary sediment basin downstream of the proposed box culvert. The relocated rip-rap shall be placed downstream of the box culvert to create a temporary rock check dam. The rip-rap shall remain in place until final site stabilization has occurred. Following final site stabilization, the contractor shall remove sediment deposited in the basin due to construction and remove temporary rock check dam. Rip-rap from check dam shall be placed where shown on Sheet V.1. Item shall be lump sum and include all equipment, excavation, labor and materials needed to construct, maintain, and remove sediment trap and check dam. The intent is the sediment trap shall be in place prior to construction of the box culvert and will remain in place thorough the construction of the project. Sediment shall be removed prior to placement of final rip-rap.
32	9040-N-1	SILT FENCE OR DITCH CHECK
		Place in accordance with Storm water Pollution Prevention Plan or at the direction of the Engineer. Refer to SUDAS specification 9040.119 for further information on silt fence.
33	9040-N-2	SILT FENCE OR DITCH CHECK, REMOVAL OF SEDIMENT
		Sediment removal shall occur prior to 1/2 of maximum sediment storage depth being used.
34	9040-N-3	SILT FENCE OR DITCH CHECK, REMOVAL OF DEVICE
		Remove silt fence as necessary and at the completion of the project.
35	9040-Q-2	EROSION CONTROL MULCHING, HYDROMULCH
		Place in accordance with Stormwater Pollution Prevention Plan. Bonded fiber matrix shall be used for hydromulching. Comply with manufacturers recommendations for each type of mulch used. Hydromulching used in conjunction with hydroseeding can be applied together in one application, provided that all manufacturer's recommendations allow. Quantity is based on the combined Type 1, Type 3, Type 5, Pollinator, and Wetland seeding quantities.

100-4A
10-29-02

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
36	9040-Q-SPECIAL	HARDWOOD MULCH SURFACING
		Mulch shall be placed to a depth of 3" inches for tree rings (see sheet P.4 for planting detail) and 2" inches for planting beds with plugs. Refer to the P sheets for placement locations. Contractor shall submit product info for review and approval prior to construction. Refer to supplemental specification 32 9100 Landscape Planting for product submittals, labor, materials, installation, and warranty.
37	9060-SPECIAL	DECORATIVE STEEL FENCE, 48 IN.
38	9060-SPECIAL	DECORATIVE STEEL FENCE, 60 IN.
		Note applies to items 37 and 38. Provide Ameristar Montage Plus Ornamental fence, Majestic Style, Black, or Approved Equal. Product shall include a 20 year warranty. Payment shall include all equipment, materials, and labor necessary install item to the top of the culvert headwall as noted on sheet V.1. Where mounted on slopped culvert end sections, fence panels shall be racked and include all necessary hardware. Contractor shall submit product info for review and approval prior to construction. Estimated quantities based on precast culvert option. If cast in place culvert is chosen, the 48 inch item will not be used and the 60 inch item quantity will be overrun at the original bid unit price.
39	9090-SPECIAL	WEST LIMESTONE FISHING JETTY
		Fishing node shall be located along the west shore of Park Side Pond. Refer to Sheet P.3 and P.4 for additional details. Item shall include all materials and labor necessary to construct fishing node and be paid for on a lump sum basis. Stone dimension as shown are based on natural Larger Iowa Bluff Wallstone. Exact placement at waters edge may require coordination with the City. Contractor shall submit product info for review and approval prior to construction.
40	9090-SPECIAL	EAST LIMESTONE FISHING JETTY
		Fishing node shall be located along the east shore of Park Side Pond. Refer to Sheet P.3 and P.4 for additional details. Item shall include all materials and labor necessary to construct fishing node and be paid for on a lump sum basis. Stone dimension as shown are based on natural Larger Iowa Bluff Wallstone. Exact placement at waters edge may require coordination with the City. Contractor shall submit product info for review and approval prior to construction.
MISCELLANEOUS		
41	11010-A	CONSTRUCTION SURVEY
		Construction staking shall be provided by Shive-Hattery. This bid item shall include all survey work necessary for construction of this project as intended by the contract documents and approved revisions. All construction staking shall be performed by or under the supervision of a licensed surveyor or engineer. The contractor will be responsible for maintaining all horizontal and vertical control within the project limits following completion of the construction activities. This item shall also include resetting and filing of tie certifications on disturbed section corners. The contractor is required to replace all control points, property corners, and monuments obliterated by construction operations. Prior to grading, locate additional existing property corners, establish coordinates and ties to existing facilities which are to remain, establish horizontal and vertical control. Replace monuments and benchmarks after construction.
42	11020-A	MOBILIZATION
43	11050-A	CONCRETE WASHOUT
		Concrete washout shall be provided onsite to retain all concrete wash water. Type of collection and location of washout shall be coordinated with Stormwater Pollution Prevention Plan and City prior to construction.

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GENERAL NOTES

1. ALL ELEVATIONS ARE TO NAVD88 DATUM.

2. THE CONTRACTOR SHALL THE CITY OF BONDURANT AND SHIVE-HATTERY (515) 223-8104 TO SCHEDULE A PRE-CONSTRUCTION MEETING AT LEAST TWO WEEKS PRIOR TO COMMENCING CONSTRUCTION.

3. THE CONTRACTOR SHALL PREPARE A DETAILED SCHEDULE OF THE WORK WHICH SHALL BE SUBMITTED AT THE PRE-CONSTRUCTION MEETING. SCHEDULE SHALL SHOW ANTICIPATED MATERIAL DELIVERIES AND COMPLETION OF MAJOR TASKS FOR THE PROJECT.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF WORK BETWEEN ALL SUPPLIERS AND SUBCONTRACTORS INVOLVED IN THE PROJECT, INCLUDING STAGING OF CONSTRUCTION DETAILS.

5. THE CONTRACTOR SHALL CONFINE THEIR WORK TO THE CONSTRUCTION LIMITS AND EASEMENTS SHOWN ON THE PLANS. IF THE CONTRACTOR OBTAINS ADDITIONAL EASEMENTS FOR THE STORAGE OF EQUIPMENT AND MATERIALS, COPIES OF THE AGREEMENTS WITH THE PROPERTY OWNERS SHALL BE PROVIDED TO THE CITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE OUTSIDE THE CONSTRUCTION LIMITS RESULTING FROM THEIR NEGLIGENCE. THE CONTRACTOR IS CAUTIONED NEITHER TO OBSTRUCT OR REMOVE ANY EXISTING PAVEMENT, NOR TO DISTURB THE EXISTING TRAFFIC PATTERNS MORE THAN IS NECESSARY FOR THE PROPER EXECUTION OF THE WORK. THE ENGINEER MAY LIMIT THE CONTRACTOR'S OPERATIONS IN ACCORDANCE WITH THE SPECIFICATIONS.

6. THE CONTRACTOR SHALL NOT DISTURB DESIRABLE GRASS AREAS AND DESIRABLE TREES OUTSIDE THE CONSTRUCTION LIMITS. STORAGE, PARKING AND SERVICE AREAS WILL BE SUBJECT TO THE APPROVAL OF THE RESIDENT ENGINEER.

7. WHERE PUBLIC UTILITY FIXTURES ARE SHOWN AS EXISTING ON THE PLANS OR ENCOUNTERED WITHIN THE CONSTRUCTION AREA, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE OWNERS OF THOSE UTILITIES PRIOR TO THE BEGINNING OF ANY CONSTRUCTION. THE CONTRACTOR SHALL AFFORD ACCESS TO THESE FACILITIES FOR NECESSARY MODIFICATION OF SERVICES. UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDS, AND THEREFORE, THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. IT IS POSSIBLE THERE MAY BE OTHERS, THE EXISTENCE OF WHICH IS PRESENTLY NOT KNOWN OR SHOWN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THEIR EXISTENCE AND EXACT LOCATION AND TO AVOID DAMAGE THERETO. NO CLAIMS FOR ADDITIONAL COMPENSATION WILL BE ALLOWED TO THE CONTRACTOR FOR ANY INTERFERENCE OR DELAY CAUSED BY SUCH WORK. THE CONTRACTOR SHALL REPAIR TO SATISFACTION OF THE UTILITY OWNER ANY DAMAGED UTILITIES. KNOWN UTILITY CONFLICTS ARE BEING RESOLVED BY EACH RESPECTIVE UTILITY COMPANY. UTILITY CONFLICTS DISCOVERED DURING CONSTRUCTION WILL BE ADDRESSED AT THE TIME OF DISCOVERY.

8. THE CONTRACTOR IS REQUIRED TO UTILIZE THE UTILITY ONE-CALL SERVICE AT (800) 292-8989 AT LEAST 48 HOURS (EXCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS) PRIOR TO EXCAVATING ANYWHERE ON THE PROJECT.

9. THE CONTRACTOR SHALL VERIFY WHICH UTILITIES HAVE BEEN RECONSTRUCTED AND/OR ABANDONED ALONG WITH THEIR LOCATIONS PRIOR TO STARTING ANY WORK UNDER THIS CONTRACT. COORDINATION WITH UTILITIES WILL BE REQUIRED.

10. TREES AND OTHER VEGETATION WITHIN THE PROJECT LIMITS SHALL BE FELLED AND REMOVED AS NOTED THROUGHOUT THE CONSTRUCTION OF THIS PROJECT.

11. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE WASTE AREAS OR DISPOSAL SITES FOR EXCESS MATERIAL WHICH IS NOT DESIRABLE TO BE INCORPORATED IN THE WORK INVOLVED ON THIS PROJECT (EXCAVATION, METAL POSTS, BROKEN CONCRETE, ETC.). NO PAYMENT FOR OVERHAUL WILL BE ALLOWED FOR MATERIAL HAULED TO THESE SITES.

12. FIELD SURVEYS FOR THESE PLANS WERE PERFORMED BY SHIVE-HATTERY, INC.

13. IN EFFORT TO AVOID ANY DAMAGE TO EXISTING PAVEMENT SURFACES, THE CONTRACTOR SHALL DOUBLE CUT EXISTING PAVEMENT EDGES AND IS CAUTIONED TO EXERCISE EXTREME CARE WHEN REMOVING PAVEMENT.

14. ESTIMATED QUANTITIES FOR CONCRETE PAVEMENT INCLUDES ALL INTEGRAL RADIUS RETURNS, AND AREAS OF REPAIR TO CONNECTING PAVEMENT.

15. SAW CUTS, REINFORCEMENT STEEL, AND LOAD TRANSFER DOWEL BARS AS NOTED IN THE PLANS SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.

16. THE CONTRACTOR SHALL ADEQUATELY BARRICADE FRESH P.C.C. TO PREVENT UNWANTED MARKINGS. BLEMISHED CONCRETE SURFACES SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.

17. THE CONTRACTOR IS TO USE DUE CAUTION IN WORKING OVER AND AROUND ALL TILE LINES. BREAKS IN TILE LINES DUE TO THE CONTRACTOR'S CARELESSNESS ARE TO BE REPLACED AT THEIR EXPENSE WITHOUT COST TO THE OWNER. ANY TILE LINES BROKEN OR DISTURBED BY PROJECT CUT WILL BE REPLACED AS DIRECTED BY THE ENGINEER IN CHARGE OF CONSTRUCTION AND AT THE OWNER'S EXPENSE.

18. ALL HOLES RESULTING FROM OPERATIONS OF THE CONTRACTOR, INCLUDING REMOVAL OF FENCE POSTS, UTILITY POLES, OR STRUCTURES SHALL BE FILLED AND CONSOLIDATED TO FINISHED GRADE AS DIRECTED BY THE ENGINEER TO PREVENT FUTURE SETTLEMENT. THE VOIDS SHALL BE FILLED AS SOON AS PRACTICAL PREFERABLY THE DAY CREATED AND NOT LATER THAN THE FOLLOWING DAY. ANY PORTION OF THE RIGHT-OF-WAY OR PROJECT LIMITS DISTURBED BY ANY SUCH OPERATIONS SHALL BE RESTORED TO AN ACCEPTABLE CONDITION. THIS OPERATION SHALL BE CONSIDERED INCIDENTAL TO OTHER BID ITEMS IN PROJECT.

19. THE CONTRACTOR MAY BE REQUIRED OR DIRECTED BY THE ENGINEER OR THE CITY TO PLACE TEMPORARY WARNING DEVICES AND SAFETY FENCE AT CERTAIN LOCATIONS WHERE REPLACEMENT FEATURES ARE NOT INSTALLED THE SAME DAY. THIS WILL BE INCIDENTAL TO THE BID ITEM - TEMPORARY TRAFFIC CONTROL.

20. BLADING AND SHAPING, AS WELL AS ANY OTHER INCIDENTAL WORK IN PREPARATION FOR AND MAINTENANCE OF TEMPORARY ACCESSES IS INCIDENTAL TO OTHER WORK ON THE PROJECT.

21. THE TOP EIGHT (8) INCHES OF DISTURBED (TOP SOIL) AREAS SHALL BE FREE OF ROCK AND DEBRIS AND SHALL BE SUITABLE FOR ESTABLISHMENT OF VEGETATION, SUBJECT TO THE APPROVAL OF THE ENGINEER.

22. CONTRACTOR SHALL MAINTAIN PROPERTY ACCESS FOR ADJACENT PROPERTIES IN ACCORDANCE WITH THE PLANS. THE COSTS INCURRED TO FACILITATE CONSTRUCTION PHASING OR TO MAINTAIN ACCESS SHALL BE INCIDENTAL TO THE PROJECT.

SHN-1

GENERAL NOTES

23. DO NOT RESTRICT DRAINAGE CHANNELS. CONTRACTOR IS FULLY LIABLE FOR ALL DAMAGES TO PUBLIC OR PRIVATE PROPERTY CAUSED BY THEIR ACTION OR INACTION IN PROVIDING FOR HANDLING OF STORM WATER FLOW DURING CONSTRUCTION.

24. THE PROJECT INVOLVES CONTACT WITH THE PUBLIC. THE CONTRACTOR IS ENCOURAGED TO PERFORM THEIR OPERATIONS AS PROFESSIONALLY AS POSSIBLE TO MINIMIZE CONFLICTS WITH THE PUBLIC.

25. THE CONTRACTOR IS REQUIRED TO REPLACE ALL CONTROL POINTS, PROPERTY CORNERS, AND MONUMENTS DISTURBED BY CONSTRUCTION. PRIOR TO GRADING, LOCATE EXISTING PROPERTY CORNERS, ESTABLISH COORDINATES AND TIES TO EXISTING FACILITIES WHICH ARE TO REMAIN, ESTABLISH HORIZONTAL AND VERTICAL CONTROL. REPLACE MONUMENTS AND BENCHMARKS AFTER CONSTRUCTION. WORK SHALL BE COMPLETED BY A LICENSED SURVEYOR.

26. THE CONTRACTOR IS RESPONSIBLE FOR REPLACING ANY AREAS OF PAVEMENT NOT TO BE REMOVED THAT IS DAMAGED DUE TO OPERATING EQUIPMENT ON THE PAVEMENT OR SIDEWALK. THE CONTRACTOR IS ENCOURAGED TO USE RUBBER WHEELED CONSTRUCTION EQUIPMENT WHEN WORKING ON THESE AREAS.

27. PROTECT EXISTING PAVEMENT NOT SCHEDULED FOR REMOVAL. REMOVE AND REPLACE TO LIMITS SHOWN ON DRAWINGS OR AS DIRECTED BY ENGINEER. REMOVE AND REPLACE SURFACING DAMAGED BY CONSTRUCTION OPERATIONS BUT BEYOND REMOVAL LIMITS WITHOUT ADDITIONAL COMPENSATION.

28. CONTRACTOR IS RESPONSIBLE FOR KEEPING DIRT AND DEBRIS DEPOSITED BY CONSTRUCTION ACTIVITY OFF ADJACENT LANES, STREETS, AND DRIVEWAYS.

29. CONTRACTOR SHALL COMPLETE SEEDING OPERATIONS IN STAGES AND AS WORK AREAS BECOME AVAILABLE SUCH THAT SEEDING IS COMPLETED WITHIN THE REQUIRED TIME FRAME AND WEATHER LIMITATIONS.

30. CONTRACTOR SHALL USE CAUTION TO NOT DAMAGE IRRIGATION OUTSIDE OF THE WORK AREA. ANY IRRIGATION ENCOUNTERED DURING THE PROJECT SHALL BE CUT, CAPPED AND MARKED FOR FUTURE REPAIR.

31. CONTRACTOR SHALL COORDINATE TIMING OF WORK WITH BONDURANT LITTLE LEAGUE AND THEIR GAME SCHEDULE.

32. CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PROTECT WORK FROM VANDALISIM.

33. CONTRACTOR SHALL TAKE MEASURES TO PROTECT THE PUBLIC FROM HARM CAUSED BY CONSTRUCTION AND LEAVE THE SITE IN A SAFE CONDITION WHEN DONE FOR EACH DAY.

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West Des Moines, Iowa 50266
515.223.8104 | shive-hattery.com

CITY OF Bondurant

SH PROJECT NO: 2142301580
CLIENT PROJECT NO:

DRAWN BY: MAM
APPROVED BY: DRF
DATE: 5/17/2024

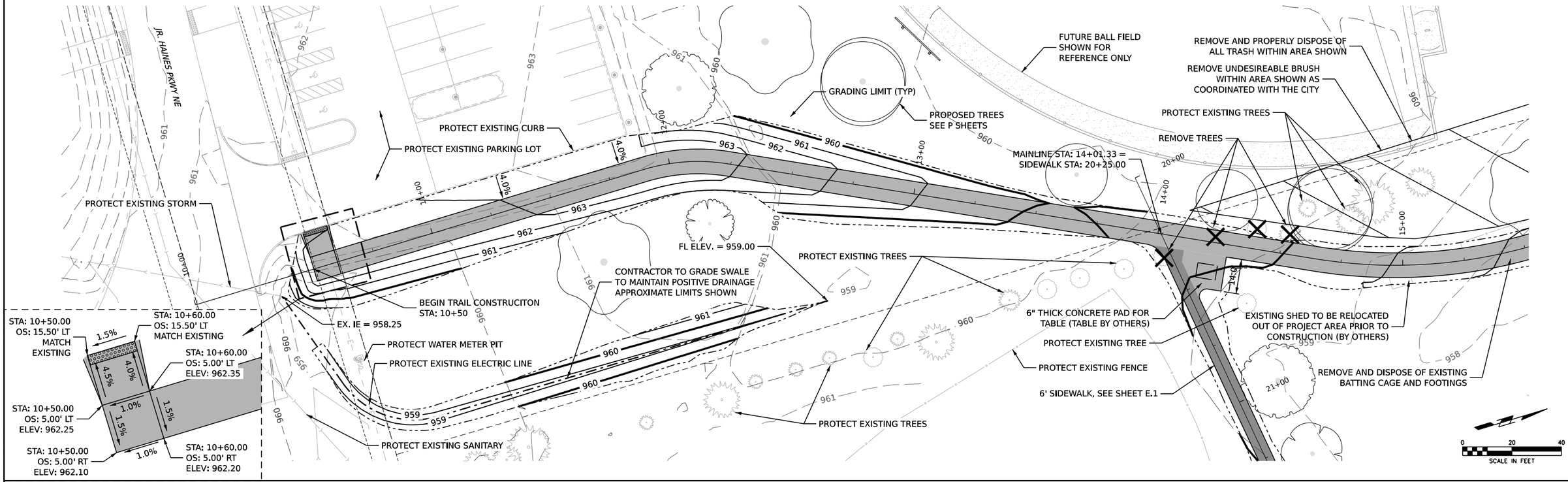
NO.	REVISION DESCRIPTION	APPROVED	DATE

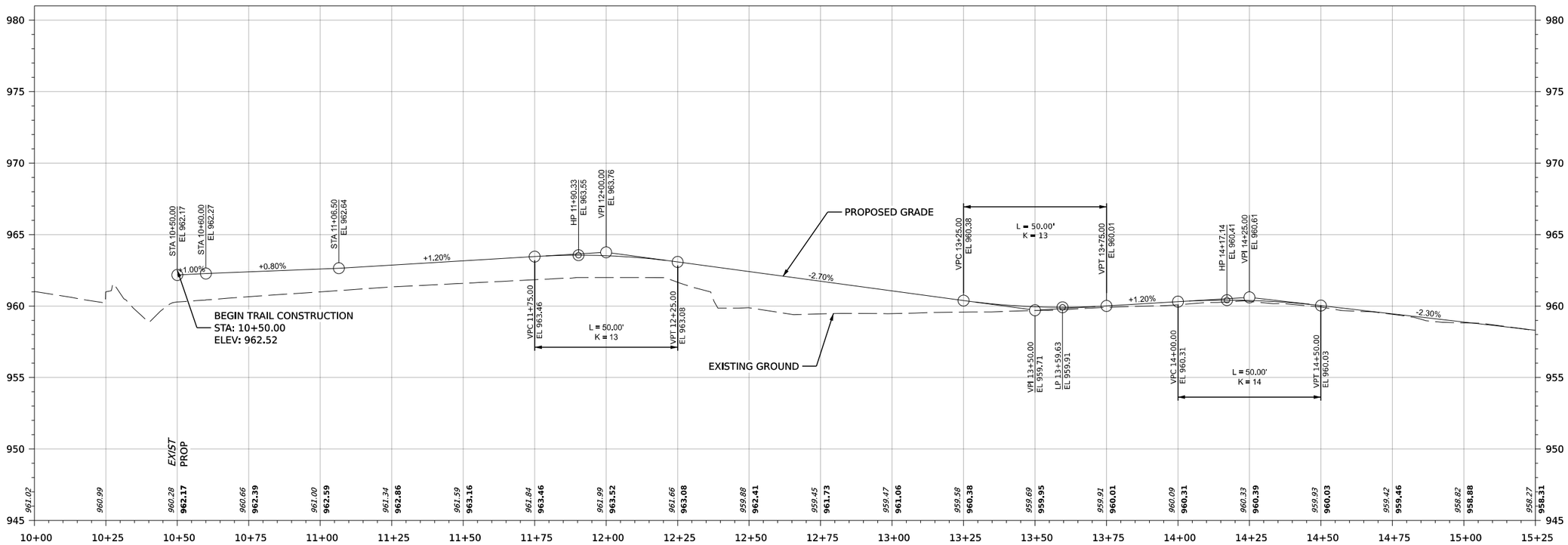
PARK SIDE SUBDIVISION TO
CHICHAQUA VALLEY TRAIL CONNECTION

GENERAL NOTES

C.4

MManzer P:\Projects\DM\2142301580\Deliverables\Drawings\plans\C_Quantities and General Information\C-Sheets.dgn 5/16/2024 9:24:07 AM


JR. HAINES PKWY NE
PROTECT EXISTING CURB
PROTECT EXISTING PARKING LOT
PROTECT EXISTING STORM
GRADING LIMIT (TYP)
PROPOSED TREES SEE P SHEETS
FUTURE BALL FIELD SHOWN FOR REFERENCE ONLY
REMOVE AND PROPERLY DISPOSE OF ALL TRASH WITHIN AREA SHOWN
REMOVE UNDESIREABLE BRUSH WITHIN AREA SHOWN AS COORDINATED WITH THE CITY
PROTECT EXISTING TREES
REMOVE TREES
MAINLINE STA: 14+01.33 = SIDEWALK STA: 20+25.00
FL ELEV. = 959.00
CONTRACTOR TO GRADE SWALE TO MAINTAIN POSITIVE DRAINAGE APPROXIMATE LIMITS SHOWN
BEGIN TRAIL CONSTRUCITON STA: 10+50
EX. IE = 958.25
PROTECT WATER METER PIT
PROTECT EXISTING ELECTRIC LINE
PROTECT EXISTING SANITARY
PROTECT EXISTING TREES
6" THICK CONCRETE PAD FOR TABLE (TABLE BY OTHERS)
PROTECT EXISTING TREE
PROTECT EXISTING FENCE
6' SIDEWALK, SEE SHEET E.1
EXISTING SHED TO BE RELOCATED OUT OF PROJECT AREA PRIOR TO CONSTRUCTION (BY OTHERS)
REMOVE AND DISPOSE OF EXISTING BATTING CAGE AND FOOTINGS
STA: 10+50.00 OS: 15.50' LT MATCH EXISTING
STA: 10+60.00 OS: 15.50' LT MATCH EXISTING
STA: 10+60.00 OS: 5.00' LT ELEV: 962.35
STA: 10+50.00 OS: 5.00' LT ELEV: 962.25
STA: 10+50.00 OS: 5.00' RT ELEV: 962.10
STA: 10+60.00 OS: 5.00' RT ELEV: 962.20
1.5%
4.5%
4.0%
1.0%
1.5%
SCALE IN FEET
0
20
40


PROPOSED GRADE
EXISTING GROUND
BEGIN TRAIL CONSTRUCTION STA: 10+50.00 ELEV: 962.52
STA 10+50.00 EL 962.17
STA 10+60.00 EL 962.27
STA 11+06.50 EL 962.64
HP 11+90.33 EL 963.55
VPI 12+00.00 EL 963.76
VPC 11+75.00 EL 963.46
VPT 12+25.00 EL 963.08
L = 50.00' K = 13
VPC 13+25.00 EL 960.38
VPI 13+50.00 EL 959.71
LP 13+59.63 EL 959.91
VPT 13+75.00 EL 960.01
HP 14+17.14 EL 960.41
VPI 14+25.00 EL 960.61
VPC 14+00.00 EL 960.31
VPT 14+50.00 EL 960.03
L = 50.00' K = 14
+0.80%
+1.20%
-2.70%
-2.30%
EXIST
PROP

| | | |

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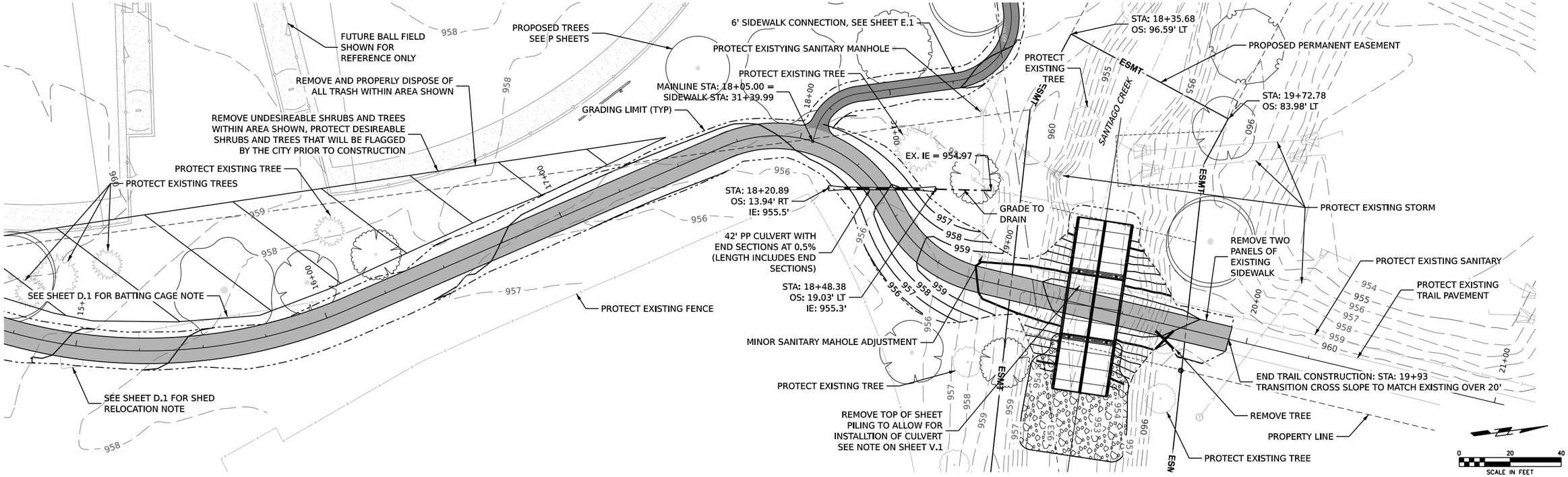
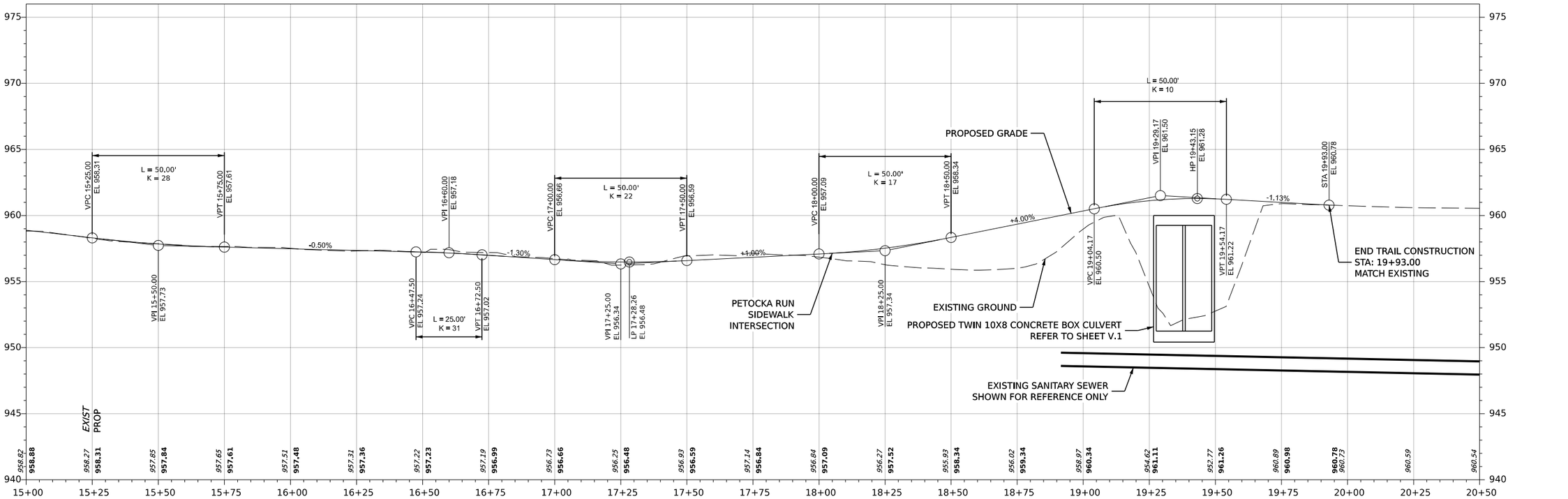
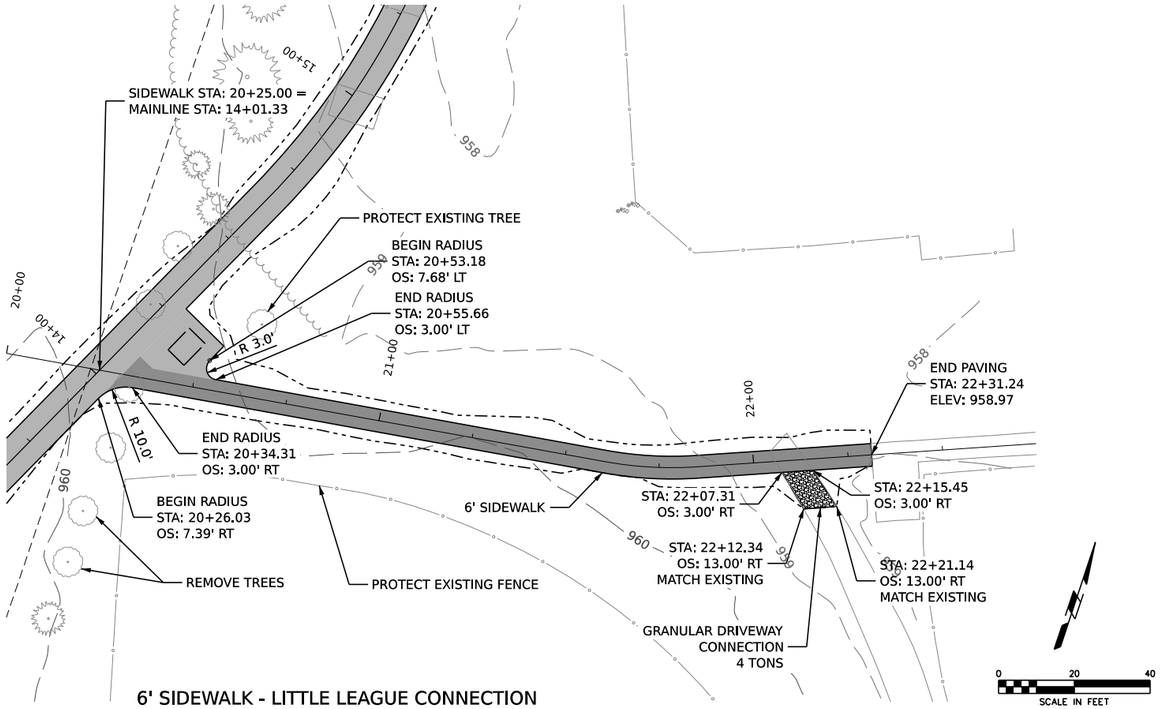
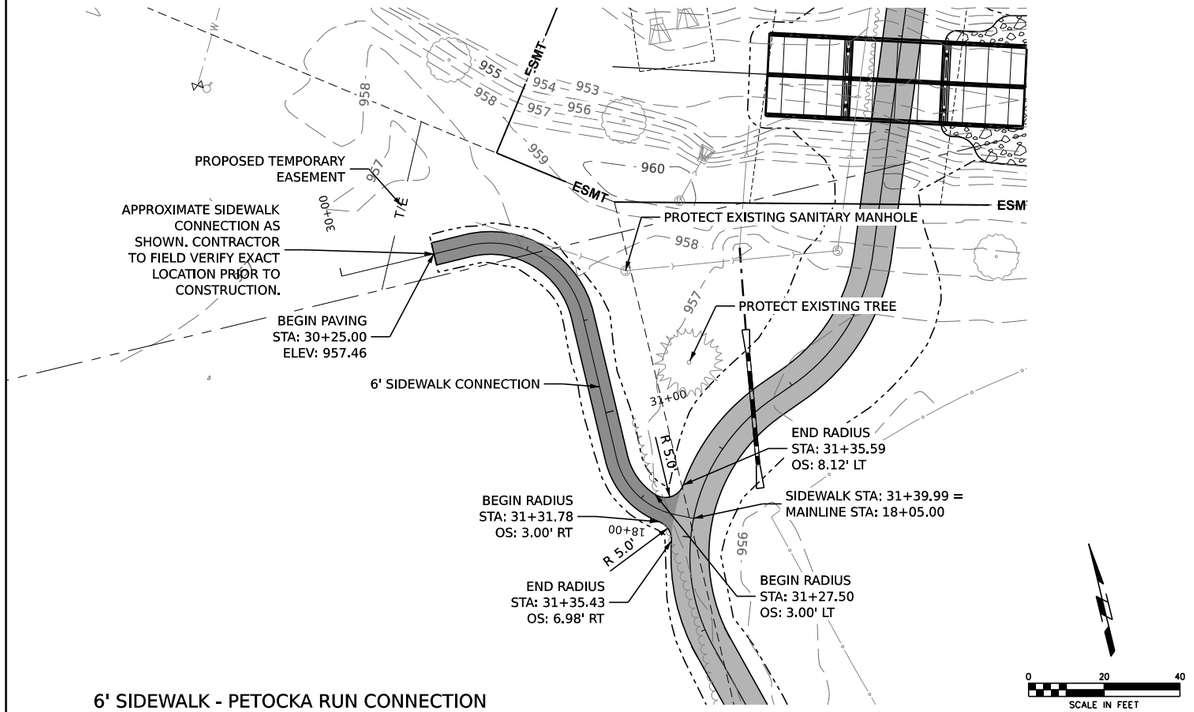




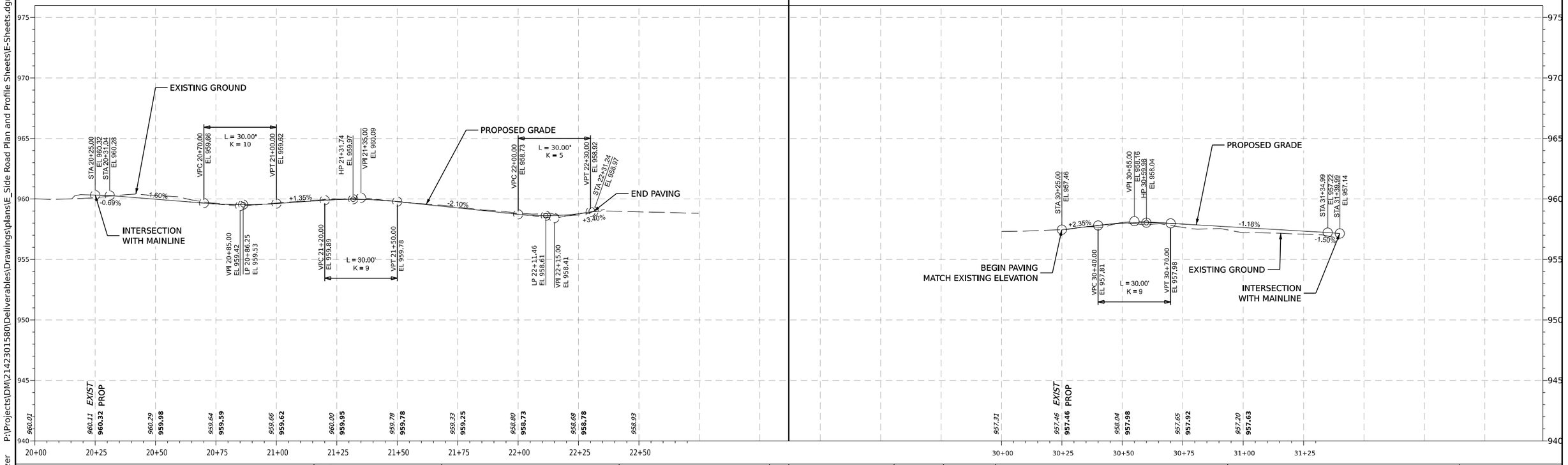
SHIVEHATTERY ARCHITECTURE+ENGINEERING 4125 Westown Parkway Suite 100 West Des Moines, Iowa 50266 515.223.8104 | shive-hattery.com	CITY OF Bondurant	SH PROJECT NO: 2142301580 CLIENT PROJECT NO:	DRAWN BY: MAM APPROVED BY: DRF DATE: 5/17/2024	NO. REVISION DESCRIPTION APPROVED DATE	PARK SIDE SUBDIVISION TO CHICHAQUA VALLEY TRAIL CONNECTION MAINLINE PLAN AND PROFILE D.2



6' SIDEWALK - LITTLE LEAGUE CONNECTION



6' SIDEWALK - PETOCKA RUN CONNECTION



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CITY OF Bondurant

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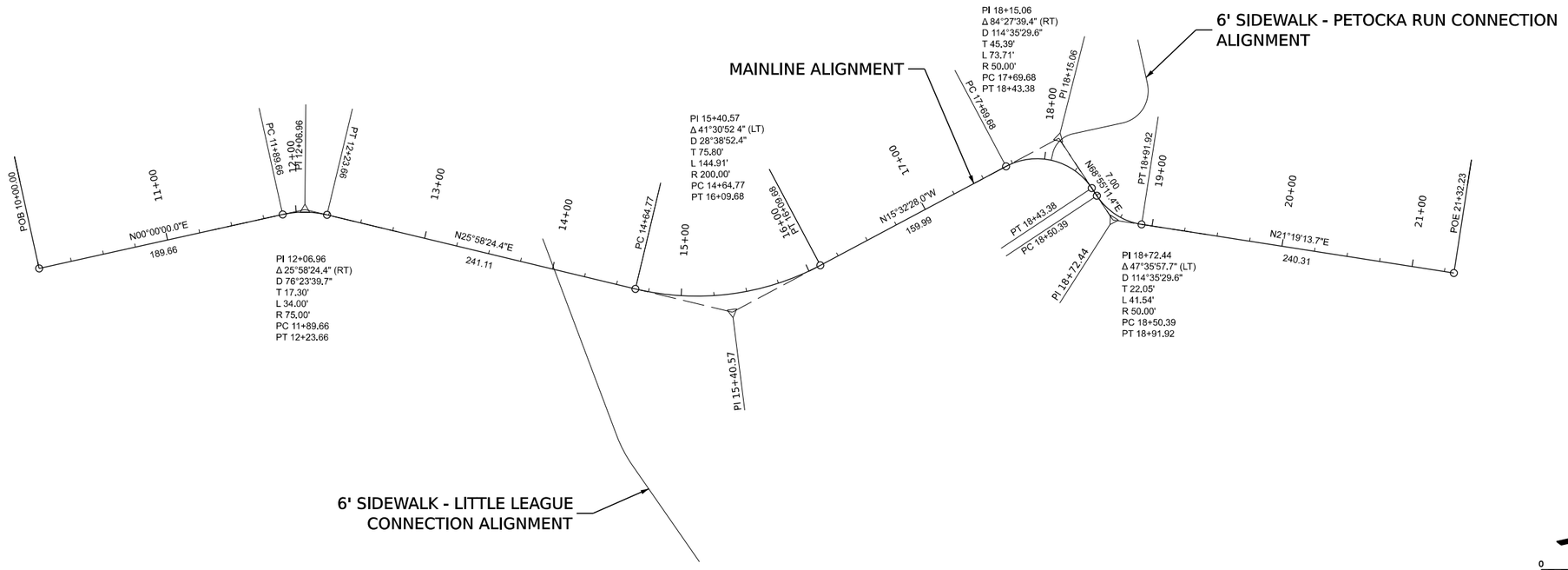
NO.	REVISION DESCRIPTION	APPROVED	DATE

PARK SIDE SUBDIVISION TO
CHICHAQUA VALLEY TRAIL CONNECTION

SIDEWALK CONNECTION PLAN AND PROFILE

E.1



ALIGNMENT DATA - MAINLINE										
BEARING	DISTANCE (FEET)	NORTHING (Y)	EASTING (X)	PC	PI	PT	DELTA	R	L	T
N00°00'00.0"E	189.66 '	622253.179	1656681.565		10+00.00					
N25°58'24.4"E	258.40 '	622460.138	1656681.565	11+89.66		12+23.66	25°58'24.4"	75.00 '	34.00 '	17.30 '
N15°32'28.0"W	235.80 '	622760.588	1656827.932	14+64.77		16+09.68	41°30'52.4"	-200.00 '	144.91 '	75.80 '
N68°55'11.4"E	52.39 '	623031.489	1656752.595	17+69.68		18+43.38	84°27'39.4"	50.00 '	73.71 '	45.39 '
N21°19'13.7"E	262.36 '	623058.265	1656822.056	18+50.39		18+91.92	47°35'57.7"	-50.00 '	41.54 '	22.05 '
		623302.668	1656917.446		21+32.23					

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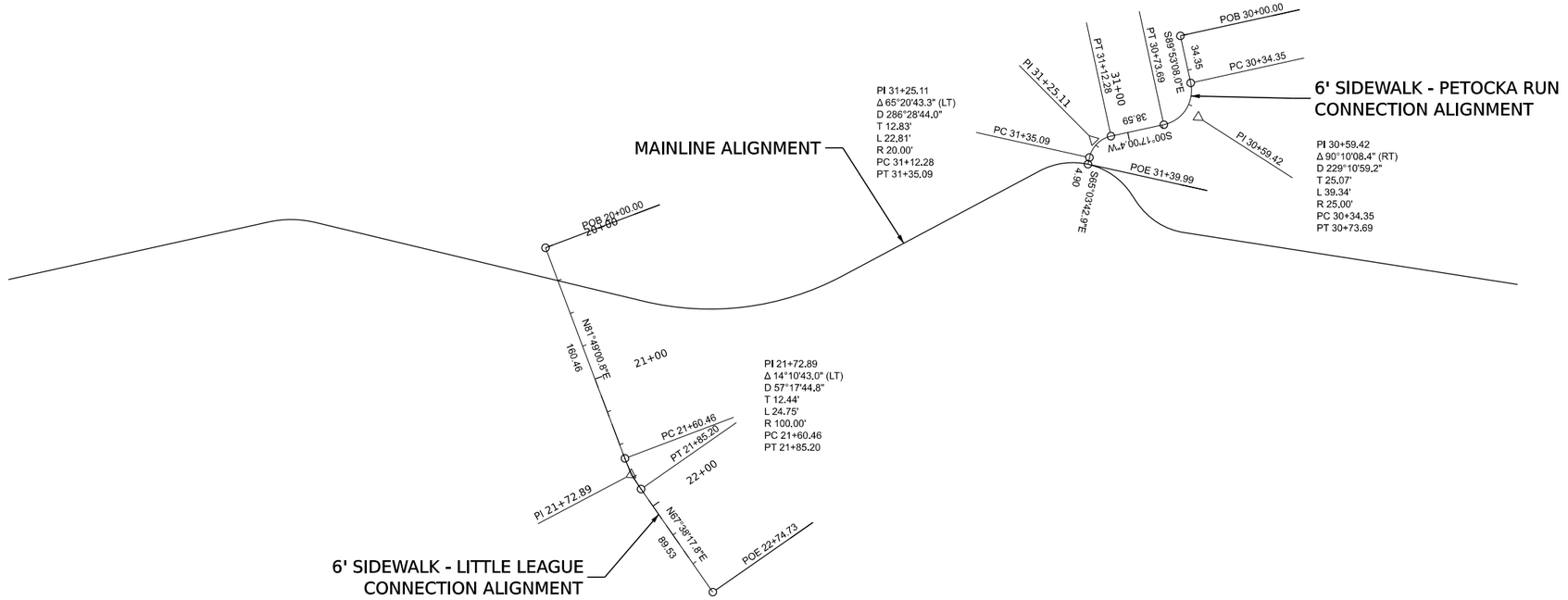
PARK SIDE SUBDIVISION TO CHICHAQUA VALLEY TRAIL CONNECTION

ALIGNMENT DATA

G.1

MManzer P:\Projects\DM\2142301580\Deliverables\Drawings\plans\G_Survey Sheets\G-Sheets.dgn 5/16/2024 9:25:00 AM



ALIGNMENT DATA - 6' SIDEWALK

BEARING	DISTANCE (FEET)	NORTHING (Y)	EASTING (X)	PC	PI	PT	DELTA	R	L	T
N81°49'00.8"E	160.46 '	622631.853	1656742.206		20+00.00					
N67°38'17.8"E	101.96 '	622656.463	1656913.339	21+60.46		21+85.20	14°10'43.0"	-100.00 '	24.75 '	12.44 '
		622695.255	1657007.634		22+74.73					

ALIGNMENT DATA - 6' SIDEWALK PETOCKA RUN

BEARING	DISTANCE (FEET)	NORTHING (Y)	EASTING (X)	PC	PI	PT	DELTA	R	L	T
S89°53'08.0"E	34.35 '	623106.324	1656692.477		30+00.00					
S00°17'00.4"W	63.67 '	623106.205	1656751.897	30+34.35		30+73.69	90°10'08.4"	25.00 '	39.34 '	25.07 '
S65°03'42.9"E	17.72 '	623029.714	1656751.519	31+12.28		31+35.09	65°20'43.3"	-20.00 '	22.81 '	12.83 '
		623022.242	1656767.589		31+39.99					

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PARK SIDE SUBDIVISION TO
CHICHAQUA VALLEY TRAIL CONNECTION

ALIGNMENT DATA

G.2

MManzer P:\Projects\DM\2142301580\Deliverables\Drawings\plans\G_Survey Sheets\G-Sheets.dgn 5/16/2024 9:25:05 AM

SYMBOL	CODE	QTY	BOTANICAL NAME
PLUG PERENNIALS & GRASSES MIX			
	SEE DDT	3,647 sf	Custom Pollinator Seed Mix
	SUD NAT	2,567	Native Plugs
	SUD TYP	36,908 sf	Sudas Type 1 Permanent Lawn Mix
	SUD CYM	4,820 sf	Sudas Type 3 Permanent Warm-Season Slope & Ditc
	SEE AIT	14,524 sf	Sudas Wetland Grass Seed Mixture

(1) GYM DIO
(1) GLE SKY
5.00'
(1) QUE RUB
(1) CAR CAR
14.00'
11.00'
(1) GLE SKY
2" HARDWOOD MULCH IN PLANTING BEDS WITH PLUGS.
5.00'
2" HARDWOOD MULCH IN PLANTING BEDS WITH PLUGS.
CONCRETE PAD (SEE DIMENSIONS ON D.1)
(1) GYM DIO
FUTURE BALLFIELDS SHOWN FOR REFERENCE ONLY
(1) QUE SHU
(1) QUE RUB
(1) BET RIV
(1) QUE SHU
SEEDING LIMITS, TYP.
GRADING LIMITS
EXISTING PARKING LOT
JR HAINES PKWY
NORTH
0
50
100
Feet

$USERNAME,FILEPATH,DATE_PLOTSTAMP$

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CITY OF Bondurant

SH PROJECT NO: 2142301580
CLIENT PROJECT NO:

DRAWN BY: BMV
APPROVED BY: HCR
DATE: 12/15/2023

NO.	REVISION DESCRIPTION	APPROVED	DATE

PARK SIDE SUBDIVISION TO CHICHAQUA VALLEY TRAIL CONNECTION

LANDSCAPE PLAN

P. 1

SANTIAGO CREEK

DECORATIVE RAILING

SANTIAGO CREEK

(1) BET RIV

(1) GYM DIO
(1) QUE RUB
(1) CAR CAR

(1) BET RIV
(1) CAR CAR

2" HARDWOOD MULCH IN PLANTING BEDS WITH PLUGS.

PROTECT EXISTING TREES

(1) QUE SHU
(1) GLE SKY

5.00'

2" HARDWOOD MULCH IN PLANTING BEDS WITH PLUGS.

(1) BET RIV

SEEDING LIMITS, TYP.

(1) CAR CAR
(1) QUE SHU

GRADING LIMITS

FUTURE BALLFIELDS SHOWN FOR REFERENCE ONLY

5.00'

(1) GYM DIO
(1) GLE SKY

(1) QUE RUB
(1) CAR CAR

SYMBOL	CODE	QTY	BOTANICAL NAME
PLUG PERENNIALS & GRASSES MIX			
	SEE DDT	3,647 sf	Custom Pollinator Seed Mix
	SUD NAT	2,567	Native Plugs
	SUD TYP	36,908 sf	Sudas Type 1 Permanent Lawn Mix
	SUD CYM	4,820 sf	Sudas Type 3 Permanent Warm-Season Slope & Ditc
	SEE AIT	14,524 sf	Sudas Wetland Grass Seed Mixture

NORTH

0 50 100 Feet

$USERNAME,FILEPATH,DATE_PLOTSTAMP$

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West Des Moines, Iowa 50266
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PARK SIDE SUBDIVISION TO CHICHAQUA VALLEY TRAIL CONNECTION

LANDSCAPE PLAN

P. 2

FISHING NODES, REFER TO SHEET P.5

4' GRAVEL TRAIL

(1) CEL CHI

(1) GYM DIO

CONTRACTOR TO PROTECT EXISTING TRAIL.

10'X8' CONCRETE PAD

10.00'

8.00'

5.00'

(1) CAR CAR

(1) CEL CHI

SEED LIMITS, TYP.

MCINTOSH DRIVE

2" HARDWOOD MULCH IN PLANTING BEDS WITH PLUGS.

(1) QUE SHU

(1) GLE SKY

MCINTOSH DRIVE

2" HARDWOOD MULCH IN PLANTING BEDS WITH PLUGS.

CONTRACTOR TO PROTECT EXISTING TRAIL.

(1) CEL CHI

(1) GYM DIO

5.00'

SANTIAGO CREEK

CAR CAR

SYMBOL	CODE	QTY	BOTANICAL NAME
PLUG PERENNIALS & GRASSES MIX			
	SEE DDT	3,647 sf	Custom Pollinator Seed Mix
	SUD NAT	2,567	Native Plugs
	SUD TYP	36,908 sf	Sudas Type 1 Permanent Lawn Mix
	SUD CYM	4,820 sf	Sudas Type 3 Permanent Warm-Season Slope & Ditc
	SEE AIT	14,524 sf	Sudas Wetland Grass Seed Mixture

NORTH

0 50 100 Feet

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SHIVEHATTERY ARCHITECTURE + ENGINEERING
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West Des Moines, Iowa 50266
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CITY OF Bondurant

SH PROJECT NO: 2142301580
CLIENT PROJECT NO:

DRAWN BY: BMV
APPROVED BY: HCR
DATE: 12/15/2023

NO.	REVISION DESCRIPTION	APPROVED	DATE

PARK SIDE SUBDIVISION TO CHICHAQUA VALLEY TRAIL CONNECTION

LANDSCAPE PLAN

P. 3

PLANT SCHEDULE

SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	ROOT	SIZE	
TREES							
	BET RIV	4	Betula nigra	River Birch	B & B	2"Cal	
	CAR CAR	6	Carpinus caroliniana	American Hornbeam	B & B	2"Cal	
	CEL CHI	3	Celtis occidentalis 'Chicagoland'	Chicagoland Hackberry	B & B	2"Cal	
	GLE SKY	4	Gleditsia triacanthos inermis 'Skyline'	Skyline Honey Locust	B & B	2"Cal	
	GYM DIO	5	Gymnocladus dioica 'Espresso'	Kentucky Coffeetree	B & B	2"Cal	
	QUE RUB	3	Quercus rubra	Northern Red Oak	B & B	2"Cal	
	QUE SHU	5	Quercus shumardii	Shumard Oak	B & B	2"Cal	

SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE		SPACING
PLUG PERENNIALS & GRASSES MIX							
	SEE DDT	3,647 sf	Custom Pollinator Seed Mix		SEED		
	SUD NAT	2,567	Native Plugs		6" PLUG		18" o.c.
	SUD TYP	36,908 sf	Sudas Type 1 Permanent Lawn Mix		SEED		
	SUD CYM	4,820 sf	Sudas Type 3 Permanent Warm-Season Slope & Ditc	Seed Mix w/ Erosion Control Blanket	SEED		
	SEE AIT	14,524 sf	Sudas Wetland Grass Seed Mixture	Wetland Mix w/ Erosion Control Blanket	SEED		

Custom Pollinator Seed Mix: Little Buckaroo Native Mixture by United Seed Inc. with the addition of the following species: Purple Coneflower (Echinacea purpurea), Black Eyed Susan (Rudbeckia hirta), Butterfly Milkweed (Asclepias tuberosa) or approved equal.

Native Plugs: Provide equal quantities; Shenandoah Switch Grass (Panicum virgatum 'Switchgrass'), Little Bluestem (Schizachyrium scoparium), Sideoats Grama (Bouteloua curtipendula), Purple Coneflower (Echinacea purpurea), Black Eyed Susan (Rudbeckia hirta), Butterfly Milkweed (Asclepias tuberosa)

Sudas Wetland Grass Seed Mixture: Replace Big Bluestem (Andropogon gerardii) with Little Bluestem (Schizachyrium scoparium)

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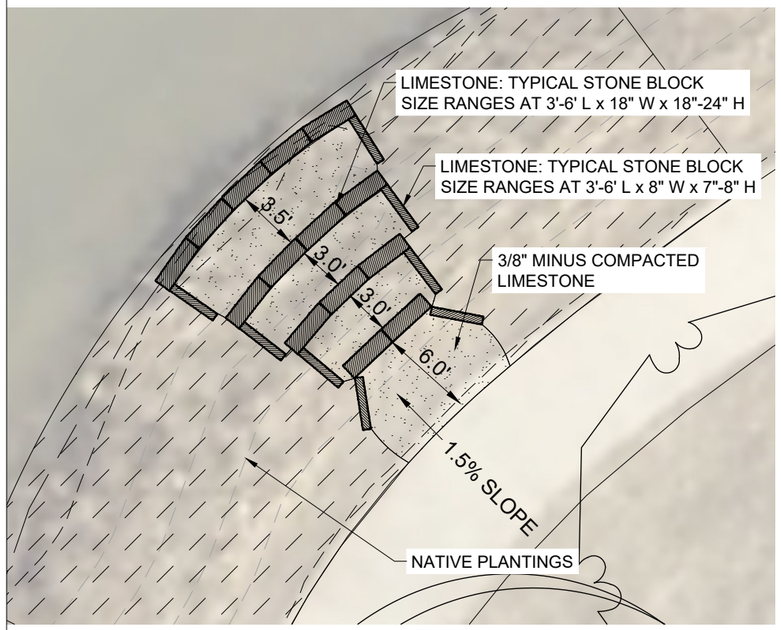
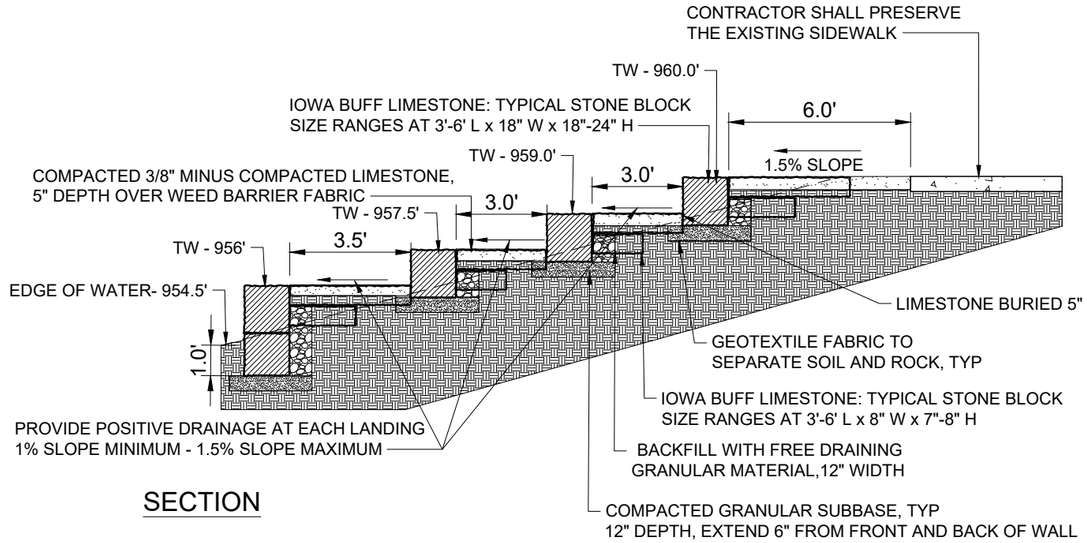


1 EAST TERRACE

NTS



SECTION

GENERAL NOTES:

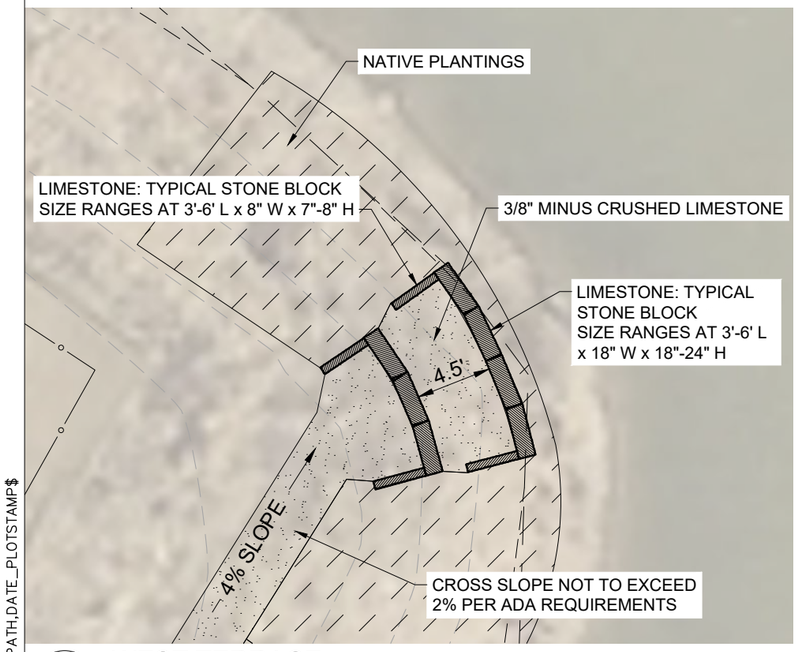
1. CONTRACTOR MUST SUBMIT BUILDING METHOD AND LAYOUT TO CLIENT REPRESENTATIVE.
2. THE CONTRACTOR MUST SUBMIT LIMESTONE BLOCK SAMPLE IMAGES TO CLIENT REPRESENTATIVE BEFORE CONSTRUCTION.
3. PROVIDE A SPADE CUT EDGE BETWEEN 3/8" MINUS STONE W/ FINES AND TURF UNLESS OTHERWISE NOTED.
4. BLOCK SIZES, LAYOUT, AND ELEVATIONS AS PROVIDED ARE APPROXIMATE AND WILL VARY BASED ON ACTUAL SIZE OF BLOCK.

EAST TERRACE WALL NOTES:

1. LINEAR FEET OF WALL 1 = 17'
2. LINEAR FEET OF WALL 2 = 14'
3. LINEAR FEET OF WALL 3 = 11'
4. LINEAR FEET OF WALL 4 = 7'
5. TOTAL SQFT OF 3/8" MINUS ROADSTONE = 180 SQFT

WEST TERRACE WALL NOTES:

1. LINEAR FEET OF WALL 1 = 14'
2. LINEAR FEET OF WALL 2 = 11'
3. TOTAL SQFT OF 3/8" MINUS ROADSTONE = 100 SQFT (DOES NOT INCLUDE PATH)



2 WEST TERRACE

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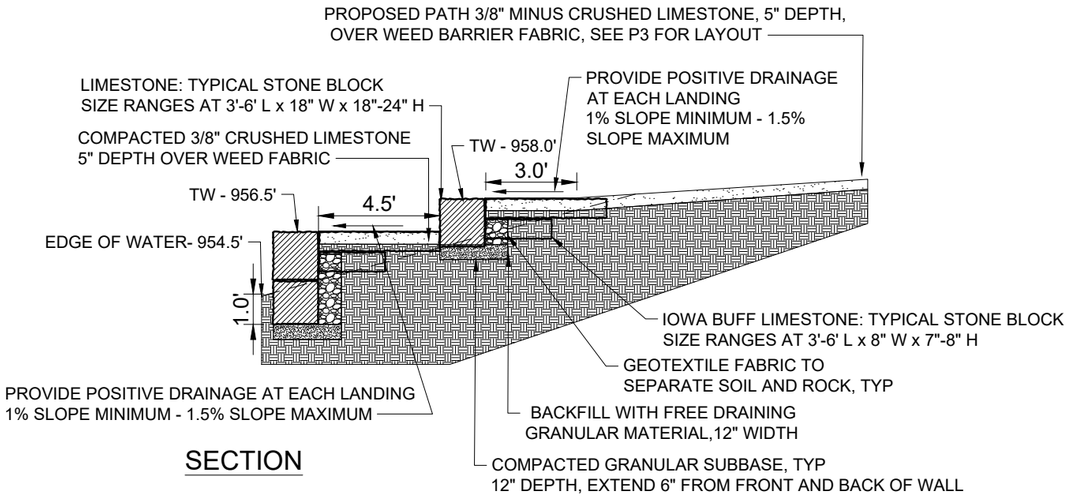

SECTION

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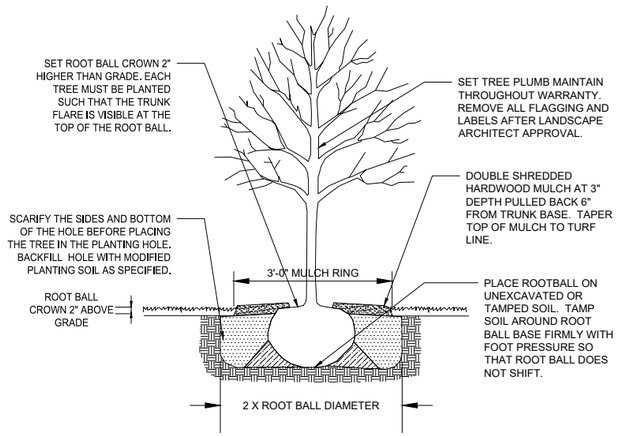
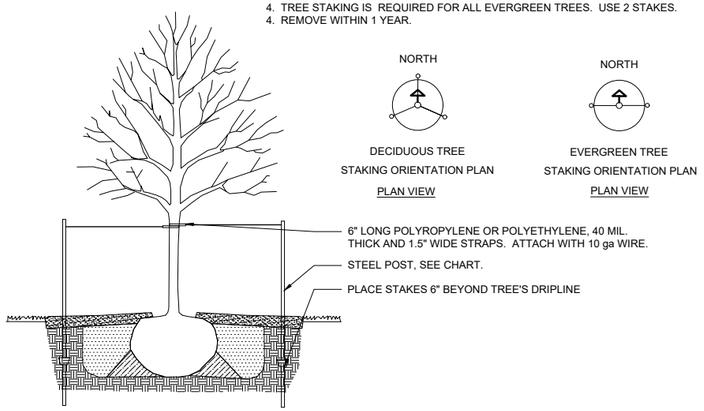
CITY OF Bondurant	SH PROJECT NO: 2142301580 CLIENT PROJECT NO:	DRAWN BY: BMV APPROVED BY: HCR DATE: 12/15/2023	NO.	REVISION DESCRIPTION	APPROVED	DATE	PARK SIDE SUBDIVISION TO CHICHAQUA VALLEY TRAIL CONNECTION	FISHING NODE DETAIL	P. 5



1 DECIDUOUS TREE PLANTING
NTS

NOTES:
1. STEEL POSTS TO BE NOTCHED OR DRILLED TO RETAIN GUY WIRES. PLACE OUTSIDE OF PLANTING HOLE. DRIVE PLUMB REGARDLESS OF GROUND SLOPE.
3. TREE STAKING IS REQUIRED FOR ALL DECIDUOUS TREES. USE 3 STAKES.
4. TREE STAKING IS REQUIRED FOR ALL EVERGREEN TREES. USE 2 STAKES.
4. REMOVE WITHIN 1 YEAR.



DECIDUOUS TREE
STAKING ORIENTATION PLAN
PLAN VIEW

EVERGREEN TREE
STAKING ORIENTATION PLAN
PLAN VIEW

2 TREE STAKING DETAIL
NTS

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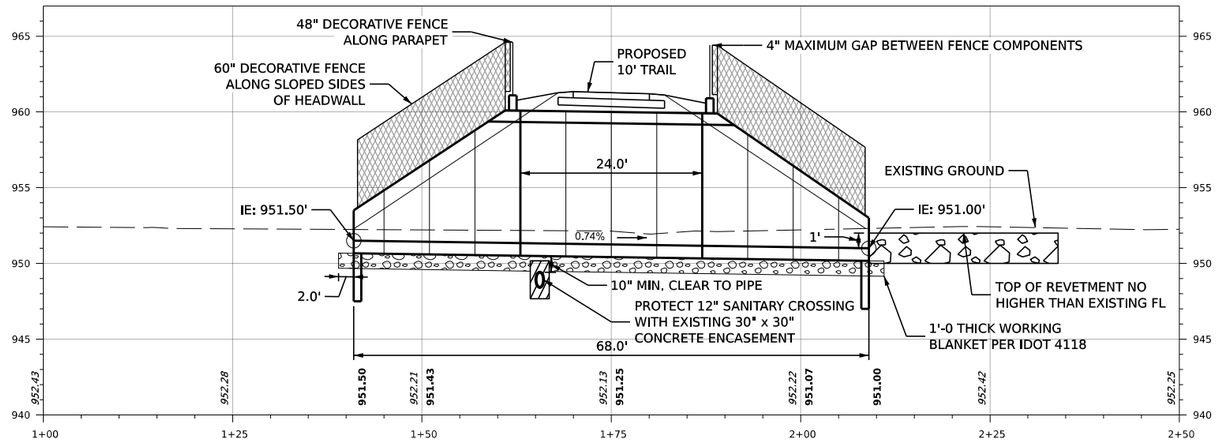
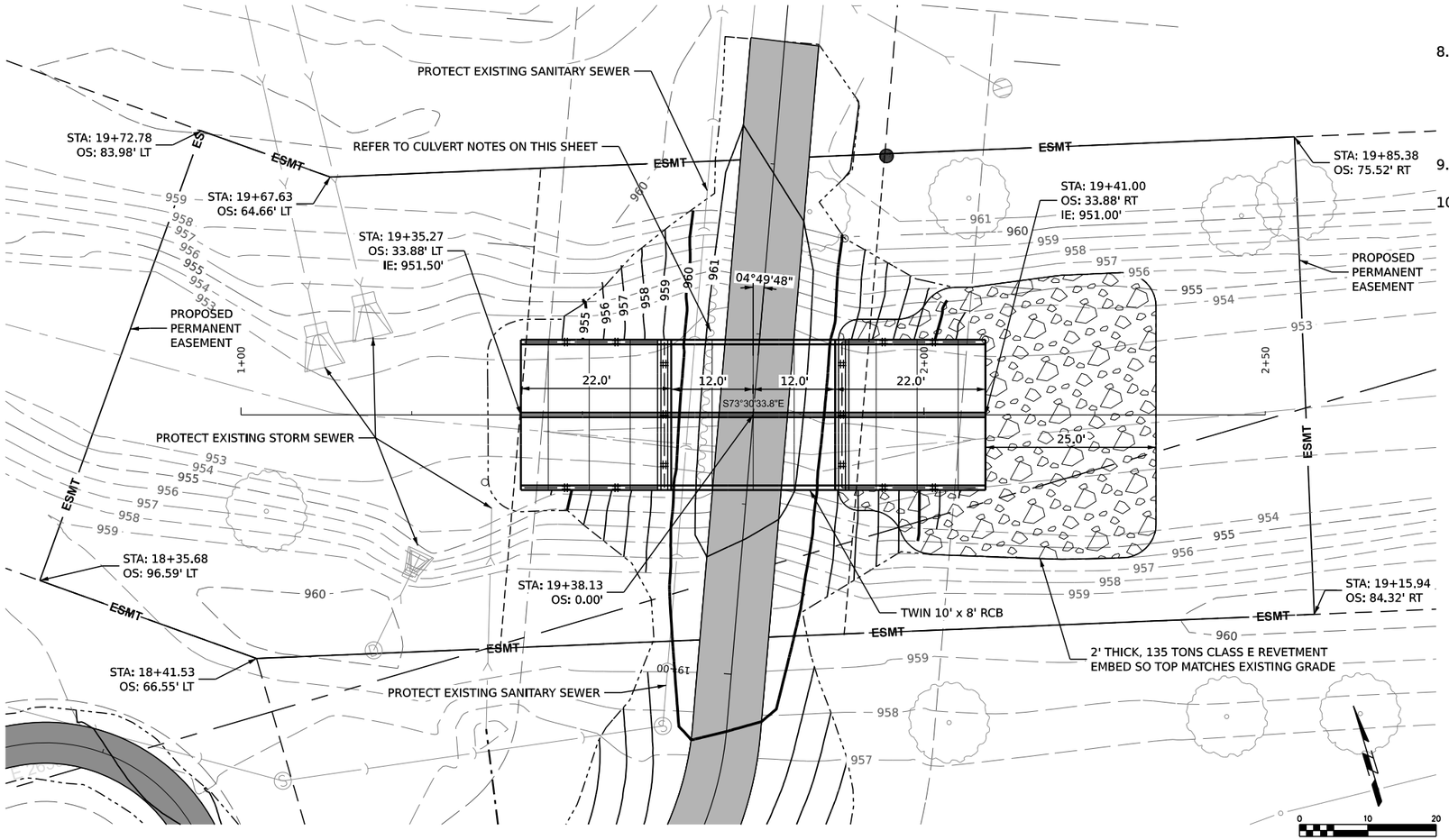
PARK SIDE SUBDIVISION TO CHICHAQUA VALLEY TRAIL CONNECTION

PLANTING DETAILS

P. 6



SECTION ALONG CENTERLINE OF CULVERT



CULVERT SITUATION PLAN

CULVERT NOTES:

1. BASIS OF DESIGN IS IOWA DOT PRECAST REINFORCED CONCRETE BOX CULVERT STANDARDS.
2. CULVERT MAY BE PRECAST OR CAST IN PLACE SUBJECT TO APPROVED SUBMITTALS. THE SUBMITTED CULVERT SHALL MEET THE STRUCTURAL LOADING, HYDRAULIC CAPACITY, AND DIMENSIONS AS SHOWN ON THE PLANS. CONTRACTOR SHALL ALLOW TEN WORKING DAYS FOR THE ENGINEER TO REVIEW.
3. REFER TO IOWA DOT LRFD PRECAST CULVERT STANDARDS PRCB 10-20, PES 1-20-T1, PES 2-20-T1, AND IOWA DOT LRFD PRECAST CULVERT WORKSHEET 1082P IF PRECAST OPTION IS CHOSEN.
4. PRECAST CULVERT MAY BE CONSTRUCTED AS TWO SINGLE CELL SIDE BY SIDE CULVERTS OR AS ONE MONOLITHIC DOUBLE CELL.
5. REFER TO IOWA DOT TWIN RCB WITH PARALLEL WING HEADWALL STANDARDS TWRCB 10-8-20, TWPWH 0-1-20, TWPWH 0-2-20, TWPWH 0-3-20, TWPWH 0-4-20, TWPWH 0-5-20, AND TWPWH 0-7-20 IF CAST IN PLACE OPTION IS CHOSEN.
6. IF THE CAST IN PLACE OPTION IS CHOSEN, THE CONTRACTOR WILL BE PAID BY THE COMBINED PRECAST UNIT BID PRICE FOR THE CULVERT AND THE LUMP SUM BID PRICE FOR EACH OF THE TWO END SECTIONS. THE CAST IN PLACE OPTION WILL NOT WARRANT A CHANGE IN THE CONTRACT BID AMOUNT.
7. REMOVE TOP OF SHEET PILING TO 1' MIN. BELOW BASE OF PROPOSED CULVERT. EXISTING PILING IS 12' LONG, 3/8" THICK INTERLOCKING WEB SHEET PILES. REMOVAL OF SHEET PILING AS NEEDED SHALL BE CONSIDERED INCIDENTAL TO THE REMOVALS PER PLAN ITEM.
8. EXPOSE TOP OF EXISTING CONCRETE ENCASEMENT AND PLACE WORKING BLANKET ROCK DIRECTLY ON TOP OF ENCASEMENT. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN COMPACTING ADJACENT TO EXISTING SANITARY SEWER. CONTRACTOR SHALL REMOVE THE TOP OF THE ENCASEMENT TO ALLOW FOR INSTALLATION OF CULVERT IF NECESSARY. REMOVAL OF ENCASEMENT AS NEEDED SHALL BE CONSIDERED INCIDENTAL TO THE REMOVALS PER PLAN ITEM.
9. REMOVE EXISTING CLASS E REVETMENT, USE FOR TEMPORARY CHECK DAM, AND REPLACE REVETMENT AS SHOWN.
10. CONTRACTOR SHALL TELEVISE THE EXISTING SANITARY BEFORE CONSTRUCTION STARTS AND AFTER INSTALLATION OF THE BOX CULVERT. TELEVISING OF SEWER SHALL BE CONSIDERED INCIDENTAL TO THE RCB BARREL ITEM.

HYDRAULIC DATA

DRAINAGE AREA = 2.2 square miles

Q50 = 535 cfs
Q100 = 664 cfs
Q500 = 1005 cfs

Q100 HIGH WATER ELEVATION = 958.34'

DESIGN FOR
TWIN 10' x 8' x 24' (CLASS 1) REINFORCED CONCRETE BOX CULVERT

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PARK SIDE SUBDIVISION TO CHICHAQUA VALLEY TRAIL CONNECTION	CULVERT SITUATION PLAN	V.1			

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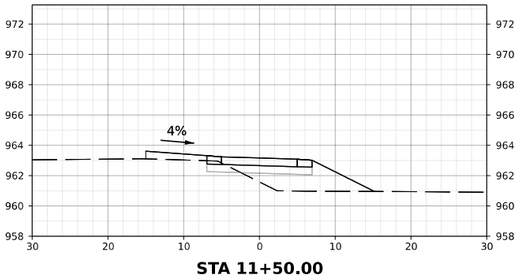

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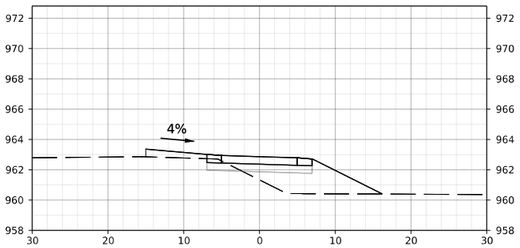

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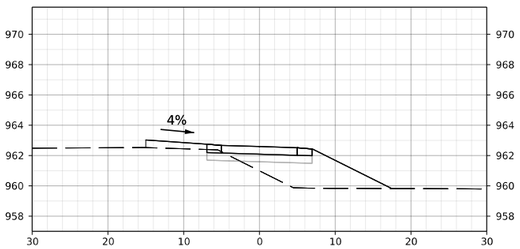

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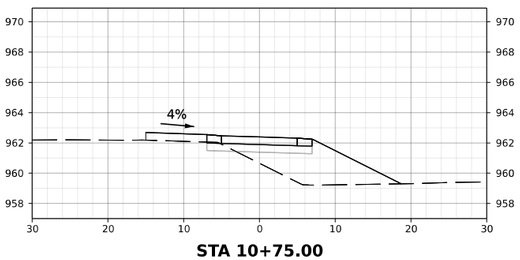

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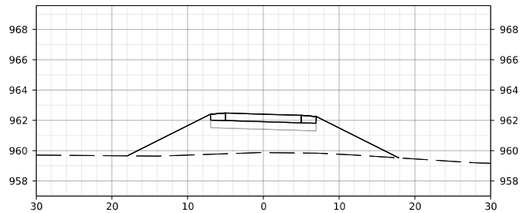

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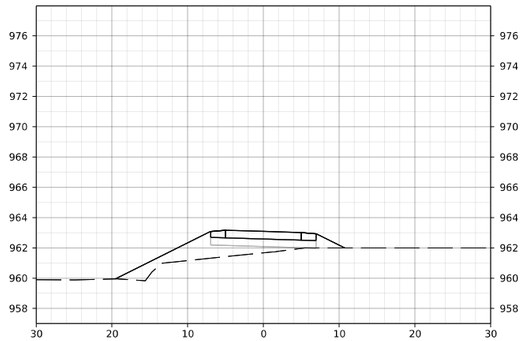

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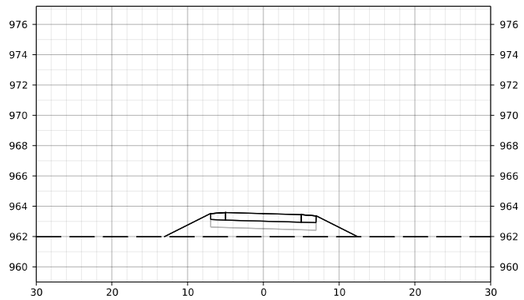

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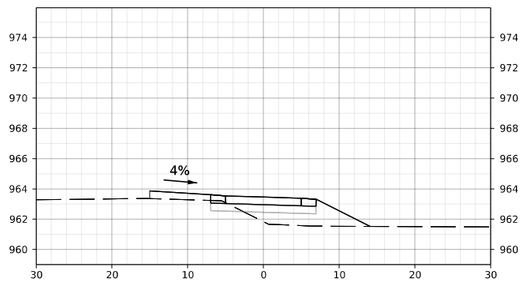

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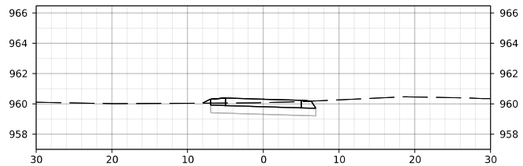

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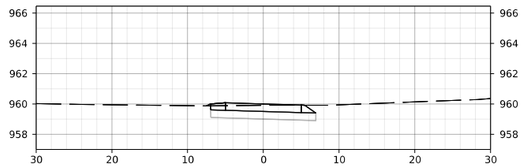

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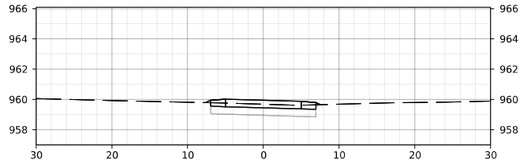

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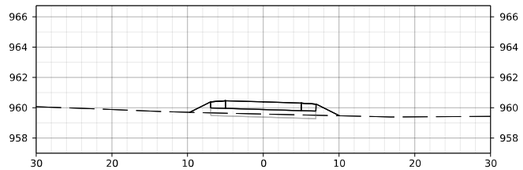

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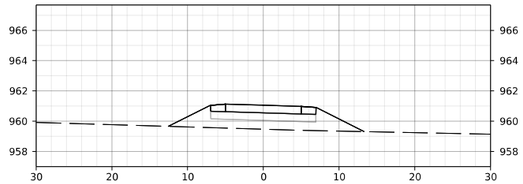

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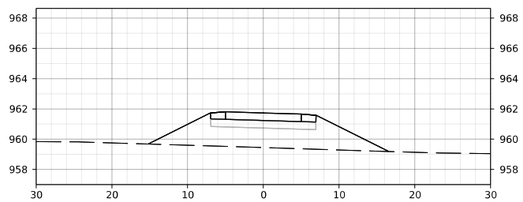

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MAINLINE CROSS SECTIONS

W.1

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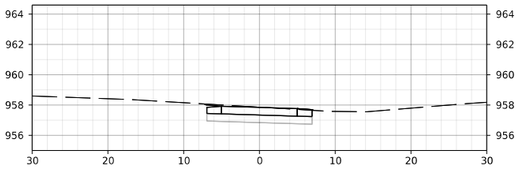

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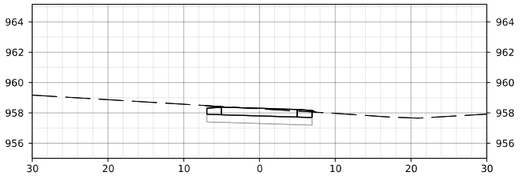

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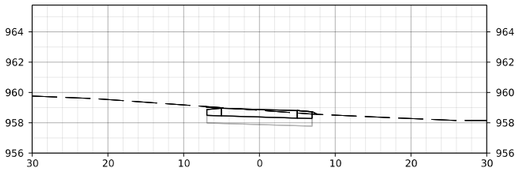

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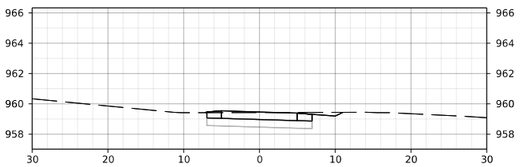

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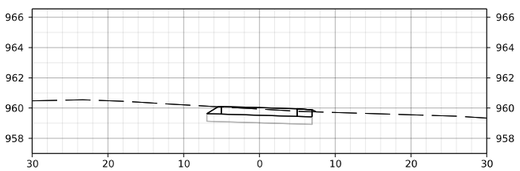

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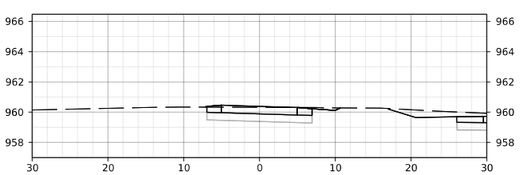

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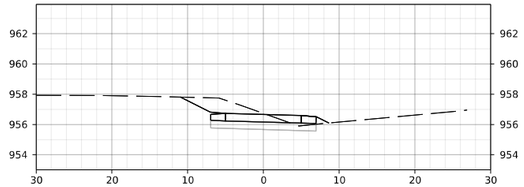

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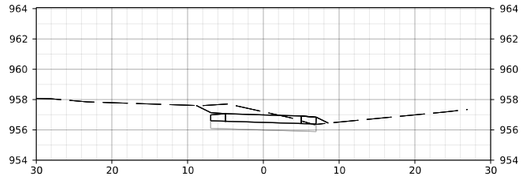

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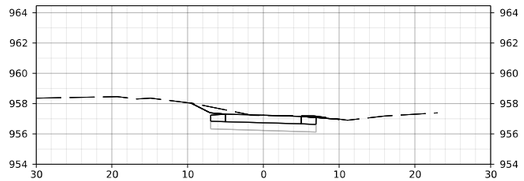

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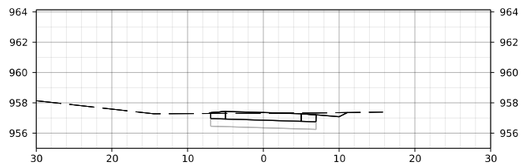

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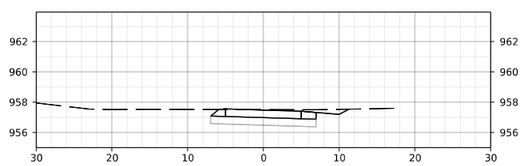

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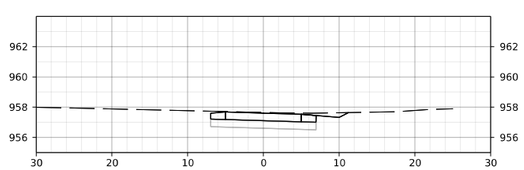

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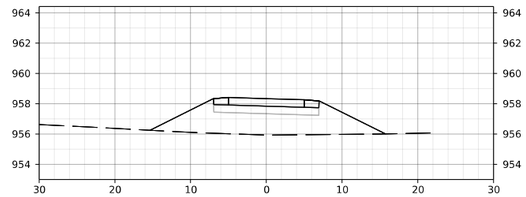

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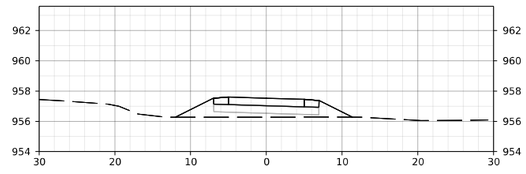

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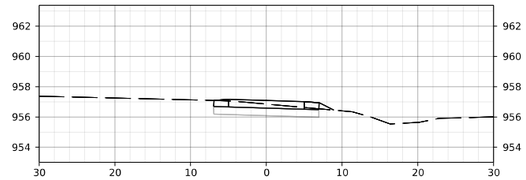

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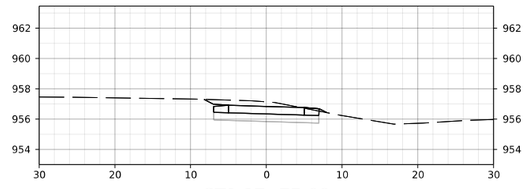

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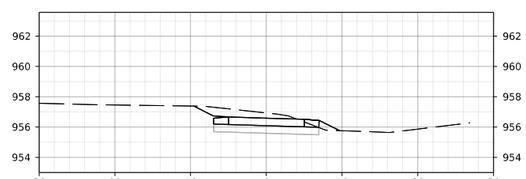

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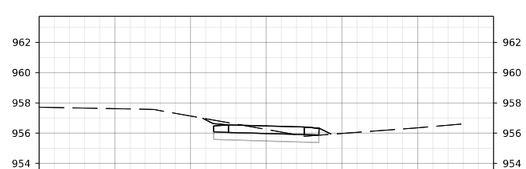

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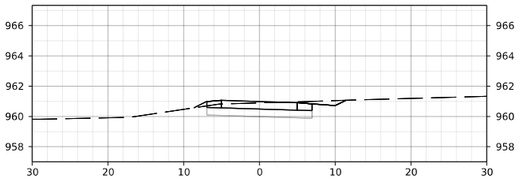

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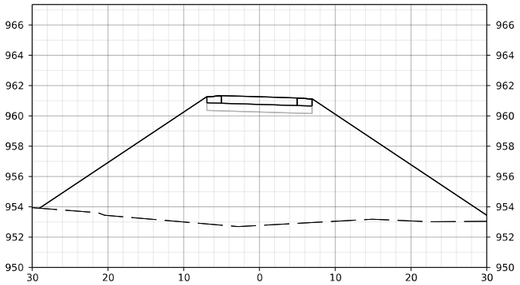

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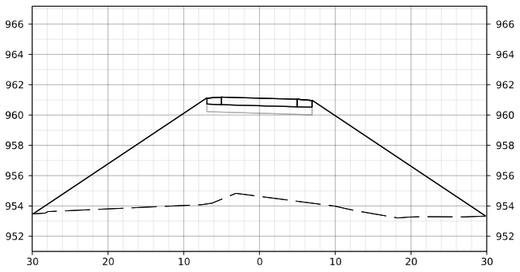

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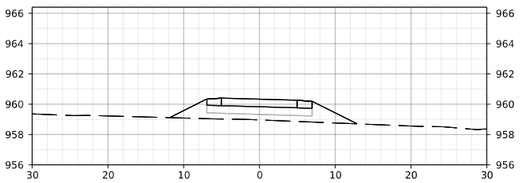

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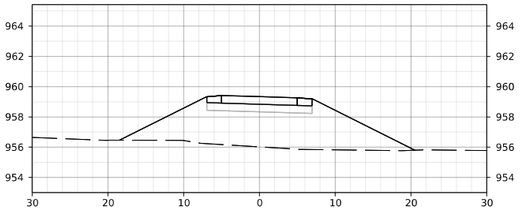

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SPECIFICATIONS
FOR
CITY OF BONDURANT, IOWA
PARK SIDE TRAIL CONNECTION PROJECT

S-H PROJECT NO. 2142301580

SPECIFICATIONS
FOR
CITY OF BONDURANT, IOWA
PARK SIDE TRAIL CONNECTION PROJECT

S-H PROJECT NO. 2142301580

SHIVEHATTERY
ARCHITECTURE + ENGINEERING

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.

05/17/2024

Signature Date

Printed or Typed Name: David R. Fliehler, PE

License Number: 23509

My License Renewal Date is: 12-31-2025

Pages, Sheets, or Divisions covered by this Seal: Project Manual

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BONDURANT, IOWA
S-H PROJECT NO. 2142301580

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NOTICE OF HEARING AND LETTING

Sealed bids will be received by the City of Bondurant City Clerk's Office at 200 2nd Street NE, Bondurant, Iowa 50035, until **2:00 p.m.** on **Wednesday, June 12, 2024,** for the following described public improvement:

PARK SIDE TRAIL CONNECTION PROJECT
BONDURANT, IOWA
S-H PROJECT NO. 2142301580

At the above time all bids received by the City will be opened and publicly read at the Bondurant City Hall (200 2nd St NE, Bondurant, IA 50035) after receiving bids at **2:00 p.m**. on **June 12, 2024** with the results being reported to the Bondurant City Council at their meeting on **June 17, 2024** at **6:05 p.m**. At which time the Council may take action on the proposals submitted or at such time as may then be fixed.

The extent of work on this project is the furnishing of all labor, equipment, and materials for the construction of improvements generally described as follows:

The Park Side Trail Connection Project entails the development of a 10' PCC trail segment spanning approximately 1,100 linear feet. This trail will serve as a vital link between the Top Farms and Park Side neighborhoods situated north of Santiago Creek and key destinations such as the Bondurant Recreational Sports Complex (BRSC), Lake Petocka, and the Chichaqua Valley Trail (CVT) network. At the Santiago Creek crossing, the project will feature a twin 10'x8' box culvert along with in-stream improvements. Sidewalk connections will provide access to the Petocka Run Development and BRSC Little League Fields. Enhancements along the trail corridor and around Park Side Pond will include planting of trees, additional landscaping, and installation of two limestone fishing jetties.

Materials, estimated quantities, and work to be done for the project on which bids will be received are as shown on the bid proposal for said project.

All work is to be done in strict compliance with the Plans and Specifications prepared by Shive-Hattery, Inc. All bids shall be made on a form furnished by the City and shall be filed on or before the time specified above, in a sealed envelope addressed to the City Clerk of Bondurant, Iowa, clearly stating that the envelope contains a bid on this project. Each proposal shall be accompanied by a bid bond, a cashier's or certified check drawn on an Iowa bank or a bank chartered under the laws of the United States in an amount equal to ten percent (10%) of the total amount of the bid. If a bid bond is submitted, it must be on the form provided with the contract documents.

The bid security submitted should be made payable to the City of Bondurant, Iowa, and not contain any conditions either in the body or as an endorsement thereon. This bid security is provided to the City of Bondurant as security that if the bidder is awarded the contract by the City, the bidder will enter into a contract on the form provided by the City at prices bid and shall furnish the required performance and payment bond to the City. If the bidder fails to execute the contract and to furnish an acceptable performance and payment bond or provide a Certificate of Insurance within ten (10) days after acceptance of the bid by the City, the bid security may be forfeited or cashed by the City as liquidated damages.

The successful bidder will be required to furnish a performance and payment bond in the amount of one hundred percent (100%) of the contract price guaranteeing faithful performance of the contract and guaranteeing payment to all persons supplying labor and/or materials in the execution of the work provided for in the contract. Additionally, the contractor must provide the City with a guarantee of maintenance of said improvement in the form of surety for a period of four (4) years from the time of acceptance by the City.

NOTICE OF HEARING AND LETTING

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.

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.

If it is determined that adherence to these Iowa statutory requirements may cause denial of federal funds which would otherwise be available for a public improvement, or would otherwise be inconsistent with requirements of any federal law or regulation, the application of Iowa Code Chapters 73 and 73A shall be suspended to the extent necessary to prevent denial of the funds or to eliminate the inconsistency with federal requirements.

Work on said project shall commence any time after the contract has been awarded **(June 17, 2024)** and shall be fully completed by **May 30, 2025**. Final Completion generally includes full restoration and seeding of the site and all other items not related to construction of the trail, sidewalks, and box culvert. Substantial Completion shall be reached by **November 22, 2024**. Substantial Completion shall include the construction of the box culvert, all in-stream improvements, fishing jetties, and trail and sidewalk sections open for public use.

Payment for the work will be made by the City in cash from such funds as may be legally available including cash on hand, proceeds from the sale and issuance of General Obligation Bonds and such other funds including the proceeds from the sale and issuance of such other bonds as may lawfully be issued as the City Council may at its sole discretion determine and provide.

Payment will be made to the contractor based on monthly estimates in amounts equal to ninety-five (95%) percent of the contract value of the work completed during the preceding calendar month and will be based upon an estimate prepared by the Contractor on the first day of the month, subject to the approval of the Engineer. Any such payment by the City shall in no way be construed as an act of acceptance for any part of the work partially or totally completed. Final payment by the City will be made in accordance with Iowa statues and the contract documents.

Bidding forms may be obtained from Action Reprographics, 5037 NE 14th Street, Des Moines, IA 50313, Phone: 515.288.2146, Email: planroom.actionrepro.com. Copies of Plans and Specifications and contract documents can be obtained at the same address.

The City reserves the right to reject any and/or all bids and to waive any and/or all technicalities and/or all irregularities.

Publish: By no later than May 21, 2024

_____
Shelby Hagan, City Clerk

INSTRUCTIONS TO BIDDERS

PARK SIDE TRAIL CONNECTION
BONDURANT, IOWA
S-H PROJECT NO. 2142301580

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3. BIDDER'S KNOWLEDGE
4. BIDDER'S QUALIFICATIONS
5. METHOD OF BIDDING
6. SUBMISSION OF BIDS
7. BID SECURITY
8. WITHDRAWAL OF BIDS
9. EVALUATION OF BIDS
10. TAXES
11. CONTRACT TERMINATION
12. PREFERENCE FOR LABOR AND MATERIALS
13. EXECUTION OF CONTRACT
14. QUESTIONS AND ADDENDA
15. PRECONSTRUCTION CONFERENCE
16. APPROVAL OF MATERIALS
17. PERIOD OF GUARANTEE AND BONDS
18. METHOD OF PAYMENT
19. IOWA RECIPROCAL PREFERENCE

1. GENERAL STATEMENT

1.1 It is proposed under these Specifications to provide for furnishing completely the Contract requirements set forth in the Detailed Specifications.

1.2 The purpose of these Specifications is to require the furnishing of highest quality equipment, material, and workmanship, in accordance with these Specifications and best accepted practice.

1.3 The Bidder is expected to base their Bid on materials and equipment complying fully with the Plans and Specifications. In the event the Bid is based on material or equipment which does not conform, the Bidder will be held responsible for furnishing materials and equipment which conform fully at no change in the Bid Price.

1.4 Each Bidder in submitting their Bid, acknowledges their willingness to comply with the terms of these Contract Documents.

2. LAWS AND REGULATIONS

2.1 Attention of all Bidders is called to Federal, State, and Municipal laws, regulations and ordinances in reference to labor, materials, equipment, Bonds (Bidding, Performance, and Guarantee), and all other matters pertaining to the relationship between Owner, Contractor, and Engineer.

3. BIDDER'S KNOWLEDGE

3.1 Bidders shall familiarize themselves with the Specifications and conditions which will affect the construction. It will be the responsibility of the Bidder to make a personal examination of the job site and the physical conditions which may affect their bidding and performance under the Contract.

4. BIDDER'S QUALIFICATIONS

4.1 Bidders will be required to satisfy the Owner as to their integrity, experience, equipment, personal, and financial ability to perform the work.

4.2 If successful Bidder is a non-Iowa Corporation, proof shall be submitted to the Owner, prior to the execution of the Contract, of authorization by the Secretary of State to do business in Iowa.

5. METHOD OF BIDDING

5.1 Bidders shall submit Lump Sum Bid and Unit Price Bids, as required for the work covered by the Plans and Specifications. Prices shall cover complete work and include all costs incidental thereto, unless indicated otherwise.

5.2 In the event of discrepancies between Unit Prices and Unit Price Extensions listed in the Bidder's Proposal, Unit Prices shall govern and Unit Price extensions shall be corrected, as necessary, for agreement with Unit Prices.

5.3 Bids will be computed on the basis of the work shown on the Plans and Specifications. If Unit Price Bids are called for, quantities are approximate and only for comparison of Bids. Engineer retains right to change location, quantities, and combination of units as may be required during progress of construction. Compensation due Contractor will be computed on basis for final quantities of completed work.

5.4 Unit Prices for payment items included in the Specifications, but not listed in the Proposal, will be negotiated, if needed.

5.5 Award of the Contract will be made to the lowest responsible/responsive Bidder. Lowest Bid will be determined by the lowest Base Bid, exclusive of any Alternates, Allowances, or Unit Prices.

6. SUBMISSION OF BIDS

6.1 Bids shall be submitted on the Proposal form included herewith. The Proposal and Bid Security shall be submitted in separate sealed envelopes. The envelopes shall bear the return address of the Bidder and shall be addressed as follows:

TO:	City Clerk City of Bondurant 200 2ND Street NE Bondurant, Iowa 50035
PROPOSAL FOR:	PARK SIDE TRAIL CONNECTION PROJECT S-H Project No. 2142301580
BID SECURITY FOR:	PARK SIDE TRAIL CONNECTION PROJECT S-H Project No. 2142301580

6.2 The Bid shall be signed by a legally authorized representative of the Bidder.

7. BID SECURITY

7.1 Each Bid shall be accompanied by Bid Security as set out in the NOTICE OF HEARING AND LETTING.

7.2 The Bid Security shall be made payable to the CITY CLERK, CITY OF BONDURANT, IOWA and not contain any conditions either in the body or as an endorsement thereon. This bid security is provided to the City of Bondurant as security that if the bidder is awarded the contract by the City, the bidder will enter into a contract on a form provided by the City at prices bid and shall furnish to the City an acceptable performance bond, payment bond, and certificate of insurance meeting the requirements of the specifications including, but not limited to, naming the City and the Engineer as additionally insured. Bid Security shall be forfeited and become the property of the Owner in case the Bidder fails or refuses to enter into Contract and furnish acceptable bonds or provide a certificate of insurance within (10) calendar days after his proposal has been accepted.

7.3 Bid Security of the unsuccessful Bidders will be returned as soon as the Successful Bidder is determined or within thirty (30) days, whichever is sooner; Bid Security of Successful Bidder will be returned upon execution of Contract and furnishing of Bonds.

7.4 Use Bid Bond form included with Specifications.

8. WITHDRAWAL OF BIDS

8.1 Bids may be withdrawn any time prior to the scheduled closing time for receipt of Bids, but no Bid may be withdrawn for a period of thirty (30) calendar days thereafter.

9. EVALUATION OF BIDS

9.1 The Owner may consider such factors as Bid Price, responsibility of Bidder, and similar factors in determining which Bid it deems to be in its best interest.

9.2 The Owner may reject any or all Bids, waive informalities, or technicalities in any Bid, and accept that Bid which it deems to be in its best interest.

10. TAXES

10.1 The City of Bondurant will issue an Iowa Sales Tax Exemption Certificate to all contractors assigned to the project.

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 hereto including Subcontractors and Sureties upon any Bond given or filed in connection therewith.

12. PREFERENCE FOR LABOR AND MATERIALS

12.1 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, which shall be determined without regard to State or local law whereby preference is given on factors other than the amount of the Bid.

13. EXECUTION OF CONTRACT

13.1 The Successful Bidder shall, within ten (10) days of written Notice of Selection, enter into written Contract with the Owner on forms included with the Specifications for the performance of work awarded to the Successful Bidder.

14. QUESTIONS AND ADDENDA

14.1 If any person contemplating submitting a Bid for the proposed work, material, or equipment is in doubt as to the true meaning of any part of the Plans, Specifications, or other Contract Documents, the Bidder may request an interpretation thereof. The person submitting the request will be responsible for its prompt delivery.

14.2 Questions concerning interpretation or intent of the Contract Documents should be directed to:

David Fliehler, Project Engineer
Shive-Hattery, Inc.
4125 Westown Parkway, Suite 100
West Des Moines, IA 50266
Phone: 515.223.8104
Email: DFliehler@shive-hattery.com

14.3 Any oral interpretation given will be valid only if confirmed by written Addendum. Information obtained from an officer, agent, or employee of the Owner shall not affect the risks or obligations assumed by the Contractor or relieve the Contractor from fulfilling any of the conditions of the Contract.

14.4 The Owner reserves the right to revise or amend the Contract Documents, prior to the date set for receipt of Bids. Such revisions and amendments, if any, will be announced by an Addendum or Addenda to the Contract Documents.

14.5 Copies of such addenda as may be issued will be furnished to all holders of Specifications.

14.6 Bidders are required to acknowledge receipt of all Addenda by listing such Addenda in Proposal.

15. PRECONSTRUCTION CONFERENCE

15.1 Following the award of Contract, the Contractor and the Contractor's Subcontractors will be required to attend a Preconstruction Meeting at a time and place designated by the Engineer.

16. APPROVAL OF MATERIALS

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

17. PERIOD OF GUARANTEE AND BONDS

17.1 Performance Bond furnished by the Contractor shall remain in full force and effect until all bills are paid.

17.2 Maintenance Bonds will remain in full force and effect from the date of acceptance by the Owner for the period set out in the REGULATIONS OF THE CONTRACT.

18. METHOD OF PAYMENT

18.1 Payment to the Contractor will be made by the City in cash, or its equivalent, as set out in the NOTICE OF HEARING AND LETTING.

18.2 No separate payment will be made for work covered in this part of the Specifications except as set out below. Contract Unit and Lump Sum Prices shall include all costs for every item of work.

18.3 If items of work are revised during construction, which are not shown on Proposal, Contract Price shall be adjusted on basis of Unit or Lump Sum Price negotiated with Contractor.

19. IOWA RECIPROCAL PREFERENCE

19.1 In accordance with the requirements of the Iowa Department of Labor all bidders must submit a fully complete 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 complete Bidder Status Form may result in the Proposal being determined non-responsive.

PROPOSAL

PARK SIDE TRAIL CONNECTION PROJECT
S-H PROJECT NO. 2142301580

PROPOSAL:

TO FURNISH ALL MATERIALS, TOOLS AND EQUIPMENT AND TO CONSTRUCT IMPROVEMENTS AS SPECIFIED HEREIN:

NAME OF BIDDER _____

ADDRESS OF BIDDER_____

TO THE: CITY COUNCIL
CITY OF BONDURANT
200 2nd STREET NE
BONDURANT, IOWA 50035

The Undersigned as a Bidder declares that he has examined the location of the proposed work and determined the amount and character of the proposed work and the material and equipment necessary to complete same in compliance with the Specifications, Plans, Contract, and Addenda number___, ___, and ___.

The Undersigned as a Bidder also acknowledges that Award of the Contract will be made to the lowest responsible/responsive Bidder with the lowest Bid being determined by the lowest Base Bid, exclusive of any Alternates, Allowances, or Unit Prices.

The Undersigned states that he has been engaged in Contract work of this class for a period of ___ years and invites your attention to the following work that has been completed under his direction:

_____

_____

_____

_____

_____

PROPOSAL

(Certified Check)
The Undersigned submits herewith a (Bid Bond) in the amount of
(Cashier's Check)
_____ ($ _____) which shall become the property of the City of Bondurant, 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 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 the Bidders Proposal and the Specifications that the provisions of the latter shall prevail.

The Undersigned hereby proposes to provide the required labor, materials, services, equipment and tools, and to perform the work described in the Specifications, within the time required for the sum or sums stated hereinafter in the Proposal Schedule, which schedule is hereby made a part of this Proposal.

The Undersigned Bidder certifies, by submission of this bid or proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency. Furthermore, the contractor will pass this requirement on to subcontractors (if allowable) seeking subcontracts over $25,000.

The bidder shall provide immediate written notice to the City of Bondurant, Bondurant City Clerk, if at any time they learn this certification has become erroneous by reason of changed circumstances.

Bidder: _____

By: _____

Title: _____

Date: _____

PROPOSAL

PARK SIDE TRAIL CONNECTION PROJECT
S-H PROJECT NO. 2142301580

1. Construct the **PARK SIDE TRAIL CONNECTION PROJECT, S-H Project No. 2142301580** for the following Unit and Lump Sum Prices.

ITEM NO.	ITEM	UNIT	TOTAL	UNIT PRICE	EXTENDED PRICE
1	CLEARING AND GRUBBING	LS	1	$	$
2	TOPSOIL, STRIP, SALVAGE AND SPREAD	CY	1595.0	$	$
3	EXCAVATION, CLASS 10	CY	775.0	$	$
4	MODIFIED SUBBASE, 6 IN.	SY	1830.0	$	$
5	REMOVALS, PER PLAN	LS	1	$	$
6	STORM SEWER, TRENCHED, DUAL WALL POLYPROPYLENE, 12 IN.	LF	38.0	$	$
7	MANHOLE ADJUSTMENT, MINOR	EA	1	$	$
8	REINFORCED CONCRETE BOX CULVERT, TWIN 10X8	LF	24.0	$	$
9	REINFORCED CONCRETE BOX CULVERT STRAIGHT END SECTION, TWIN 10X8	EA	2	$	$
10	GRANULAR MATERIAL FOR WORKING BLANKET	TON	111.0	$	$
11	SPECIAL SUBGRADE PREPARATION FOR SHARED USE PATH	SY	1950.0	$	$
12	SHARED USE PATH, PCC, 6 IN.	SY	1100.0	$	$
13	SIDEWALK, PCC, 5 IN.	SY	210.0	$	$
14	DRIVEWAY, GRANULAR, 6 IN.	TON	4.0	$	$
15	PAVEMENT REMOVAL	SY	20.0	$	$
16	3/8" MINUS CRUSHED LIMESTONE, 5 IN.	TON	14.0	$	$

ITEM NO.	ITEM	UNIT	TOTAL	UNIT PRICE	EXTENDED PRICE
17	TEMPORARY TRAFFIC CONTROL	LS	1	$	$
18	HYDRAULIC SEEDING, FERTILIZING SUDAS TYPE 1	AC	2.2	$	$
19	HYDRAULIC SEEDING, FERTILIZING SUDAS TYPE 3	AC	0.3	$	$
20	HYDRAULIC SEEDING, FERTILIZING SUDAS TYPE 5	AC	3.1	$	$
21	HYDRAULIC SEEDING, FERTILIZING CUSTOM POLLINATOR SEED MIX	AC	0.2	$	$
22	HYDRAULIC SEEDING, FERTILIZING SUDAS WETLAND GRASS SEED MIX	AC	0.4	$	$
23	PLANTS WITH WARRANTY, TREE	EA	30	$	$
24	PLANTS WITH WARRANTY, PERENNIALS AND ORNAMENTAL GRASSES PLUG	EA	2567	$	$
25	SWPPP PREPARATION	LS	1	$	$
26	SWPPP MANAGEMENT	LS	1	$	$
27	FILTER SOCK, 9 IN.	LF	900.0	$	$
28	FILTER SOCK, REMOVAL	LF	900.0	$	$
29	TEMPORARY RECP, EROSION CONTROL BLANKET	SQ	250.0	$	$
30	RIP-RAP, CLASS E	TON	135.0	$	$
31	TEMPORARY SEDIMENT BASIN AND CHECK DAM	LS	1	$	$
32	SILT FENCE OR DITCH CHECK	LF	750.0	$	$
33	SILT FENCE OR DITCH CHECK, REMOVAL OF SEDIMENT	LF	750.0	$	$

ITEM NO.	ITEM	UNIT	TOTAL	UNIT PRICE	EXTENDED PRICE
34	SILT FENCE OR DITCH CHECK, REMOVAL OF DEVICE	LF	750.0	$	$
35	EROSION CONTROL MULCHING, HYDROMULCH	AC	6.2	$	$
36	HARDWOOD MULCH SURFACING	CY	37.0	$	$
37	DECORATIVE STEEL FENCE, 48 IN.	LF	44.0	$	$
38	DECORATIVE STEEL FENCE, 60 IN.	LF	82.0	$	$
39	WEST LIMESTONE FISHING JETTY	LS	1	$	$
40	EAST LIMESTONE FISHING JETTY	LS	1	$	$
41	CONSTRUCTION SURVEY	LS	1	$	$
42	MOBILIZATION	LS	1	$	$
43	CONCRETE WASHOUT	LS	1	$	$
				BID TOTAL:	**$**

2. Work on said project shall commence any time after the contract has been awarded (**June 17, 2024**) and shall be fully completed by **May 30, 2025**. Final Completion generally includes full restoration and seeding of the site and all other items not related to construction of the trail, sidewalks, and box culvert. Substantial Completion shall be reached by **November 22, 2024**. Substantial Completion shall include the construction of the box culvert, all in-stream improvements, fishing jetties, and trail and sidewalk sections open for public use.

4. Required Attachment(s):
   - Authorization to Transact Business
   - Bidder Status Form
   - Bid Bond
   - Targeted Small Business Pre-Bid Contact Information Form

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.

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 bidders who are residents? ☐ Yes ☐ No

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

_____

_____

You may attach additional sheet(s) if needed.

To be completed by all bidders — Part D

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

Firm Name: _____

Signature: _____ Date: _____

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

309-6001 02-14

BIDDER STATUS -16
S-H # 2142301580

BID BOND

PARK SIDE TRAIL CONNECTION PROJECT
BONDURANT, IOWA
S-H PROJECT NO. 2142301580

KNOW ALL MEN BY THESE PRESENTS, That we, _____
as Principal, and _____, as Surety are held and firmly bound unto the CITY OF BONDURANT, IOWA, hereinafter called "OWNER", in the penal sum of _____DOLLARS ($_____) lawful money of the United States, for the payment of which sum will and truly be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents. The condition of this obligation is such that whereas the Principal has submitted the accompanying Bid, dated _____, 2024, for the **PARK SIDE TRAIL CONNECTION PROJECT, S-H Project No. 2142301580.**

NOW, THEREFORE,

(A) If said Bid shall be rejected, or in the alternate;

(B) If said Bid shall be accepted and the principal shall execute and deliver a Contract in the form specified and shall furnish a Bond for the faithful performance of said Contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said Bid.

Then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

By virtue of statutory authority, the full amount of this Bid Bond shall be forfeited to the Owner in liquidation of damages sustained in the event that the Principal fails to execute the contract and provide the Bond as provided in the Specifications or by law.

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

BID BOND

IN WITNESS WHEREOF, the Principal and the Surety, have hereunto set their hands and seals, and such of them as are corporations, have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers this _____day of _____, A.D., 2024.

_____ Witness Principal

(Seal)

By _____
(Title)

_____
(Surety)

By _____
(Attorney-in-Fact)

CONTRACT

PARK SIDE TRAIL CONNECTION PROJECT
BONDURANT, IOWA
S-H PROJECT NO. 2142301580

STATE OF IOWA }
} ss.
COUNTY OF POLK }

THIS AGREEMENT AND INDENTURE made and entered into this, the _____ day of _____, 2024, by and between the CITY OF BONDURANT, IOWA, termed in this Agreement and the Specifications as the "Owner", and _____, termed in this Agreement and the Specifications as the "Contractor".

WITNESSETH:

THAT, WHEREAS, The Contractor will commence and complete the construction of the following improvements known as the **PARK SIDE TRAIL CONNECTION PROJECT, S-H Project No. 2142301580.**

WHEREAS, The Owner has heretofore caused to be prepared certain Contract Documents for furnishing material and constructing improvements therein fully described, and the Contractor did, on the ____ day of _____, _____, file with the Owner a copy of said Contract Documents, including therein his offer and Proposal to furnish said materials and construct said improvements at the terms therein fully stated and set forth; and,

WHEREAS, The said Contract Documents and Proposal accurately and fully describe the terms and conditions upon which the Contractor is willing to furnish the material and construct the improvements called for by the said Plans and Specifications and in the manner and time of furnishing and constructing same.

IT IS THEREFORE, AGREED;

FIRST, That a copy of said Contract documents and Proposal filed as aforesaid are a part hereof and that the same do in all particulars become the Agreement and Contract between the parties hereto in all matters and things set forth therein and described; that both parties hereby accept and agree to the terms and conditions of said Contract Documents and Proposal so filed; and further that the part or parts of the Proposal accepted and the compensation therefore are as follows:

SECOND, The Contract Documents and Proposal hereto annexed are made a part of this Agreement and Contract as fully and absolutely as if herein set out in detail.

THIRD, This Contract is executed in three copies, each of which will be deemed an original with distribution as follows: Owner – one (1) copy, Contractor – one (1) copy, Bonding Company – one (1) copy.

CONTRACT

The term "Contract Documents" means and includes the following:

A. Notice of Hearing and Letting
B. Instructions to Bidders
C. Proposal
D. Authorization to Transact
E. Bidder Status
F. Bid Bond
G. Contract
H. Performance Bond
I. Regulations of the Contract
J. Supplemental Regulations of the Contract
K. Special Conditions
L. Detailed Specifications
M. Plans Numbered
A.1-3, B.1, C.1-4, D.1-2, E.1, G.1-2, P.1-6, V.1, W.1-3
N. Standard Drawings
O. Addenda Number ____ through____.
P. Change Orders Number ____ through____.
Q. Notice to Proceed

IN FAITH WHEREOF, Witness the hands and seals of both parties on the day and year in this Agreement first above written.

CONTRACTOR:

_____

By:_____

Title: _____

ATTEST:

_____

By:_____

Title: _____

CITY OF BONDURANT, IOWA

By: _____
Shelby Hagan
City Clerk

PERFORMANCE BOND

PARK SIDE TRAIL CONNECTION PROJECT
BONDURANT, IOWA
S-H PROJECT NO. 2142301580

KNOW ALL MEN BY THESE PRESENTS, that we, the Undersigned, _____ _____of _____, hereinafter referred to as "Contractor" and _____, a Corporation organized under the laws of the State of Iowa, and authorized to transact business in the State of Iowa, as Surety, are held and firmly bound unto the City of Bondurant, hereinafter referred to as "Owner" in the penal sum of _____ DOLLARS ($_____), lawful money of the United States of America for the payment of which sum, will and truly be made, we bind ourselves and our heirs, executors, administrators, successors, and assigns, jointly and severally by these presents.

PARK SIDE TRAIL CONNECTION PROJECT, S-H Project No. 2142301580

WITNESSETH:

WHEREAS, the above bonded Contractor has, on the _____ day of _____, 20____, entered into a written Contract with the aforesaid Owner for furnishing all materials, equipment, tools, superintendents, labor and other facilities, and accessories, for the construction of certain improvements as designated, defined and described in the said Contract and the Conditions thereof, and in accordance with the Specifications and Plans therefore, a copy of said Contract being attached hereto and made a part hereof.

The condition of the foregoing obligation is such that if the said Contractor shall and will, in all particulars duly and faithfully observe, perform, fulfill and abide by each and every covenant, condition and part of said Contract Documents hereto attached, or by reference, made a part hereof, according to the true intent and meaning in each case, and indemnify and save harmless the owner from all loss, liability, counsel fees, costs, and damage of whatsoever nature or kind, by reason of the Contractor's default or failure, then this obligation shall be and become null and void, otherwise it shall remain in full force and effect.

Provided further, the undersigned Contractor and Surety hereby bind themselves to the obligations and conditions set forth in Chapter 573, Code of Iowa, 2019, which by this reference is made a part hereof as though fully set out herein.

Provided further, the said Surety hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the Contract, or the work to be performed hereunder, or the Specifications accompanying the same, shall in any way affect its obligation on this Bond and it does hereby waive notice of any change, extension of time, alteration, or addition to the terms of the Contract, or to the work, or to the Specifications.

Provided further, the Contractor hereby waives all Notice of Default or any other acts giving rise to the claim under this Bond. In the event that any actions or proceedings are initiated with respect to this Bond, the parties agree that the venue thereof shall be Polk County, State of Iowa.

Provided further, if legal action is required by the Owner against the Surety or Principal to enforce the provisions of this Bond or to collect the monetary obligation incurring to the benefit of the Owner, the Surety or Principal agrees to pay to Owner all damages, costs, and attorney fees incurred by enforcing any of the provisions of this agreement. All rights, powers, and remedies of the Owner hereunder shall be cumulative and not alternative and shall be in addition to all rights, powers and remedies given to Owner

by law. Owner may proceed against Surety for any amount guaranteed hereunder whether action is brought against Principal or whether Principal is joined in any such action or actions or not.

Provided further, this instrument embodies the entire agreement between the parties. There are no promises, terms, conditions or obligations other than those contained herein, and this Bond agreement shall supersede all previous communications, representations, or other agreements, either verbal or written, between the parties hereto.

IN WITNESS WHEREOF, the said Contractor has hereunto set his hand, and the said Surety has caused these presents to be executed in its name, and its corporate seal to be hereunto affixed, by its Attorney-in-Fact duly authorized thereunto so to do at _____
_____, on the _____ day of _____, 20____.

_____
Contractor

By: _____
(Seal)

_____
Surety Company

By: _____
(Attorney-in-Fact)

(Seal)

By: _____

(Accompany this Bond with Attorney-in-Fact's authority from the Surety Company certified to include the date of the Bond.)

REGULATIONS OF THE CONTRACT

BONDURANT, IOWA

PARK SIDE TRAIL CONNECTION PROJECT, BONDURANT, IOWA
S-H PROJECT NO. 2142301580

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1. GENERAL STATEMENT

1.1 It is expressly understood and agreed that the Contract Documents comprised of the Notice of Hearing and Letting, Instructions to Bidders, Regulations of the Contract, Proposal, Contract, Supplemental Regulations, Performance Bond, Statutory Bond, Special Conditions, Detailed Specifications, Plans, all Addenda thereto issued prior to the time of opening of Bids for the work, all of which are hereto attached, Approved Change Orders, Notice to Proceed, and other Drawings, Specifications, and engineering data which may be furnished by the Contractor and approved by the Owner, together with such additional Drawings which may be furnished by the Engineer from time to time as are necessary to make clear and to define in greater detail the intent of the Specifications and Drawings.

1.2 That several parts of the 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 the Documents is to include the furnishing of all materials, labor, tools, equipment and supplies necessary for completion of the contract obligations. Materials or work described in words which so applied have a well-known technical or trade meaning shall be held to refer to such recognized standards. Notwithstanding Section 1.1 of the Special Conditions, in the event of a conflict between any of the contract documents, the Contractor is to provide the greater quantity and/or better quality, unless otherwise directed in writing by the Owner or Engineer.

1.3 The Contract shall be executed in Polk County in the State of Iowa. Five copies of Contract Documents shall be prepared, each containing an exact copy of the Contractor's Proposal as submitted, the Performance Bond properly executed, a Statutory Bond where required, and the Documents shall be filed as follows: Two with the Owner, One with the Contractor, One with the Engineer, One with Bonding Company.

2. DEFINITIONS

2.1 Wherever any work or expression in this article, or pronoun used in its stead, occurs in these Contract Documents, it shall have and is mutually understood to have the meaning herein given:

2.1.1 "Contract" or "Contract Documents" shall include all of the Documents enumerated in the previous article.

2.1.2 "Owner", "Purchaser", shall mean the party entering into Contract or duly authorized officers or agents of the owner.

2.1.3 "Contractor" shall mean the party entering into Contract for the performance of the work covered by this Contract and duly authorized agents or legal representatives of the Contractor.

2.1.4 "Engineer" shall mean the Engineer or Engineers who have been employed by the Owner for this work, or their duly authorized agents, such agents acting severally within the scope of the particular duties entrusted to them.

2.1.5 "Inspector" shall mean the engineering or technical inspector or inspectors duly authorized by the Owner, limited to the particular duties entrusted to them.

2.1.6 "Date of Award Contract" or words equivalent thereto, shall mean the date upon which the Successful Bidder's Proposal is accepted by the Owner.

2.1.7 "Day" or "Days", unless herein other expressly defined, shall mean a calendar day or days of twenty-four (24) hours each.

2.1.8 "The work" shall mean the work to be done and the equipment, supplies, materials and labor to be furnished under this Contract, unless some other meaning is indicated by the context.

2.1.9 "Plans" or "Drawings" shall mean and include all Drawings which may have been prepared by the Engineer as a basis for proposals, all Drawings submitted by the Successful Bidder with his Proposal and by the Contractor to the Owner, if and when approved by the Engineer, and all Drawings submitted by the Owner to the Contractor during the progress of the work as provided for therein.

2.1.10 Whenever in these Contract Documents the words, "as ordered", "as directed", "satisfactory", or words of like effect and import, unless otherwise particularly specified herein, shall mean approved, reasonable, suitable, acceptable, proper or satisfactory in the judgment of the Owner and Engineer.

2.1.11 Similarly the words “approved”, “reasonable”, “suitable”, “acceptable”, “properly”, “satisfactory”, or words of like effect and import, unless otherwise particularly specified herein, shall mean approved, reasonable, suitable, acceptable, proper or satisfactory in the judgment of the Owner and Engineer.

2.1.12 Whenever the statement is made in these Contract Stipulations containing the expression “it is understood and agreed”, or an expression of the like import, such expression means the mutual understanding and agreement of the Contractor and Owner.

2.1.13 Wherever the words, “Notice to Bidders” appear in these Specifications or Contract Documents, there should be substituted therefore the words, “Notice of Hearing and Letting”.

3. CONTRACTOR’S OBLIGATIONS

3.1 It is understood and agreed that the Contractor, by careful examination, has been satisfied as to the nature and location of the work, the conformation of the ground, the character, quality and quantity of the materials to be encountered, the character of the equipment and facilities needed preliminary to and during the prosecution of the work, the general local conditions, and all other matters which can in any way affect the work under this Contract. No verbal agreement or conversation with any officer, agent, or employee of the Owner, either before or after the execution of the Contract, shall Affect or modify any of the terms of obligations herein contained.

4. ENGINEER’S OBLIGATIONS

4.1 The Engineer shall have general supervision of the work as representative of the Owner. The Engineer shall have authority to direct the program of the construction insofar as the proper execution of the Contract is affected and to the extent that the forces of labor may be increased or decreased by the Engineer’s order to ensure the execution of the Contract in the time and in the manner prescribed.

4.2 All work performed under this Contract shall be done in a first-class manner, and done to the satisfaction of the Owner. The Owner shall in all cases determine the amount, quality, acceptability, and fitness of the several kinds of work and materials herein specified. The Owner shall decide all questions which may arise as to the fulfillment of the terms of the Contract by the Contractor, or as to the intent or purpose of the Contract.

4.3 The Engineer shall, within a reasonable time after presentation, make decisions in writing on claims arising between the principals of the Contract and shall make interpretations of the Plans and Specifications. Such decisions and interpretations shall be regarded as final. In case of disagreements on decisions recourse may be taken to arbitration as hereinafter provided.

4.4 Any plan or method of work suggested by the Engineer, or other representative of the Owner, to the Contractor, but not specified or required, if adopted or followed by the Contractor in whole or in part, shall be used at the risk and responsibility of the Contractor; and the Engineer and the Owner will assume no responsibility thereof.

5. BOND

5.1 Coincident with the execution of the Contract and Agreement, the Contractor shall furnish a good and sufficient surety Bond in the full amount of the contract sum. This surety Bond, executed by the Contractor to the Owner, shall be a guarantee: (a) for the faithful performance and completion of the work in strict accordance with the terms of the Contract Documents: (b) the payment of all bills and obligations arising from this Contract which might in any manner become a claim against the Owner: (c) for payment to the Owner of all claims due or which may become due by the terms of the Contract, as well as by reason of any violation thereof by the Contractor: (d) for the protection of the Owner against all suits and claims for infringements of the patent right and/or processes: for the period of four (4) years from and immediately following the completion of said Contract and acceptance thereof by the Owner of all improvements, the payment to the Owner or the Owner's successor or assigns for all damage, loss and expense which may occur to the Owner, the Owner's successor or assigns by reason of defective materials used, or by reason of defective workmanship done, in the furnishing of materials and equipment in performance of said Contract, or in lieu thereof the Owner, the Owner's successors or assigns, may require the Contractor to maintain such items in need of repair for the said periods specified therein.

5.2 All provisions of the Bond shall be complete and in full accordance with the statutory requirements. The Bond shall be executed with the proper sureties through a company licensed and qualified to operate in the state and approved by the Owner. The Bond shall be signed by an agent resident in the State of Iowa and date of Bond shall be the date of execution of the Contract. If at any time during the continuance of the Contract, the surety on the Contractor's Bond becomes irresponsible, the Owner shall have the right to require additional and sufficient sureties which the Contractor shall furnish to the satisfaction of the Owner within ten (10) days after notice to do so. In default thereof, the Contract may be suspended, all payments or money due the Contractor withheld, and the Contract completed as hereinafter provided.

6. INSURANCE

6.1 General

6.1.1 The Contractor shall purchase and maintain insurance to protect the Contractor, the Engineer and Owner against all hazards enumerated herein. All policies shall be in the amounts, form and companies satisfactory to the Owner.

6.1.2 All Certificates of insurance required herein shall state that thirty (30) days written notice will be given to the Owner before the Policy is canceled or changed. All certificates of insurance shall be delivered to the Owner and Engineer prior to the time that any operations under this Contract are started.

6.1.3 All of said Contractor's certificates of insurance shall be written by an insurance company authorized to do business in the State of Iowa.

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

6.2.1 Claims under workers' or workmen compensation, disability benefit and other similar employee benefit acts;

6.2.2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;

6.2.3 Claims for damages because of the Contractor's injury, sickness or disease, or death of any person other than the Contractor's employees;

6.2.4 Claims for damages insured by usual personal injury liability coverage which are sustained.

A. by any person as a result of an offense directly related to the employment of such person by the Contractor, or

B. by the other person;

6.2.5 Claims for damages, other than to the work itself, because of injury to or destruction of tangible property, including loss of use resulting there from; and,

6.2.6 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.

6.3 Limits of Liability

6.3.1 The insurance required by Paragraph 6 shall be written on an occurrence form of policy for not less than any limits of liability specified herein, or required by law, whichever is greater:

General Liability; contractually, independent Contractors, Broad Form Property damage	$500,000 (including single limit per occurrence)
Personal Injury, Underground Explosion and Collapse	$500,000 (Aggregate hazards)
Automobile Liability (including all owned, non- owned and hired autos) single limit	$500,000 Combined
Worker's Compensation	Statutory Benefits $100,000 Coverage B
Umbrella Liability; (applying directly excess of above liability single limit coverage)	$1,000,000 Combined $1,000,000

6.4 Contractual Liability Insurance

6.4.1 The insurance required by Paragraph 6 shall include contractual liability insurance applicable to the Contractor's obligations as follows:

A. To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner and the Engineer and their agents, officers and employees from and against all claims, damages, losses and expenses, including, but not limited to attorney's fees, arising out of or resulting from the performance of the work, provided that any such claim, damage, loss or expense (1) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the work itself) including the loss of use resulting there from, and (2) is caused in whole or in part by any negligent act or omission of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity which would otherwise exist as to any party or person described in this paragraph.

B. In any and all claims against the Owner or Engineer or any of their agents, officers or employees by any employee of the Contractor, any Subcontractor, any directly or indirectly employed by any of them or anyone for whose acts may be liable, the indemnification obligation under this Subparagraph 4 shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

C. The obligations of the Contractor under this Subparagraph 4 shall not extend to the liability of the Engineer, the Engineer's agents or employees arising out of (1) the preparation or approval of Maps, Drawings, Opinions, Reports, Surveys, Change Orders, Designs or Specifications, or (2) the giving of or the failure to give directions or instructions by the Engineer, the Engineer's agents or employees providing such giving or failure to give are the primary cause of the injury or damage.

6.5 Contractor's Insurance for other Losses for the consideration in this agreement heretofore stated, in addition to the Contractor's other obligations, the Contractor assumes full responsibility for all loss or damage from any cause whatsoever to any tools owned by the mechanics, any tool machinery, equipment, or motor vehicles owned or rented by the Contractor, the Contractor's agents, Subcontractors, materials owned or rented by the Contractor, the Contractor's agents, Subcontractors, material suppliers or their employees, tool sheds or other temporary structures, scaffolding and staging, protective fences, bridges and sidewalk hooks. The Contractor shall also assume responsibility for all loss or damage caused by, arising out of or incident to larceny, theft, or any cause whatsoever (except as hereinbefore provided) to the structure on which the work of this Contract, and any modifications, alterations, enlargement thereto, is to be done, and to the following items and labor connected or to be used as a part of the permanent materials, and supplies necessary to the work.

6.6 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.

7. ASSIGNMENT OF CONTRACT

7.1 The Contractor shall not assign or transfer this Contract, nor sublet it as a whole, without the written consent of the Owner and of the Surety on the Contractor's Bond. Such consent of Surety, together with copy of assignment shall be filed with the Engineer. No assignment, transfer or subletting, even though consented to, shall relieve the Contractor of the Contractor's liabilities under this Contract. Should any assignee fail to perform the work undertaken by the Assignee in a satisfactory manner, the Owner may at the Owner's option annul and terminate Assignee's Contract.

8. SUB-CONTRACTS

8.1 The Contractor shall, as soon as practicable after the signing of the Contract, notify both the Owner and the Engineer in writing of the names of Subcontractors proposed for the work and shall not employ any that the Owner or the Engineers may within a reasonable time object to as incompetent or unfit.

8.2 The Contractor agrees that the Contractor is as fully responsible to the Owner for the acts and omissions of the Contractor's subcontractors and of persons either directly or indirectly employed by them, as the Contractor is for the acts and omissions of persons directly employed by the Contractor.

8.3 Nothing contained in the Contract Documents shall create any contractual relation between any Subcontractor and the Owner.

8.4 No officer, agent or employee of Owner, including the Engineer, shall have any power or authority whatsoever to bind the Owner or incur any obligation in its behalf to any Subcontractor, material supplier, or other person in any manner whatsoever.

9. OTHER CONTRACTS

9.1 The Owner reserves the right to let other contracts in connection with this work. The Contractor shall afford other Contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work, and shall properly connect and coordinate the Contractor's work with theirs.

9.2 If any part of the Contractor's work depends for proper execution or results on the work of any other Contractor, the Contractor shall inspect and promptly report to the Engineer any defect in such work that renders it unsuitable for such proper execution and results.

9.3 The Contractor's failure to inspect and report shall constitute an acceptance of the other Contractor's work as fit and proper for the reception of his work, except as to defects which may develop in the other Contractor's work after the execution of the Contractor's work.

9.4 Wherever work being done by the Owner's forces or by other Contractors is contiguous to work covered by this Contract, the respective rights of the various interests involved shall be established by the Engineer, in order to secure the completion of the various portions of the work in general harmony.

10. LEGAL RESTRICTIONS

10.1 The Contractor shall procure at the Contractor's own expense all necessary licenses and permits of a temporary nature and shall give due and adequate notice to those in control of all licenses and easements for permanent structures or permanent changes in existing facilities shall be provided by the Owner unless otherwise specified. The Contractor shall have all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the work as drawn or specified.

11. ROYALTIES AND PATENTS

11.1 It is agreed that all royalties for patents or patent infringement claims, whether such patents are for processes or devices, that might be involved in the construction or use of the work, shall be included in the Contract amount and the Contractor shall satisfy all demands that may be made at any time for such, and shall be liable for any damages or claim for patent infringements, and the Contractor shall at the Contractor's own expense, defend any and all suits or proceedings that may be instituted at any time against the Owner for infringement or alleged infringement of any patent or patents involved in the work, and in case of an award of damages, the said Contractor shall pay such award; final payment to the Contractor by the Owner will not be made while any such suits or claims remain unsettled.

12. SCOPE AND INTENT OF SPECIFICATIONS AND PLANS

12.1 General

12.1.1 These Specifications and Project Plans are intended to supplement, but not necessarily duplicate each other, and together constitute one complete set of Specifications and Plans so that any work exhibited in the one and not in the other, shall be executed just as if it has been set forth in both, in order that the work shall be completed according to the complete design of the Engineer.

12.1.2 Should anything be omitted from the Specifications and Plans which is necessary to a clear understanding of the work, or should it appear various instructions are in conflict, then the Contractor shall secure written instructions from the Engineer before proceeding with the construction affected by such omissions or discrepancies. It is understood and agreed that the work shall be performed and completed according to the true spirit, meaning and intent of the Contract, Specifications and Plans.

12.2 Figures Dimensions to Govern

12.2.1 Dimensions and elevations shown on the Plans shall be accurately followed, even though they differ from scaled measurements. No work shown on the Plans, the dimensions of which are not indicated, shall be executed until the required dimensions have been obtained from the Engineer.

12.3 Contractor to Check Plans and Schedules

12.3.1 The Contractor shall check all dimensions, elevations and quantities shown on the Plans and schedules given to the Contractor by the Engineer, and shall notify the Engineer of any discrepancy between the Plans and the conditions on the ground, or any error or omissions in the plans, or in the layout as given by stakes, points, or instructions, which the Contractor may discover in the course of the work. The Contractor will not be allowed to take advantage of any error or omission in the Plans or Contract Documents, as full instructions will be furnished by the Engineer should error or omission be discovered, and the Contractor shall carry out such instructions as if originally specified.

12.3.2 The apparent silence of the Plans and Specifications as to any detail or the apparent omission from them of a detailed description concerning any point, shall be regarded as meaning that only the best general practices, as accepted by the particular trades or industries involved, shall be used.

13. SUPERVISION

13.1 The Owner may appoint or employ (either directly or through the Engineer) such engineering inspectors as the Owner may deem proper, to inspect the materials furnished and the work performed under this Contract, and to see that the said materials are furnished, and the said work performed, in accordance with the Plans and Specifications therefore.

13.2 The Contractor shall furnish all reasonable aid and assistance required by the Engineer, or by the Supervisors or Inspectors, for the proper inspections and examination of the work and all parts therefore.

13.3 The Contractor shall regard and obey the directions and instructions of the Engineer, or by the Supervisors or Inspectors, for the proper inspection and examination of the work and all parts thereof.

13.4 The Contractor shall regard and obey the directions and instructions of the Engineer, or any Supervisor or Inspector so appointed, when the same are consistent with the obligations of this Contract and the Specifications therefore, provided, however, that should the Contractor object to any order given by any subordinate Engineer, Supervisor, or Inspector, the Contractor may make written appeal to the Engineer for his decision.

13.5 Engineering Inspectors, and other properly authorized representative of the Owner or Engineer shall be free at all times to perform their duties, and intimidation or attempted intimidation of anyone of them by the Contractor or by any of the Contractor's employees shall be sufficient reason, if the Owner so decides, to annul the Contract.

13.6 Such inspection shall not relieve the Contractor from any obligation to perform said work strictly in accordance with the Plans and Specifications or any modifications thereof as herein provided, and work not so constructed shall be removed and made good by the Contractor at the Contractor's own expense, and free of all expense to the Owner, whenever so ordered by the Engineer, without reference to any previous oversight or error in inspection. Any defective material or workmanship may be rejected by the Engineer at any time before the final acceptance of the work, even though the same may have been previously overlooked and estimated for payment.

13.7 Inspector shall have authority subject to the final decision of the Engineer to condemn and reject any defective work or material and to suspend the work when the same is not being properly done.

13.8 All condemned work shall be promptly taken out and replaced by satisfactory work; all condemned materials shall be promptly removed from the vicinity of the work. Should the Contractor fail or refuse to comply with instructions in this respect the Owner may, upon certification by Engineer, withhold payment or proceed to terminate Contracts as herein provided.

13.9 Re-examination of questioned work may be ordered by the Engineer, and if so ordered, the work must be uncovered by the Contractor. If such work be found not done in accordance with the Contract Documents, the Owner shall pay the cost of re-examination and replacement. If such work be found not in accordance with the Contract Documents, the Contractor shall pay such cost, unless the Contractor shall show that defect in the work was caused by another Contractor of the Owner and in that event the Owner shall pay the cost.

13.10 The Contractor shall furnish samples for testing purposes of any material required by the Engineer, and shall furnish any information required concerning the nature or source of any material which the Contractor proposes to use. Laboratory tests are to be made as directed by the City Engineer and the cost to be paid by the Owner.

14. LINE AND GRADE

14.1 All construction work shall be done to the lines and grades shown on the Plans. The Engineer will establish on the site horizontal and vertical control benchmarks as shown on the Plans. Detailed survey and staking for location and grade of individual structures or other construction, as well as measurements and elevations within structures shall be performed by the Contractor.

14.2 For the construction of sewers, water lines, street and other types of lines or route work, the Engineer will establish on the site horizontal and vertical control bench marks, as shown on the Plans, with reference to dimensions thereto from which the work may be laid out by the Contractor.

14.3 Consult Special Conditions for any exceptions to above requirements concerning detailed survey and staking applying to this particular contract. In any case, all such detailed survey and stake out shall be checked by the Contractor who shall assume full responsibility for the accuracy and correctness thereof.

14.4 In all cases, the Contractor shall provide without extra compensation, competent workers and the necessary tools, and other materials required for proper checking of the work.

14.5 The Contractor shall without extra compensation furnish competent workers and the necessary tools to make all test holes and exploration required at any time for the purpose of determining the location of existing structures beneath the ground surface which might conflict or interfere with this work.

14.6 The Contractor shall carefully preserve all monuments, reference points, stakes and bench marks set by the Engineer, and in case of destruction of same through carelessness or negligence on the part of the Contractor, he will be charged with the resulting expense of replacement and responsibility for any mistakes or loss of time caused thereby.

15. SUPERINTENDENCE

15.1 The Contractor shall keep on the project, during its progress, a competent Superintendent and any necessary assistants, all satisfactory to the Engineer. The Superintendent shall represent the Contractor in the Contractor's absence and all directions given to the Superintendent shall be binding as if given to the Contractor.

15.2 The Contractor shall provide proper tools and equipment and the services of all workers, mechanics, trades people, and other employees necessary in the construction and execution of the work contemplated and outlined herein. The employees of the Contractor shall be competent and willing to perform satisfactorily the work required of them. Any employee who is disorderly, intemperate or incompetent or who neglects or refused to perform his work in a satisfactory manner, shall upon the request of the Engineer, be promptly discharged from the Project and shall not be re-employed except with the Engineer's consent.

15.3 It is called particularly to the Contractor's attention that only first-class workmanship will be acceptable.

16. PROTECTION OF WORK

16.1 The Contractor shall continuously maintain adequate protection of all the Contractor's work from damage and shall protect the Owner's property from injury of loss arising in connection with this Contract. The Contractor shall make good any such damage, injury or loss, except such as may be directly due to errors in the Contract Documents or caused by agents or employees of the Owner. The Contractor shall adequately protect adjacent property as provided by law and the Contract Documents. The contractor shall Provide and maintain all passageways, guard fences, lights and other facilities for protection required by public authority of local conditions.

16.2 In an emergency affecting the safety of life or of the work or of adjoining property, the Contractor without special instruction or authorization from the Engineer, is hereby permitted to act at the Contractor's discretion to prevent such threatened loss or injury, and the Contractor shall so act, without appeal, if so instructed or authorized. Any compensation, claimed by the Contractor on account of emergency work, shall be determined by agreement or arbitration.

16.3 Whenever, in the opinion of the Engineer, the Contractor has not taken sufficient precaution for the safety of the public or the protection of the work to be constructed under this Contract, or of adjacent structures or property which may be injured by the processes of construction on account of such neglect, and whenever, in the opinion of the Engineer, an emergency shall arise and immediate action shall be considered necessary in order to protect the public or private, personal or property interest, then the Engineer, with or without notice to the Contractor, may provide suitable protection to the said interest by causing such work to be done and material to be furnished and placed as the Engineer may consider necessary and adequate.

16.4 The cost and expense of such work and material so furnished shall be borne by the Contractor, and, if the same shall not be paid on presentation of the bills therefore, such costs shall be deducted from any amounts due or to become due the Contractor. The performance of such emergency work under the direction of the Engineer shall in no way relieve the Contractor of responsibility for damages which may occur during or after such precaution has been duly taken by the Engineer.

17. SAFETY REGULATIONS

17.1 Notwithstanding any other provisions to the contrary, the Contract Documents shall be subject to the applicable provisions of the Williams-Steiger Occupational Safety and Health Act of 1970, Public Law 91-596, 84 Stat. 1590; and Iowa Senate File 1218, Acts 64th General Assembly, Second Regular Session (1972); and all lawful regulations and rules pursuant thereto.

18. MATERIALS AND WORKMANSHIP

18.1 The Contractor hereby guarantees the work in connection with this Contract against faulty materials or poor workmanship during the period of time, as set out in the Notice after the date of completion and acceptance of the Contract.

19. SHOP DRAWINGS

19.1 The Contractor shall furnish the Engineer with duplicate copies of all shop and erection Drawings for preliminary approval. These Drawings shall include the Drawings prepared on structural and reinforcing steel, special layout, Drawings of equipment or machinery purchased under this Contract, and any other supplementary Drawings required in the prosecution of the work. One copy shall be returned to the Contractor for correction and one copy retained by the Engineer for office reference. After correction, the Contractor shall submit five (5) corrected copies to the Engineer for final approval and distribution to all interested parties. No material or equipment shall be used or installed until such formal approval is received by the Contractor.

19.2 The purpose of having shop and erection Drawings checked and approved by the Engineer are two-fold:

19.2.1 To assure the compliance with the purpose and intent of the Plans and Specifications.

19.2.2 To assist the Contractor in interpreting the Plans and Specifications so as to eliminate mistakes in the material or equipment actually shipped to the site of the work.

19.3 The formal approval given to the Contractor is to be considered as in compliance with these purposes and in no manner shall be construed so as to relieve the Contractor from any liability or responsibility for proper construction or compliance with the Plans and Specifications.

20. USE OF COMPLETED WORK

20.1 The Owner shall have the right to take possession of and use any completed or partially completed portions of the work, notwithstanding the time for completing the entire work or such portions as may not have expired; but such taking, possession and use shall not be deemed an acceptance of any work not completed in accordance with the Contract Documents. If such prior use increases the cost of, or delays the work, the Contractor shall be entitled to such extra compensation or extension of time, or both, as the Engineer may determine.

20.2 The Owner, in taking possession of completed portions, agrees to accept the decision of the Engineer on matters relating to responsibility for damage that may occur to any portion of the work during the period of possession preceding acceptance and final payment.

21. CHANGED WORK

21.1 The Owner, without invalidating the Contract, may order additional work to be done in connection with the Contract, or may alter or deduct from the work, the contract sum to be adjusted accordingly. All such work shall be executed under the conditions of the original Contract and subject to the same inspection and test as though therein included.

21.2 Provided, however, that any additional, omitted or changed work shall not be ordered, undertaken or commenced until after the consent has been obtained in writing of the Contractor's construction surety bonds persons, except minor changes not inconsistent with the general purpose of the Contract not involving costs or substitution of materials.

21.3 The Owner shall have authority, by verbal instructions, to make minor changes in the work, not involving cost, and not inconsistent with the purposes of the work. Otherwise, except in an emergency endangering life or property, all extra work or changes shall be done as ordered in writing by the Owner, which order shall state the location, character, amount, and method of compensation. No extra work or change shall be made unless in pursuance of such written order by the Owner, and no claim for an addition to the Contract sum shall be valid unless so ordered. The adjustment to the Contract sum for any such extra work or change shall be determined in one or more of the following ways:

21.3.1 By a Lump Sum Price agreed upon prior to starting the additional or changed work.

21.3.2 By Unit Prices named in the Proposal or as agreed upon prior to starting the additional or changed work.

21.3.3 By cost plus a fixed fee, the latter agreed upon prior to starting the additional or changed work.

21.3.4 By cost plus percentage, the latter agreed upon prior to starting the additional or changed work.

21.4 "Cost" in methods (21.3.3) and (21.3.4) shall include all labor, materials, power, fuel and rental on major items of equipment. The Contractor shall keep and present in such forms as the Engineer may direct, a correct account of the several items of cost together with vouchers. This definition and requirement applies equally to work done by Subcontractors.

21.5 Under method (21.3.4), compensation or adjustment for work done by Subcontractors shall be computed on the same basis as if done by the Contractor except that ten percent (10%) shall be added to the amount or charged by the Subcontractor.

21.6 The above percentages shall be understood to include all other costs and compensation such as insurance, small tools, superintendence, office and other overhead costs and profit. Rental on equipment shall be charged against the additional or changed work only for the actual time which the equipment is used specifically thereof, and will be charged according to the current schedule of the Associated General Contractors of America, whether owned or rented by the Contractor. Transportation charges necessarily incurred in connection with equipment authorized by the Engineer for use on the extra work which is not already on the job will be charged.

21.7 Changed work shall be adjusted considering separately the parts of the work added and the parts omitted. Amount of adjustment for parts omitted shall be estimated at time omission of work is authorized and the agreed adjustment will be deducted from final quantities.

21.8 Statements for additional or changed work shall be rendered by the Contractor not later than fifteen (15) days after the completion of each assignment of additional or changed work and if found correct will be approved by the Engineer and submitted for payment with the final quantities.

21.9 The Owner reserves the right to Contract with any person or firm other than the Contractor for any or all extra work. The Contractor's attention is especially called to the fact that he shall be entitled to no claim for damages for anticipated profits on any portion of the work that may be omitted.

21.10 In Unit Price Contracts the total quantity of work may be adjusted upward or downward by the Owner, to the extent that the final Contract price is between 80 and 120 percent of the original estimated Contract price. Amounts of individual items may be varied to any extent and individual items may be omitted entirely as long as the above limits are met. In the event that the total quantity of work is adjusted upward or downward beyond the above limits, that portion of the work beyond said limits may be performed at the original Contract unit prices if agreed by the Owner and the Contractor, or otherwise, shall be handled in accordance with the provisions stated previously in this article.

22. DISPUTED CLAIMS

22.1 In any case where the Contractor deems that extra compensation is due the Contractor for work material not clearly covered in the Contractor's Contract and not ordered by the Engineer as extra work as defined herein, the Contractor shall notify the Engineer in writing of the Contractor's intention to make claim for such extra compensation before the Contractor begins the work on which the contractor bases the Contractor's claim.

22.2 The Owner shall be responsible for damages attributable to the performance, nonperformance, or delay, of any other Contractor, governmental agency, utility, firm, corporation, or individual authorized to do work on the Project, only when such damages result from negligence on the part of the Contracting Authority as damages resulting from such performances, nonperformance, or delays. The Contractor shall notify the Engineer in writing at the time the delay occurs.

22.3 In either case, if such notification is not given, or if after such notification is given, the Engineer is not afforded facilities for keeping strict account of actual costs as defined for force-account construction, the Contractor thereby agrees to waive the claim for extra compensation for such work. Such notice by the Contractor, and the fact that the Engineer has kept account of the cost as aforesaid, shall not be construed as establishing the validity of the claim. The claim, when filed, shall be in writing and in sufficient detail to permit auditing and an intelligent evaluation by the Owner. The claim shall be supported by such documentary evidence as the claimant has available and shall be verified by affidavit or the claimant or other persons having knowledge of the facts. In the event the claimant wishes an opportunity to present his claim in person, then the claim shall be accompanied by a written request to do so. Where the claimant asks an opportunity to present the claimant's claim in person, the Owner, within thirty (30) days of filing of the claim, shall fix a time and place for a meeting between the claimant, the Owner, or its designated representative or representatives. The Owner shall, within a reasonable time from the filing of the claim or the meeting above referred to, whichever is later, rule upon the validity of the claim and notify the claimant, in writing, of its ruling together with the reasons thereof. In case the claim is found to be just, in whole or in part, it shall be allowed and paid to the extent so found.

22.4 Any claim of the Contractor denied in whole or in part by the Owner or Engineer may be submitted to arbitration as set forth in Article 32.

23. SUSPENSION OF WORK

23.1 The Owner may at any time without cause suspend the work or any part thereof by giving ten (10) days written notice to the Contractor. The work shall be resumed by the Contractor within ten (10) days after the date fixed in the written notice from the Owner to the Contractor to do so. Failure of the Contractor to maintain the policies of insurance as required by Section 6 shall constitute a substantial violation of the Contract and the Owner shall have the right to suspend and/or terminate the Contract in accordance with Section 25.

23.2 If the work or any part thereof, shall be stopped by the notice in writing aforesaid, and if the Owner does not give notice in writing to the Contractor to resume within a reasonable period of time, then the Contractor may abandon that portion of the work so suspended, and he will be entitled to the estimated payments for all work done on the portions abandoned, if any.

24. OWNER'S RIGHT TO DO WORK

24.1 If the Contractor should be adjudged bankrupt, or if the Contractor should make a general assignment for the benefit of the Contractor's creditors, or if a receiver should be appointed on account of the Contractor's insolvency, or if the Contractor should persistently or repeatedly refuse or should fail, except in cases for which extension of time is provided, to supply enough properly skilled workers or proper materials, or if the Contractor should fail to make prompt payments to subcontractors or for material or labor, or persistently disregard laws, ordinances or instructions of the Engineer, or otherwise be guilty of a substantial violation of any provision of the Contract, then the Owner, upon the certificate of the Engineer that sufficient cause exists to justify such action, may without prejudice to any other right or remedy and after giving the Contractor seven (7) days written notice, terminate the employment of the Contractor and take possession of the premises and of all materials, tools, and appliances thereon and finish the work by whatever method the Engineer may deem expedient.

24.2 In such case, the Contractor shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the Contract price shall exceed the expense of finishing the work, including compensation for additional managerial and administrative services, such excess shall be paid to the Contractor. If such expense shall exceed such unpaid balance, the Contractor shall pay the difference to the Owner. The expense incurred by the Owner as herein provided and damage incurred through the Contractor's default, shall be certified by the Engineer.

24.3 Pending arbitration or settlement of disputes on any point of controversy the Engineer may suspend action on all or any part of the work. The Contractor shall not be entitled to any claim for loss or damage by reason of such delay nor shall he be entitled to any claim for loss or damage by reason of such delay nor shall he be entitled to extension of time although such extension of time may be granted by the Engineer if the Engineer deems it in the interest of the work.

25. CONTRACT TERMINATION

25.1 If the Contractor should be adjudged bankrupt, or if he should make a general assignment for the benefit of the Contractor's creditors, or if a receiver should be appointed on account of the Contractor's insolvency, or if the Contractor should persistently or repeatedly refuse or should fail, except in cases for which extension of time is provided, to supply enough properly skilled workers or proper materials, or if the Contractor should fail to make prompt payment to subcontractors or for material or labor, or persistently disregard laws, ordinances or instructions of the Engineer, or otherwise be guilty of substantial violation of any provision of the contract, then the Owner, upon the certificate of the Engineer that sufficient cause exists to justify such action, may, without prejudice to any other right or remedy and after giving the Contractor seven (7) days written notice, terminate the employment of the Contractor and take possession of the premises and of all materials, tools, and appliances thereon and finish the work by whatever method the Engineer may deem expedient.

25.2 In such case, the Contractor shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the Contract price shall exceed the expense of finishing the work, including compensation for additional managerial and administrative services, such excess shall be paid to the Contractor. If such expense shall exceed such unpaid balance, the Contractor shall pay the difference to the Owner. The expense incurred by the Owner as herein provided and the damage incurred through the Contractor's default, shall be certified by the Engineer.

25.3 Pending arbitration or settlement of disputes on any point of controversy, the Engineer may suspend action on all or any part of the work. The Contractor shall not be entitled to any claim for loss or damage by reason of such delay nor shall the Contractor be entitled to extension of time although such extension of time may be granted by the Engineer if the Engineer deems it in the interest of the work.

26. CONTRACTOR'S RIGHTS

26.1 If the work should be stopped under an order of any court, or other public authority, for a period of three (3) months, through no act or fault of the Contractor or of anyone employed by the Contractor, or if the Engineer should fail to issue any estimate for payment within fourteen (14) days after it is due, or if the Owner should fail to pay the Contractor within twenty (20) days of its maturity and presentation any sum certified by the Engineer or awarded by arbitrators, then the Contractor, may, upon seven (7) days written notice to the Owner and the Engineer, stop work or terminate this Contract and recover from the Owner payment for all work executed and any loss sustained upon any plant or materials and reasonable profit and damages.

27. TIME OF COMPLETION

27.1 The Contract shall be completed within the time stated in the NOTICE OF HEARING AND LETTING subject to such extensions as may from time to time be allowed the Contractor by the Owner as hereinafter provided.

27.2 Substantial Completion will be determined by the engineer as follows. To achieve substantial completion for a given phase, the contractor must complete the following items:

27.2.1 Trail, sidewalk, and all other paved areas shall be installed and open for public use.

27.2.2 Box culvert, railing and all work associated with the crossing at Santiago Creek

27.2.3 All storm sewer / utility items installed.

27.2.4 Finish grading and topsoil placement.

27.2.5 Stabilization of the site in accordance with the SWPPP.

27.2.8 Tress, perennials, seeding, or other permanent installation of site restoration is not required to be completed to achieve substantial completion provided such installation is ready to be completed at such time as appropriate weather and time of year allow for installation per the project plans and specifications.

28. DELAYS

28.1 The Contractor expressly covenants and agrees that in undertaking to complete the work within the time herein fixed, the Contractor has taken into consideration and made allowances for all of the ordinary delays and hindrances incident to such work, whether growing out of delays in securing materials or workers, reasonably anticipatable weather, or otherwise. Should the Contractor, however, be delayed in the prosecution and completion of the work by reason of delayed shipment orders, abnormal weather, or by any changes, additions, omissions therein ordered in writing by the Owner, through no fault of the Contractor (or by the abandonment of the work by the workers engaged thereon), or by any act taken by the U.S. Government such as the commandeering of labor, or materials, embargoes, etc., which would affect the fabrication or delivery of materials and/or equipment to the work; or by neglect, delay or default of any other contractor of the Owner, or delays caused by court proceedings; the Contractor shall have no claims for damages for any such cause or delay; but shall in such cases be entitled to such extension of the time specified for the completion of the work as the Owner shall award in writing on account of such delays, provided, however, that claim for such extension of time is made by the Contractor to the Owner in writing with one (1) week from the time when any such alleged cause for delay shall occur.

29. PAYMENTS

29.1 Payment for said improvement will be made in accordance with the terms and conditions as set forth in the published NOTICE OF HEARING AND LETTING.

30. PAYMENTS WITHHELD

30.1 The Owner may withhold or, on account of subsequently discovering evidence, nullify the whole or a part of any certificate to such an extent as may be necessary to protect himself from loss on account of:

30.1.1 Defective work not remedied.

30.1.2 Claims filed or reasonable evidence indicating a probable filing of claims.

30.1.3 Failure of the Contractor to make payments properly to Subcontractors or for material or labor.

30.1.4 A reasonable doubt that the Contractor can be completed for the balance then unpaid.

30.1.5 Damage to another Contractor.

30.1.6 Any other violation of or failure to comply with the provisions of this Contract.

31. SALES TAX

31.1 The City of Bondurant will issue an Iowa Sales Tax Exemption Certificate to all contractors assigned to the project.

32. REMEDIES

32.1 Subject to any submission and notice provisions contained in the Contract Documents, including those in Articles 22 and 28, which shall be conditions precedent to a request for arbitration, all controversies and claims between the submitted to arbitration, at the sole discretion of the Owner. If the Owner refuses to allow arbitration of a controversy or claim, then the parties agree and consent to the jurisdiction of the Iowa District Court for Polk County.

32.2 During such time as any dispute is the subject of a demand for arbitration or a lawsuit, the contract terms shall remain in force and work shall continue as directed by the Owner or Engineer. Failure of the Contractor to continue to work as directed shall constitute a waiver by the Contractor of its claim.

32.3 All disputes allowed by the Owner to be submitted to arbitration shall be decided in accordance with the Construction Industry Arbitration Rules of American Arbitration Association ("AAA").

32.4 A written demand for arbitration shall be filed with the American Arbitration Association office in Minneapolis, Minnesota and with the other party within a reasonable time after the date of final payment to the Contractor by the Owner or after the expiration of thirty days from the rendering of a written decision by the Engineer, whichever earlier occurs.

32.5 Notwithstanding the Rules of the AAA, the arbitration panel shall consist of three persons. The Owner and the Contractor shall each appoint an arbitrator and the third shall be appointed by agreement of the appointees of the Owner and Contractor.

32.6 The arbitrators' award shall contain findings of fact and conclusions of law. The award shall be final, binding and conclusive as to findings of facts in accordance with the applicable arbitration law, but shall be reviewable for errors of law.

32.7 Nothing contained herein shall increase or otherwise expand the Owner's obligation to pay the Contractor other than documented and audited cases in accordance with the Owner's rules and regulations, regarding cost or pricing data and analysis and cost principles.

END OF SECTION

SUPPLEMENTAL REGULATIONS OF THE CONTRACT

PARK SIDE TRAIL CONNECTION PROJECT, BONDURANT, IOWA
S-H PROJECT NO. 2142301580

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1. **PURPOSE**
2. **LOCATION**
3. **COPIES OF PLANS AND SPECIFICATIONS**
4. **PAYMENT**
5. **FINAL REVIEW AND ACCEPTANCE**

1. PURPOSE

1.1 SUPPLEMENTAL REGULATIONS are intended to clarify, supplemental or supersede REGULATIONS OF THE CONTRACT.

2. LOCATION

2.1 All work is located within the City of Bondurant, Iowa, in easements on private property and on property owned by the City of Bondurant.

3. COPIES OF PLANS AND SPECIFICATIONS

3.1 After award of the contract, the Engineer will furnish the Contractor up to three (3) set of Plans and Specifications. Additional copies will be furnished at the Engineer's cost of reproduction.

4. PAYMENT

4.1 Separate payment will be made for only those items specially listed in the Proposal. All other work shall be paid for by applicable Unit Prices for items to which work pertains.

5. FINAL REVIEW AND ACCEPTANCE

5.1 Notify Engineer when installation is considered complete and ready for Final Review.

5.2 Owner will accept work and make final payment to Contractor:

5.2.1 When the Engineer has certified the work of the Contractor has been reviewed and stated that the work is complete and in essential compliance with the Plans and Specifications;

5.2.2 When Contractor has filed with Owner or Engineer documents called for in Specifications;

5.2.3 When all government agencies involved have indicated, in writing that the work is complete and acceptable.

SPECIAL CONDITIONS

PARK SIDE TRAIL CONNECTION PROJECT, BONDURANT, IOWA
S-H PROJECT NO. 2142301580

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1. FORM OF TECHNICAL SPECIFICATIONS

1.1 Omissions of words or phrases such as “the Contractor shall”, “in accordance with”, “shall be”, “as noted on the Plans”, “according to the Plans”, “a”, “an”, “the”, and “all” are intentional, supply omitted words or phrases by inference.

1.2 “Owner”, and “City” shall mean the City of Bondurant, Iowa, acting through the City Council.

1.3 “Person” shall mean any individual, partnership, limited partnership, joint venture, society, association, joint stock company, corporation, limited liability company, estate, receiver, trustee, assignee, or referee, whether appointed by a court or otherwise, and any combination of individuals.

1.4 “Engineer” shall mean the City of Bondurant City Engineer or designated agent.

1.5 “Standard Drawings” shall mean Construction Detail Drawings bound with these Specifications.

1.6 “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.

1.7 “Or equal” shall follow manufacturers names used to establish standards and, if not stated, is implied.

2. NOTICE TO PROCEED

2.1 The Contractor shall proceed with the work and in the time set forth according to the conditions as outlined in the NOTICE OF HEARING AND LETTING upon issuance of a written Notice to Proceed.

3. SERVICE FACILITIES

3.1 The Contractor will be required to make arrangements for all services required during the construction period and pay for such services at no additional cost to the Owner.

4. MINOR WORK

4.1 Any minor work not specifically mentioned in the Specifications as shown on the Plans but obviously necessary for the proper completion of the work shall be considered as being a part of and included in the contract and shall be executed in the proper manner and the Contractor shall not be entitled to extra or additional compensation for the same.

5. WASTE SITES

5.1 All waste material shall be hauled to a construction debris recycling center or salvage yard of the Contractor's choice with the Engineer's approval or an approved hazardous waste disposal site if required. Disposal costs will be included in the Contract Cost and not paid by the City as a separate item. All salvage material payments or rebates are to be credited back to the Owner and receipts or documentation provided.

6. WORKING DAYS

6.1 Work will be permitted Monday through Fridays. A 48-hour notice shall be provided to the engineer or inspector prior to work on Saturdays or Sundays. If work is to occur during an observed holiday (included below), which requires inspection, a 1-week notice shall be provided to the engineer or inspector.

6.2 Holidays are observed as follows:

- New Year's Day: Monday, January 1, 2024
- Martin Luther King Jr. Day: Monday, January 15, 2024
- Presidents' Day: Monday, February 19, 2024
- Memorial Day: Monday, May 27, 2024
- Juneteenth: Wednesday, June 19, 2024
- 4th of July: Thursday, July 4, 2024
- Labor Day: Monday, September 2, 2024
- Veterans Day: Friday, November 11, 2024
- Thanksgiving: Thursday, November 28, 2024
- Friday after Thanksgiving: Friday, November 29, 2024
- Christmas Eve (observed): Tuesday, December 24, 2024
- Christmas Day: Wednesday, December 25, 2024

7. CONSTRUCTION FACILITIES BY CONTRACTOR

7.1 Provide a telephone, attended at all times during the working day; provide liaison between telephone and construction personnel for expeditions handling of messages.

7.2 Provide suitable storage buildings necessary for proper storage of materials and equipment.

7.3 Location of all construction facilities, including Project construction plant and yard, subject to approval by Engineer; remove all construction facilities upon completion of work.

7.4 Provide and maintain suitable sanitary facilities for construction personnel for duration of work; remove upon completion of work.

7.5 Provide fences, barricades, and/or watch persons to prevent access of unauthorized persons to site where work is in progress

7.6 Provide telephone number(s) at which responsible representatives of Contractor can be reached evenings, weekends and holidays.

9. CONSTRUCTION ON HIGHWAY RIGHT-OF-WAY

9.1 All work in Right-of-Way of State and Federal Highways must comply with requirements of Iowa Department of Transportation.

10. EMPLOYMENT PRACTICES

10.1 Neither the Contractor nor his Subcontractors, shall employ any person whose physical or mental condition is such that this employment will endanger the health and safety of himself/herself, others employed on the Project, or the public.

10.2 The Contractor shall not commit any of the following employment practices and agrees to include the following clauses in any Subcontracts:

10.2.1 To discharge from employment or refuse to hire any individual because of sex, gender identity, sexual orientation, race, color, religion, national origin, marital status, age, veteran status, or disability unless such disability is related to job performance of such person or employee.

10.2.2 To discriminate against any individual in terms, condition, or privileges of employment because of sex, gender identity, sexual orientation, race, color, religion, national origin, marital status, age, veteran status, or disability unless such disability is related to job performance of such person or employee.

11. WORK HOURS

11.1 The Contractor will be required to limit the Contractor's work hours on the Project from 7:00 a.m. to 10:00 p.m., Sunday through Saturday unless noted otherwise. Should equipment be used which is excessively noisy and distressing to area residents, the Engineer reserves the right to limit hours of operation from 7:00 a.m. to 7:00 p.m.

12. DUST ABATEMENT

12.1 The Contractor shall make a reasonable effort to assure dust does not become a problem. The Engineer reserves the right to stop Contractor's operations whenever dust becomes a problem on the Project and direct the Contractor to revise operations to solve the dust problem. It is realized some dust on the Project is inevitable, but it must be kept to a minimum.

13. WATER USAGE

13.1 Bondurant Public Works will provide the Contractor a nominal amount of water on the Project free of charge for watering sod only, with the following requirements:

13.1.1 The water is to be metered and the Contractor must obtain the meter from the Bondurant Public Works and a refundable meter deposit is required.

13.1.2 The Contractor will abide by rules and regulations of bulk water usage as prepared by Bondurant Public Works.

13.1.3 The Contractor will only use hydrants that have been previously approved by the Bondurant Public Works for bulk water usage.

13.1.4 The Contractor shall not use water from private residential or business hose bibs, without the written consent of the private owner. Any such agreements must be filed with the Engineering prior to water usage.

13.1.5. The water provided on the Project free of charge will consist of 870 gallons of water per square (100 square feet) of sod installed on the Project. Additional water usage shall be the sole responsibility of the Contractor. Additional water shall be paid for at the current Bondurant Public Works rate.

13.1.6 The Contractor must notify Bondurant Public Works prior to using the assigned water meter on any other project.

14. QUANTITIES

14.1 The Contractor is to realize some of the quantities on this Project are best estimates and may vary from actual conditions at time of construction of the Project. Quantities must be regarded as approximate only and are given as a guide to the Bidder and for comparison of Bids. The City reserves the right to increase or diminish these quantities within reasonable limits and the Contractor will be paid for only as much work as the contractor is required to do by the City at the unit price stated in the Proposal.

15. PROJECT FUNDING REQUIREMMENTS

15.1 Division 1 of the project contains federal funding through the Land and Water Conservation Fund. As such the Build America, Buy America Law DOI Small Grants Waiver applies to Division 1 of the project.

15.2 The contractor is expected to promote participation of disadvantaged business enterprises as suppliers, manufactures and subcontractors through a continuous, positive, result-oriented program. **No TSB Goal has been assigned to this project.**

15.2.1 Contractor shall complete TSB Pre-Bid Contact Information Form and included in the bid submission. Refer to Appendix A for TSB Contract Provision and Pre-Bid Contact Form.

PLAN LIST

PARK SIDE TRAIL CONNECTION PROJECT, BONDURANT, IOWA
S-H PROJECT NO. 2142301580

1. PLANS

1.1 The work shall conform to the following Drawings (bound herewith) and Detail and Standard Drawings (bound herewith), all of which constitute the "Plans" and are an integral part of the Contract Documents.

Index of Sheets	Drawing Number	Revision Number
Title Sheet	A.1	
Legend and Symbols	A.2	
Overall Project Limits	A.3	
Typical Sections	B.1	
Estimated Project Quantities	C.1	
Estimate Reference Notes	C.2 – C.3	
General Notes	C.4	
Mainline Plan and Profile	D.1 – D.2	
Sidewalk Connection Plan and Profile	E.1	
Alignment Data	G.1 – G.2	
Landscape Plan	P.1 – P.3	
Landscape Schedule	P.4	
Fishing Note Detail	P.5	
Planting Details	P.6	
Culvert Situation Plan	V.1	
Mainline Cross Sections	W.1 – W.3	

DETAILED SPECIFICATIONS

PARK SIDE TRAIL CONNECTION PROJECT, BONDURANT, IOWA
S-H PROJECT NO. 2142301580

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18. LANDSCAPE PLANTING

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 required 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; Engineer's interpretation shall be accepted as final.

4. WORK INCLUDED

4.1 Construct Improvements as set out in NOTICE OF HEARING AND LETTING and these Contract Documents.

5. STARTING AND COMPLETION TIMES

5.1 Start work within 10 calendar days after date set forth in written Notice to Proceed. It is anticipated that the Notice to Proceed will be issued within 30 calendar days after the award of contract. Complete work within the time set out in the NOTICE OF HEARING AND LETTING.

6. INFORMATION FOR ENGINEER

6.1 After award of Contract submit following information and drawings for Engineer's review. Total number of reviewed copies required for distribution: four (4) and all copies required by Contractor.

6.1.1 Manufacturer's Specifications and catalog data for manhole steps, covers and frames, castings, and other special items.

6.1.2 Shop Drawings showing reinforcing steel details, structural steel and supports.

6.1.3 Such other information as Engineer may request.

6.2 Within 15 days after award of contract, provide construction schedule showing dates of starting and completing various portions of work. After initiation of construction, provide bi-weekly written report of construction schedule for following 2-week period.

6.3 Provide two (2) copies of the following information:

6.3.1 Purchase orders without prices and subcontracts with prices.

6.3.2 Shipping papers for all material.

6.3.3 All material test reports.

6.3.4 Concrete mix design; submit 8 days before proposed mix is to be used.

7. PLANS AND SPECIFICATIONS

7.1 Engineer will furnish up to three (3) sets of Plans and Specifications after award of Contract. Contractor shall compensate Engineer for printing costs for additional copies required.

7.2 Subcontractors and suppliers will be furnished copies of Plans and Specifications only at request of Contractor. Engineer will be compensated for printing costs by Contractor.

7.3 Provide one (1) set of Plans and Specifications for each foreman or superintendent in charge of each crew on job.

8. STANDARDS AND CODES

8.1 Do work in accordance with best present-day installation and construction practices.

8.2 Conform with and test materials in accordance with applicable sections of latest revisions or tentative revisions of following codes and standards unless specifically noted to the contrary.

8.2.1 American Association of State Highway and Transportation Officials (AASHTO).

8.2.2 American Concrete Institute (ACI).

8.2.3 American Institute of Steel Construction (AISC)

8.2.4 American National Standards Institute (ANSI).

8.2.5 American Society of Testing and Materials (ASTM).

8.2.6 American Water Works Association (AWWA).

8.2.7 American Standards Association (ASA)

8.2.8 American Welding Society (AWS).

8.2.9 Federal Specifications (FS).

8.2.10 Iowa Statewide Urban Design and Specifications (SUDAS) 2023 Edition

8.2.11 Iowa Occupational Safety and Health Act of 1972 (Chapter 83, Code of Iowa 1987) (IOSHA).

8.2.12 Manual of Accident Prevention in Construction by Associated General Contractors of America, Inc. (AGC).

8.2.13 Occupational Safety and Health Act of 1970 (Public Law 91-596) (OSHA).

8.2.14 Manual on Uniform Traffic Control Devices (MUTCD).

8.2.15 American Disabilities Act (ADA)

8.2.16 Standards and Codes of the State of Iowa and applicable local standards and codes of the City of Bondurant and Polk County.

8.2.17 Other standards and codes which may be applicable to acceptable standards of the industry for equipment, materials and installation under the Contract.

9. MATERIALS TESTS

9.1 Includes all materials tests or tests specified hereinafter.

9.2 Employ testing laboratory approved by Engineer to show that construction materials comply with Specifications.

9.3 Incorporate no materials in work until laboratory tests have been furnished which show that materials comply with Specifications.

9.4 All materials subject to sampling, testing, inspection and rejection at site by Engineer.

9.5 Incorporate no material in work until laboratory tests have been furnished which show materials comply with specification.

9.6 Laboratory tests for materials:

9.6.1 Reinforced concrete pipe: Test two (2) pieces of each diameter of each class furnished; check reinforcing size and placement; ASTM C76.

9.6.2 Vitrified clay pipe: Test two (2) pieces of each diameter furnished, ASTM C301.

9.6.3 Ductile iron pipe: Certify that pipe conforms to ANSI A21.51.

9.6.4 Steel pipe: Certify that pipe conforms to ASTM A53.

9.6.5 Other pipe: Certify that pipe conforms to applicable Specifications.

9.6.6 Cement: Bin sample for entire requirement, ASTM C150.

9.6.7 Concrete aggregates: One (1) sample of each, ASTM C33.

9.6.8 Reinforcing steel: Furnish original and one copy of certified test report by manufacturer.

9.6.9 Welded wire fabric: Furnish original and one copy of certified test report by manufacturer.

10. FIELD TESTS

10.1 Notify Engineer when installation is complete and ready for testing.

10.2 Owner will retain testing laboratory and conduct all field tests and determine location of tests.

10.3 If test results do not meet those specified, make necessary corrections and repeat tests to demonstrate that test requirements are satisfied.

11. RESPONSIBILITY OF CONTRACTOR

11.1 Protection of the 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 Cooperate with Owner, Engineer and representative 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.

11.5 Keep cleanup current.

11.6 Comply with all Federal, State of Iowa, Polk County and City of Bondurant Laws and Ordinances.

11.7 Keep existing sewers in continuous operation without bypassing.

12. TEMPORARY WORK

12.1 Make all temporary service connections necessary for maintaining utility service during the course of the work.

12.2 Construct temporary drains to keep work in the dry; maintain new improvements as directed by Engineer.

12.3 Construct temporary asphalt surfaces as directed, in order to enhance traffic control.

13. TRAFFIC CONTROL

13.1 Erect and maintain barricades and lights and/or provide watchmen for protection and warning of pedestrians and vehicles. All barricades, lights and/or watchmen at expense of Contractor. Maintenance shall include sign washing as required by the Engineer.

13.2 Location and arrangement: Conform to Ordinances, Laws and MUTCD; meet approval of Owner and Engineer.

13.3 Responsibility: Maintain, control, and protect traffic within construction area including side street crossings, temporary run-arounds, use of one or more lanes and related operations and detours outside construction area.

13.4 Closing or partially closing streets: Close or restrict traffic in streets only with permission of Engineer; provide for maximum safety and convenience of public; open street when work is complete or as directed by Engineer. Access to private property must be maintained during construction.

13.5 Emergency traffic: Provide continuous access for police, fire and emergency vehicles.

13.6 Take every precaution to protect pedestrian and vehicle traffic.

14. REMOVAL AND REPLACEMENT OF IRRIGATION SYSTEMS

14.1 Irrigation lines and sprinkler heads may exist along this project. It is the Contractor's responsibility to determine the location and types of irrigation systems to be encountered and the total work to be completed under this paragraph.

14.2 Remove parts of irrigation systems within as necessary to complete the grading, paving and utility adjustments. Cap off ends or modify systems where removals occur to allow the system's owner continued use of the remaining system. Notify owner of work completed so that necessary repairs can be completed by them.

15. STORAGE OF MATERIALS AND EQUIPMENT

15.1 Limited storage space for materials and equipment will be available at project sites and along easements; string pipe within construction easements provided.

15.2 Storage areas shall be subject to approval of Engineer.

15.3 Store materials and equipment in manner which will preserve their quality and fitness.

16. HISTORICAL/ARCHAEOLOGICAL AUDITS

16.1 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.

17. EROSION CONTROL AND NPDES STORMWATER PERMIT

17.1 This project is subject to Section 402 (b) of the Clean Water Act and Iowa Code Section 455B.174 and 567 IAC 64.4 (projects disturbing one (1) or more total acres) and requires issuance of a National Pollution Discharge Elimination System (NPDES) General Permit No. 2, or an individual NPDES Permit for Stormwater Discharge Associated with Industrial Activity for Construction Activities.

17.2 Contractor shall be the responsible party for obtaining authorization, implementing and complying with a General Permit No. 2 for Stormwater discharge for the construction activities associated with the project. Contractor shall be the permittee and solely responsible for compliance and costs associated therewith, including those specifically referenced herein. Contractor shall not rely on any stormwater discharge permitting or efforts already undertaken by the City of Bondurant for this project, including but not limited to those referenced herein. Contractor will be responsible for preparation of a Storm Water Pollution Prevention Plan.

17.3 Contractor shall be responsible to retain or engage persons knowledgeable in the preparation of a Storm Water Pollution Prevention Plan. The Storm Water Pollution Prevention Plan shall be prepared by the Contractor in a manner that complies with all Iowa Department of Natural Resources applicable requirements.

17.4 Contractor shall be the responsible party for publishing notice in newspapers as required for General Permit No. 2. The Contractor will be the responsible party for preparing and submitting Notice of Intent to the Iowa Department of Natural Resources for General Permit No. 2. The Contractor shall be responsible to pay all fees and costs associated with the preparation of the Storm Water Pollution Prevention Plan, publication of the notice and filing of Notice of Intent for coverage under General Permit No. 2.

17.5 The Contractor is responsible for implementation, inspection, maintenance, and monitoring compliance with the Storm Water Pollution Prevention Plan requirements and General Permit No.2.

17.6 All subcontractors must sign the NPDES certification statement before conducting any work at the site. The certifications must be signed in accordance with the signatory requirements found in the permit and must be incorporated in the Storm Water Pollution Prevention Plan.

17.7 In the event that the Iowa Department of Natural Resources considers the Owner to be a co-permittee, the Contractor agrees to indemnify and hold harmless the Owner for all issues and activities relating to the Storm Water Pollution Prevention Plan and permit including, but not limited to fines and penalties.

17.8 References to silt fences and other erosion control devices or measures, if any, in the specifications or on the plans are intended to illustrate typical erosion control measures to be implemented by the Contractor. References in the plans or specifications shall not be considered a part of the Storm Water Pollution Prevention Plan. The occasion that erosion control measures or devices are not indicated on the plans or in the specifications does not waive the Contractor's responsibilities associated with the NPDES Storm Water permit nor the Storm Water Pollution Prevention Plan.

17.9 Contractor is responsible for developing the phasing and staging plans for implementation of the Storm Water Pollution Prevention Plan.

17.10 The Contractor is responsible for filing the Notice of Discontinuation of General Permit No. 2 after vegetative growth has been re-established to the required levels of permit.

17.11 The Contractor is responsible for all fees and fines associated with the permit and permit violations.

17.12 The Contractor is responsible for maintaining a copy of the Storm Water Pollution Prevention Plan on the project site and for all site inspection and monitoring required by the permit.

17.13 The Contractor is responsible to complete all requirements for NPDES General Permit No. 2 in a timely manner to avoid any delays in start of construction. No construction activity shall commence until General Permit No. 2 has been issued and any requirements contained therein have been met. No extension of time for completion of construction will be granted for delays experienced in issuance or failure to meet requirements of the General Permit No. 2 in a timely manner.

17.14 The Contractor is responsible for providing project copies of the Storm Water Pollution Prevention Plan and any updates, inspection reports, and Notice of Discontinuation to the City in a timely manner.

18. LANDSCAPE PLANTING

PART 1 – GENERAL

1.1 WORK INCLUDED

A. The Contractor shall furnish all labor, materials, tools, equipment, supervision, and services necessary to install plant material, preparation of soil, fine grading, planting, mulching, landscape stone, guying, pruning, watering, edging, and the proper disposal of any excess earth or debris, maintenance all in accordance with the accompanying Drawings and these Specifications.

1.2 QUALITY ASSURANCE

A. Regulatory Requirements

1. Comply with applicable requirements of Federal, State, and Local laws, regulations and codes having jurisdiction at the project site. The Contractor shall take out all required permits, arrange for all necessary inspections and shall pay any fees and expenses in conjunction with the same as a part of the work under this section.
2. Contractor shall be responsible for certificates of inspection of plant material that may be required by Federal and Local authorities to accompany shipments of plants.
3. The entire installation shall fully comply with all local and state laws and ordinances and with all the established codes applicable thereto.
4. Local zone hardy plant material shall be utilized. Plants shall be grown in Plant zones up to Zone 5 and acquired within the Midwest.

B. Reference Standards

1. "Standardized Plant Names" by the American Joint Committee of Horticultural Nomenclature.

a. "American Standard of Nursery Stock" by the American Association of Nurseryman current edition. Standards: All plant materials, methods, etc., are to conform to the Standards of the American Association for Nursery Stock. In the event there is a discrepancy between these standards and this Specification, the most restrictive requirement shall govern.

b. Nomenclature: The names of plants required under this Contract conform to those given in the “Standardized Plant Names”, current edition, prepared by the American Joint Committee on Horticultural Nomenclature. Names of varieties not included therein conform generally with names accepted in the nursery code.

c. American National Standards Institute (ANSI); Publication ANSI/AHIA Z60.1-current edition.

d. "Specifications for Turfgrass Sod" by the Sod Producers Association (A.S.P.A.).

C. Inspection of Plant Material

1. The nursery supplier shall tag and photograph all plant material to be delivered to the site. Photographs shall be sent to the Owner and/or Owner’s Representative and Contractor for review and coordination.

2. At the time the plant material is delivered to the job site, the Contractor shall be responsible to inspect plant material and reject any material that does not meet standards detailed in ANSI Publication ANSI/AHIA Z60.1-current edition standards and Section 2.4 of this specification. Plant material shall be unwrapped in order to thoroughly inspect trunk, bark, branches, rootball, leaders and form. If material is rejected it shall be sent back to the nursery at the time of delivery at no additional charge to the owner or contractor.
3. The Owner and/or Owner's Representative shall be notified of plant inspection times at least 3 days prior by the Contractor once plant delivery has begun.

D. Coordination

1. Work in conjunction with other trades as directed, taking all reasonable precautions to avoid disturbance or interference with any other operation or installation on the site. Contractors shall be responsible for the cost of replacing any material damaged as a result of his/her negligence.

E. Points of Inspection: The Contractor shall notify the Owner and/or Owner's Representative at least five (5) days prior to start of work, inspections, or delivery to the Project Site to allow for inspection scheduling for each of the following work activities listed below. The notice must be sent via confirmable email or facsimile transmission to the Owner and/or Owner's Representative.

1. Pre-Installation Meeting: The Contractor shall meet with the Owner and/or Owner's Representative to review schedule, submittals, and project expectations. This meeting shall occur at least 10 days prior to the start of any work or deliveries to the job site.
2. Plant stock delivery: Contractor shall notify the Owner and/or Owner's Representative at least two (2) days in advance of delivery of plant material. The Owner and/or Owner's Representative must approve all plant material before installation.
3. Progress Inspections: The Owner's Representative will observe the site to monitor correct planting procedures, coordinate on unexpected site conditions, and inspection of additional plant stock on site.
4. Punch List Inspection(s): A punch list by the Landscape Architect/Owner's Representative shall be created and sent to the Contractor to coordinate any clean up, plant replacement, and repair. Refer to PART 3 -Section 3.5 for requirements.
5. One Year Establishment Period Visit to identify replacement plants and maintenance needs. Refer to PART 3.
6. One Year Warranty Period Visit to identify replacement plants. Refer to PART 3.

1.3 SUBMITTALS

A. Contractor shall submit the following to the Owner and/or Owner's Representative at least thirty (30) days prior to start of the work

1. The source and supplier of all plant material, planting schedule, fertilizer, hardwood mulch, flagstone, stone boulders, compost and other materials along with the type of equipment to be used on this project.
2. Photo samples of the following: Mulch, stone products.

B. Grower's Certificates: Proof of certification of Nursery Stock Grower and Dealer Inspection as well as any other certificates required by governmental authorities.

C. Fertilizer Manufacturer's Certificate of Compliance: Written documentation verifying compliance with chemical analysis of fertilizer furnished. Submit to Owner and/or Owner's Representative 5 days prior to delivery.

D. Substitutions: Substitutions of plant material will not be permitted unless authorized in writing by the Owner and/or Owner's Representative. If proof is submitted that any plant specified is not obtainable, a proposal will be considered for use of the nearest equivalent size or variety with corresponding adjustment of Contract Price. Such proof shall be substantiated and submitted in writing to the Owner and Owner and/or Owner's Representative at least thirty (30) days prior to start of the work under this Section. These provisions shall not relieve the Contractor of the responsibility of obtaining specified materials in advance if special growing conditions or other arrangements must be made in order to supply specified materials.

1.4 STORAGE, HANDLING, AND DELIVERY

A. Storage of Materials

1. All materials delivered to the job shall be stored so as to keep them in new condition and free from deterioration. Fertilizer, etc., shall be stored in temporary sheds off-site at Contractor's expense.

2. All nursery stock must be kept secure, cool, and moist while being stored. If storing B&B plants on site, store in either a refrigerated truck or heeled into soil or mulch.

B. Packaged Materials

1. Deliver packaged materials in unopened containers showing weight, analysis, and name of manufacturer. Protect materials from deterioration during delivery and while stored at site.

C. Plant Material

1. Plants shall not be delivered to the site until the corresponding beds are fully prepared and approved. Vegetated material shall be inspected upon delivery at job site by the Contractor. All materials must arrive with identification labels calling out the size and species name. All plant material is subject to rejection by the Contractor, Owner and/or Owner's Representative either at time of delivery or at the 1 year warranty inspection, provided it does not comply with the requirements stated herein. Any rejected stock shall be immediately removed from the premises and replaced with approved stock.

2. All plant tags shall stay on plants through planting and shall NOT be removed until Owner and/or Owner's Representative has performed the initial inspection. The plant tags shall be removed, collected, and provided to the owner once Initial Inspection is completed.

1.5 JOB CONDITIONS

A. Examination of Site:

1. The bidder must acknowledge that he has examined the site, Drawings and Specifications and the submission of a quotation shall be considered evidence that examinations have been made.

a. Field Conditions: The Contractor shall verify drawing dimensions with actual field conditions and inspect related work and adjacent surfaces. The Contractor shall report to the Owner and/or Owner's Representative all conditions which prevent proper execution of this work. The Contractor agrees to be fully responsible for any and all damage which might be occasioned by the Contractor's failure to exactly locate and preserve any and all utilities, structures, and geogrid reinforcement.

1) Soil moisture must be at or below field capacity to avoid destroying the soil structure before any work begins.

1.6 SEQUENCING/SCHEDULING

A. Planting Time: Proceed with and complete planting as rapidly as portions of the site become available, working within seasonal limitations for each kind of landscape work required.

B. Allowable Planting Dates:

1. Evergreen Plants: September 1 to October 15 and prior to June 1, but not after candles exceed 1 inch.
2. Deciduous Plants (Balled and Burlapped and Container): August 15 to November 15 or the 1st frost of the season and in the spring prior to June 1
3. Perennials: August 15 to October 15 and prior to June 1.
4. Weather Restrictions: Planting may be conducted under unseasonable conditions, except in weather below 32 degrees or above 90 degrees. No variance from plant warranty or other requirements will be given for plants installed outside the specified period.

1.7 MATERIALS CLEAN-UP

A. The Contractor shall keep the premises free from rubbish and all debris associated with their work at all times and all unused materials and debris shall be removed from the site.

PART 2- MATERIALS

2.1 TOPSOIL

A. Refer to Plan Notes.

B. Topsoil shall be fertile, natural topsoil, typical of the locality. Stockpiled topsoil may be used if approved by the Owner and/or Owner's Representative. It shall be free of subsoil, slag, clay, stones, lumps, sticks, plants or their roots, toxic substances or other extraneous matter that may be harmful to plant growth or would interfere with future maintenance. Topsoil to have a PH value of minimum 5.4 and maximum 7.0.

C. Soils receiving seed, sod or plants shall be cultivated to decompact soils from construction activity to a depth of 12".

2.2 PLANTING BED SOIL MIXTURE FOR PLUGS

A. Cultivate the top 12" of existing topsoil for planting tree holes and beds and blend with 3" organic compost. Submit data for approval.

B. Very poor soils of clay, gumbo, gravel, hard-pan, or other soils injurious to plants shall not be used. Notify Owner/Owner's Representative if these conditions exist before proceeding.

2.3 FERTILIZER

A. All fertilizers shall be horticultural grade complete formula fertilizers and shall conform to the applicable State Fertilizer Laws. Fertilizer shall consist of uniform dry granulated nutrients produced by mining and manufacturing processes and commonly used in the agricultural or lawn care industries. It shall contain the three major plant nutrients of nitrogen, phosphorous, and potassium. Commercial fertilizer may be furnished as a homogenous or blended form. Submit product information for Owner and/or Owner's Representative approval.

2.4 PLANT MATERIALS

A. Plant Schedule: A list of plant materials is scheduled on the Drawings. In the event of any discrepancy between this schedule and the Plan Drawing showing the plants, the Plan Drawing shall govern.

B. Certification of inspection of plant materials required by Federal, State, or other governmental agencies to accompany all shipments to be furnished to the Owner and/or Owner's Representative. Plants shall have been grown under climatic conditions similar to those in the locality of the project.

C. Planting stock shall be well-branched and well formed, sound, vigorous, healthy, free from disease, sun-scale, windburn, abrasion, and harmful insects or insect eggs; and shall have healthy, normal unbroken root systems. Deciduous trees and shrubs shall be symmetrically developed with branches of uniform growth, with straight trunks and central leaders, and free from objectionable disfigurements. One-sided branching plant material will be rejected.

D. Evergreen trees and shrubs shall have well-developed symmetrical tops with typical spread of branches for each particular species or variety. Evergreen leaders shall be straight and central. Evergreen trees and shrubs shall not be sheared.

E. Stock Sizes: All stock measurements - caliper, height, branching level, number of canes, ball sizes shall be in strict accordance with the latest edition of the American Standard for Nursery Stock, unless otherwise noted on the plans. Plants used on the project shall meet or exceed all minimum requirements indicated in the size, condition, and remarks sections of the planting legend on the plan sheets.

F. Provide plants free of the following:

1. Harmful insects, insect eggs, borers, and all forms of infestation.
2. Plant diseases and moldy or dried roots.
3. Damage to trunk, bark, branches, leaders, root systems, or cut-leaders.
4. Defects, disfiguring knots, sunscald injuries, and frost cracks.
5. Rodent or deer damage to bark and buds.

G. Plants with broken or cut back terminal leaders will be rejected. Plants with crooked or split leaders will be rejected.

H. All stock shall be balled and burlapped or container grown stock. Bareroot stock of any kind is unacceptable.

I. All plant material must be watered the same day it is planted in order to comply with these Specifications.

J. Delivered trees with more than 4” or more of soil over the root flare shall be rejected. If after carefully removing the soil over the trunk flare unveils encircling or excessive roots and/or unhealthy conditions the tree will be rejected. The trunk of the tree shall not be more than 10% off center within the rootball. The Contractor, Owner and/or Owner’s Representative may open soil balls to inspect for root condition, size, balance, and trunk location within the ball.

K. Ornamental grasses and perennials shall be inspected by root mass and top growth. Containers shall be removed to ensure roots have grown to the width and the depth of the container and have a solid root mass per ANSI standards to hold the soil ball intact. If root mass is undersized the plant shall be rejected. 1 gallon container plants shall also have a minimum of 6” vertical height.

L. 6” Plugs to have a solid root mass per ANSI standards to hold the soil ball intact. If root mass is undersized the plant shall be rejected. Plug plants shall also have a minimum of 3” vertical height.

2.5 MULCHES

A. Double Shredded Hardwood Mulch shall be used in planting beds as indicated on plans:

1. Locally obtained or a proprietary product.
2. Shredded hardwood mulch as approved by the Owner and/or Owner’s Representative. No artificially colored mulch will be accepted.
3. Provide 2" depth in strips where plugs are placed, and 3" depth at tree plantings.

2.6 WEED BARRIER & WEEDING

A. Provide a chemical base weed prevention plan for all planting beds. Apply once installation is complete.

B. Contractor shall be responsible for weeding of vegetated areas through warranty period.

2.7 STAKING MATERIALS + EDGING

A. Stakes for tree support shall be steel "T" bar fence post, 6' long, painted dark green with the top 6” painted white.

B. Hose shall be reinforced garden hose no less than ½” inside diameter or fabric straps or other material approved by the Owner and/or Owner’s Representative. Provide hose of adequate length to prevent contact of staking or guying wire with tree trunk.

C. Provide wire of sufficient gauge to resist breaking during high winds.

2.8 BED EDGING

A. Provide Spade Cut Edge between turf and plant bed areas.

2.9 WATER

A. Water shall not contain elements toxic to plant life. It shall be the Contractor’s responsibility to obtain water to be used for a temporary watering system of plant material. The Contractor shall coordinate with the Owner to locate the best area for water connection.

B. Provide temporary watering through the growing season to establish plant material and as needed through the warranty period to keep plant material in a thriving and healthy condition.

C. The transition of maintenance responsibilities shall be summarized by the Contractor and provided in written form to the Owner once the Contractor has fulfilled work requirements to ensure watering and maintenance care keeps plants in a thriving condition.

PART 3 – EXECUTION

3.1 GENERAL PREPARATION

A. Protection of Existing Vegetation

1. All areas under drip lines of existing trees shall be kept free of construction equipment, trailers, material storage, and vehicles.
2. Exercise extreme care when working around existing trees to remain. No soil scarification or compaction from construction vehicles shall occur under any existing critical root zone.

B. Clearing

1. All planting bed areas and areas of turf establishment are to be cleared by the Contractor.
2. Clearing shall consist of the satisfactory removal and disposal of brush, rubbish, and other vegetative growth occurring within all proposed turf and planting bed areas unless turf is being over-seeded. All debris associated with this work shall be gathered and removed from the project by the Contractor.

3.2 TREE, SHRUB, AND PERENNIAL INSTALLATION

A. All planting shall be performed by personnel familiar with the accepted procedure of planting and under the constant supervision of a qualified planting foreman.

B. All planting is to be done as shown on drawings and as specified herein and in strict accordance with standard horticultural practices.

C. Preparation of Planting Mixture and Beds

1. Plant material locations and planting bed outlines shall be staked on the project site by the Contractor and approved by the Owner and/or Owner's Representative before any plant pits or beds are excavated. Plant material locations and bed outlines may be adjusted by the Owner and/or Owner's Representative to meet field conditions.
2. Mix recommended soil amendments and fertilizers with topsoil at recommended rates. Delay addition of fertilizer if planting mixture will not be used within two (2) days.
3. Planting beds shall be cultivated to a minimum depth of 12".
4. The Contractor shall be responsible for testing percolation rates to measure adequate drainage in the planting area. Where trees, shrubs, or perennials are planted a test bed shall be prepared with the location selected by the Owner and/or Owner's Representative. A percolation test shall be conducted by filling a 16" deep planting hole with water and measuring the time it takes for the water to drain. Adequate drainage will be considered equal to or greater than a percolation rate of ½" per hour. In case of inadequate drainage, the Owner and/or Owner's Representative shall be notified. Beds shall be free of rocks larger than one inch diameter, weeds, scrap material, and objectionable materials. Beds shall also demonstrate proper incorporation of soil additives.

D. Installation of Trees, Shrubs and Perennial

1. Planting pits shall be excavated to produce vertical sides and flat bottoms. Scarify side walls to alleviate glazing and loosen any hard subsoil in bottom of pit. Minimum pit sizes shall be as shown on drawings.
2. Dispose of all subsoil, clay, and rock (off-site) removed from planting excavations. The top six (6) inches of topsoil excavated from the planting pit, if free from subsoil, clay, rocks, roots, or other debris, may be utilized in the topsoil mixture as specified.
3. Setting Plants
    a. The Contractor shall install the first balled and burlapped tree with the Owner and/or Owner's Representative present to ensure proper planting methods. Refer to planting details and specifications for the proper planting procedure of hole preparation and removal of all twine, wire cage and other trappings of the root ball. Root ball crowns shall also be set so that they are 2" higher than the surrounding grade to ensure the root flare is slightly above grade.
    b. Balled and burlapped and container grown plants shall be handled and moved only by the ball or container. Remove all the wire cage and burlap except for 1/3 of the bottom before placing root ball in the ground. Inspect rootball to ensure specifications are met in Section 2.4. Plants shall be set plumb and held in position until a sufficient quantity of planting soil mixture has been firmly placed around roots or ball. Once the tree is stabilized in the planting hole, carefully remove burlap, twine, and all other trappings as much as possible before partially backfilling. Trees shall be watered in allowing water to completely soak into ground after partial backfill.
    c. The remainder of backfill of planting soil mixture shall be tamped and watered.
    d. Container-grown stock shall be removed from containers without damaging plant or root system. Planting shall be completed as specified for balled or burlapped plants.
4. Double Shredded Hardwood Mulching
    a. Mulch for plug areas shall be (1.5"). Mulch for all tree plantings shall be (3") in depth.
    b. Mulching shall take place within 48 hours after planting.
    c. Mulch shall be kept out of the crowns of shrubs and off walls, sidewalks, light standards, and other structures.
    d. The top of all areas of mulch cover shall be 1" below the top of adjacent curb, walk, wall, wall cap, or edge of pavement.
    e. Mulching shall be considered incidental to the overall project. No additional compensation shall be allowed.
5. Staking and Guying
    a. Plants shall be staked and guyed as indicated on plans within 24 hours of planting.

b. Stakes shall be driven vertically into the ground to a depth specified in details and in such a manner as not to damage the ball or roots.

c. All deciduous trees greater than two and one half inches (2 1/2") caliper shall be staked with three metal “T” stakes, spaced equal distant around the tree.

d. All evergreen trees shall be staked with two metal “T” stakes, spaced on either side of the tree.

e. Staking and guying shall be considered incidental to the overall project. No additional compensation shall be allowed.

6. Pruning: The Contractor shall prune new plant material in the following manner: Dead and broken branches shall be removed. Evergreen plants shall not be thinned out or sheared. Shrubs shall not be sheared. All plants shall meet or exceed the minimum requirements indicated in the size, condition, and remarks sections of the planting legend on the plan sheets after pruning has taken place. Cuts shall be made with sharp instruments and shall be in compliance with ANSI A300 Pruning Standards. "Headback" cuts at right angles to line of growth shall not be permitted. All trimmings shall be removed from the site.

   a. Pruning shall be considered incidental to the overall project. No additional compensation shall be allowed.

7. Wrapping: The Contractor shall wrap trees in the fall to help prevent sun scald and frost cracks unless otherwise directed by Owner and/or Owner’s Representative. 4 inch wide bituminous impregnated tape, corrugated or crepe paper, specifically manufactured for tree trunk wrapping, having qualities to resist insect infestation, or similar material approved by the Owner and/or Owner’s Representative. Wrapping shall overlap about 33 percent with each turn and fastened with twine. All wrap and twine shall be removed in spring.

8. Watering: The Contractor is responsible for maintaining adequate, but not excessive, soil moisture for plants installed. Watering must respond to varying seasonal conditions, soil types, and drainage. Water must thoroughly soak the entire root area rather than dampen the soil surface.

9. Initial inspection of the planting to determine completion of contract work, exclusive of possible replacement of plants, will be made by the Owner and/or Owner’s Representative upon completion of the work. All plants shall be alive, healthy and in a vigorous growing condition at the time of initial acceptance. The Contractor shall notify the Owner and/or Owner’s Representative when initial installation is complete.

3.3 INSTALLING MULCH

A. Mulching

1. The top of all areas of mulch cover shall be 1/2” below the top of adjacent curb, walk, wall, limestone edger, wall cap, or edge of pavement. Chemically treat beds once installation is complete.

2. Weed prevention and mulching shall be considered incidental to the overall project. No additional compensation shall be allowed.

3.4 ACCEPTANCE

A. Planting acceptance shall be based upon the following criteria:

1. All requirements for the completed installation and maintenance have been provided.
2. Clean-up operations are completed.
3. All required submittals have been received by the Owner, including maintenance instructions.
4. Plants shall be well-branched and well-formed alive, healthy, and in a vigorous growing condition at the time of acceptance.

B. Seven (7) calendar days prior to the anticipated date of punch list inspection, submit written notice requesting inspection to the Owner's Representative.

C. The Owner, Contractor, and Landscape Architect will complete a punch list inspection of the landscape to determine completion of contract work. Punch list inspection will not be conducted unless all items of work as outlined in PART 3 - EXECUTION have been completed.

D. After the punch list inspection, the Contractor will be notified in writing by the Owner's Representative, of any deficiencies in the requirements for completion of the work.

E. The Contractor will complete/resolve all of the items on the punch list and submit written notice requesting follow up inspection to the Owner's Representative seven (7) calendar days prior to the anticipated date of a follow up inspection.

F. The Owner, Contractor, and Landscape Architect will complete a follow up inspection of the landscape to determine completion of all punch list items. If all items are complete, the Owner's Representative will issue a written Notice of Acceptance. If not, the Contractor will be notified in writing by the Owner's Representative, of any remaining deficiencies in the requirements for completion of the work and another follow up inspection will be scheduled. The Landscape Architect will perform no more than two inspections to determine whether the Work or a designated portion thereof has attained Final Completion in accordance with the Contract Documents. The Owner is entitled to reimbursement from the Contractor for the amounts paid to the Landscape Architect for any additional inspections.

G. At the time of the Notice of Acceptance, the 1 year establishment inspection will be scheduled by the Owner's Representative.

3.5 ESTABLISHMENT PERIOD

A. The plant establishment period is 1 year after the installation is accepted by the Landscape Architect or Owner.

3.6 WARRANTY PERIOD

A. An additional **1-year warranty** period begins immediately after the expiration of the **1-year establishment** period.

3.7 MAINTENANCE

A. Care for all plants during the establishment and warranty period as required to keep plants in a live, healthy growing condition.

1. Prune plants to maintain a desirable shape and to remove any dead or broken limbs.

2. Remove weeds and grasses from planting beds and mulch areas. Apply a pre-emergent herbicide to control weed growth when directed by the Engineer.
3. Water as required to enhance early root growth and maintain a moist soil.
4. Adjust stakes and ties to maintain plant in an upright and plumb condition.
5. Re-set settled plants to proper grades and position. Restore planting saucer and mulch add backfill material and mulch as may be required.
6. Apply appropriate insecticides and fungicides necessary to maintain plants free of insects and disease.

3.8 WARRANTY AND REPLACEMENT

A. Replace all plants not found to be in a live, healthy and growing condition during inspection a the 1 year establishment period and again at the warranty period at no additional cost to the Contracting Authority.

B. Any plant required under this Contract that is dead or not in a vigorous, thriving condition, as determined by the Owner's Representative at the time of establishment and warranty inspection, will be removed from the site.

C. The Owner, Contractor, and Landscape Architect will complete an establishment and warranty inspection of the landscape.

D. After the inspections, the Contractor will be notified in writing by the Owner's Representative, of any deficiencies or required replacements.

E. The Contractor will complete/resolve all of the items on the establishment and warranty inspections and submit written notice requesting follow up inspection to the Owner's Representative seven (7) calendar days prior to the anticipated date of a follow up inspection.

F. The Owner, Contractor, and Landscape Architect will complete a follow up inspection of the landscape to determine completion of all warranty items. If all items are complete, the Owner's Representative will issue a written Notice of Warranty Fulfillment. If not, the Contractor will be notified in writing by the Owner's Representative, of any remaining deficiencies in the requirements for completion of the work and another follow up inspection will be scheduled.

G. Plants that are missing at the time of warranty inspection are to be installed during the specified planting season when weather and site conditions permit.

H. After Notice of Acceptance, the Contractor shall replace plants (up to two times during if necessary) that are observed to be dead or in a badly impaired condition. Plants replaced during the acceptance punch list process are considered to be part of the fulfillment of the requirements of the Contract and are not part of the establishment or warranty.

I. Replacement Plants: Plants of the same kind and size as specified in the Plant Schedule; furnished and planted as specified herein. Guyed or staked, mulched, fertilized, pruned, and restored to original condition as originally specified at no cost to Owner.

J. Replacement cost shall be borne by Contractor except for possible replacements resulting from loss or damage due to occupancy at project in any part, vandalism, civil disobedience, and acts of neglect on the part of others, physical damage by animals, vehicles, fire, or losses due to curtailment of water by local authority, or to "Acts of God". Droughts, floods, tornadoes, winds of hurricane force, and hail are not normal and the damage they do cannot be calculated in a bid.

END OF SECTION

APPENDIX A

CONTRACT PROVISION

Targeted Small Business (TSB) Affirmative Action Responsibilities on Non-Federal-aid Projects (Third-party State-Assisted Projects)

1. TSB DEFINITION

   A TSB is a small business, as defined by Iowa Code Section 15.102(10), which is 51% or more owned, operated and actively managed by one or more women, minority persons, service-disabled veterans or persons with a disability provided the business meets all of the following requirements: is located in this state, is operated for profit and has an annual gross income of less than 4 million dollars computed as an average of the three preceding fiscal years.

2. TSB REQUIREMENTS

   In all State-assisted projects made available through the Iowa Department of Transportation, local governments have certain affirmative action requirements to encourage and increase participation of disadvantaged individuals in business enterprises. These requirements are based on Iowa Code Section 19B.7. These requirements supersede all existing TSB regulations, orders, circulars, and administrative requirements.

3. TSB DIRECTORY INFORMATION

   Available from: Iowa Economic Development Authority
   Targeted Small Business Certification Program
   1963 Bell Ave.
   Suite 200
   Des Moines, IA 50315
   Phone: (515-348-6193)
   Website: https://www.iowaeda.com/small-business/targeted-small-business/

4. THE CONTRACTOR'S TSB POLICY

   The contractor is expected to promote participation of disadvantaged business enterprises as suppliers, manufactures and subcontractors through a continuous, positive, result-oriented program. Therefore, the contractor's TSB policy shall be:

   > It is the policy of this firm that Targeted Small Business (TSB) concerns shall have the maximum practical opportunity to participate in contracts funded with State-assisted funds which are administered by this firm (e.g. suppliers, manufacturers and subcontractors). The purpose of our policy is to encourage and increase the TSB participation in contracting opportunities made available by State-assisted programs.

5. CONTRACTORS SHALL APPOINT AN EQUAL EMPLOYMENT OPPORTUNITY (EEO) OFFICER

   The contractor shall designate a responsible person to serve as TSB officer to fulfill the contractors affirmative action responsibilities. This person shall have the necessary statistics, funding, authority, and responsibility to carry out and enforce the firm's EEO policy. The EEO officer shall be responsible for developing, managing, and implementing the program on a day-to-day basis. The officer shall also:

   A. For current TSB information, contact the Iowa Economic Development Authority (515-348-6193) to identify potential material suppliers, manufacturers, and contractors.

B. Make every reasonable effort to involve TSBs by soliciting quotations from them and incorporating them into the firm's bid.

C. Make every reasonable effort to establish systematic written and verbal contact with those TSBs having the materials or expertise to perform the work to be subcontracted, at least two weeks prior to the time quotations are submitted. Maintain complete records of negotiations efforts.

D. Provide or arrange for assistance to TSBs in seeking bonding, analyzing plans/specifications or other actions that can be viewed as technical assistance.

E. Ensure the scheduled progress payments are made to TSBs as agreed in subcontract agreements.

F. Require all subcontractors and material suppliers to comply with all contract equal opportunity and affirmative action provisions.

6. COUNTING TSBs PARTICIPATION ON A PROJECT

TSBs are to assume actual and contractual responsibilities for provision of materials/supplies, subcontracted work, or other commercially useful function.

A. The bidder may count:

1) Planned expenditures for materials/supplies to be obtained from TSB suppliers and manufacturers; or
2) Work to be subcontracted to a TSB; or
3) Any other commercially useful function.

B. The contractor may count:

1) 100% of an expenditure to a TSB manufacturer that produces/supplies goods manufactured from raw materials.
2) 60% of an expenditure to TSB suppliers that are not manufacturers; provided the suppliers perform a commercially useful function in the supply process.
3) Only those expenditures to TSBs that perform a commercially useful function in the work of a contract, including those as a subcontractor.
4) Work the Contracting Authority has determined that it involves a commercially useful function. The TSB must have a necessary and useful role in the transaction of a kind for which there is a market outside the context of the TSB program. For example, leasing equipment or purchasing materials from prime contractor would not count.

7. REQUIRED DATA, DOCUMENTS AND CONTRACT AWARD PROCEDURES FROM BIDDERS/CONTRACTORS FOR PROJECTS WITH ASSIGNED GOALS

A. Bidders

Bidders who fail to demonstrate reasonable positive efforts may be declared ineligible to be awarded the contract. Bidders shall complete the bidding documents plus a separate form called "TSB Pre-Bid Contact Information". This form includes:

1) Name(s) of the TSB(s) contacted regarding subcontractable items.
2) Date of the contract.
3) Whether or not a TSB bid/quotation was received.
4) Whether or not the TSB's bid/quotation was used.
5) The dollar amount proposed to be subcontracted.

B. Contractors Using Quotes From TSBs

Use those TSBs whose quotes are listed in the "Quotation Used in Bid" column along with a "yes" indicated on the Pre- BID Contract Information Form.

C. Contractors NOT Using Quotes From TSBs

If there are no TSBs listed on the Pre-bid Contact Information Form, then the contractor shall document all efforts made to include TSB participation in this project by documenting the following:

1) What pre-solicitation or pre-bid meetings scheduled by the contracting authority were attended?
2) Which general news circulation, trade associations and/or minority-focused media were advertised concerning the subcontracting opportunities?
3) Were written notices sent to TSBs that TSBs were being solicited and was sufficient time allowed for the TSBs to participate effectively?
4) Were initial solicitations of interested TSBs followed up?
5) Were TSBs provided with adequate information about the plans, specifications, and requirements of the contract?
6) Were interested TSBs negotiated with in good faith? If a TSB was rejected as unqualified, was the decision based on an investigation of their capabilities?
7) Were interested TSBs assisted in obtaining bonding, lines of credit or insurance required by the contractor?
8) Were services used of minority community organization, minority contractors' groups; local State and Federal minority business assistance offices or any other organization providing such assistance.

The above documentation shall remain in the contractor's files for a period of three (3) years after the completion of the project and be available for examination by the Iowa Economic Development Authority.

8. POSITIVE EFFORT DOCUMENTATION WHEN NO GOALS ARE ASSIGNED

Contractors are also required to make positive efforts in utilizing TSBs on all State-assisted projects which are not assigned goals. Form 730007, "TSB Pre-bid Contact Information" is required to be submitted with bids on all projects. If there is no TSB participation, then the contractor shall comply with section 7C of this document prior to the contract award. Form 730007 can be found here: https://iowadot.seamlessdocs.com/f/TargetedSmallBusinessTSBPrebidContactInfo

Form 730007wd
07-97

Contractor _____ Page # _____

Project # _____

County _____

City _____

TARGETED SMALL BUSINESS (TSB) PRE-BID CONTACT INFORMATION

(To Be Completed By All Bidders Per The Current Contract Provision)

In order for your bid to be considered responsive, you are required to provide information on this form showing your Targeted Small Business contacts made with your bid submission. This information is subject to verification and confirmation.

In the event it is determined that the Targeted Small Business goals are not met, then before awarding the contract, the Contracting Authority will make a determination as to whether or not the apparent successful low bidder made good faith efforts to meet the goals.

NOTE: Every effort shall be made to solicit quotes or bids on as many subcontractable items as necessary to achieve the established goals. If a TSB's quote is used in the bid, it is assumed that the firm listed will be used as a subcontractor.

TABLE OF INFORMATION SHOWING BIDDERS PRE-BID
TARGETED SMALL BUSINESS (TSB) CONTACTS

SUBCONTRACTOR	TSB	DATES CONTACTED	QUOTES RECEIVED		QUOTATION USED IN BID	
			YES/NO	DATES CONTACTED	YES/NO	DOLLAR AMT. PROPOSED TO BE SUBCONTRACTED

Total dollar amount proposed to be subcontracted to TSB on this project $ _____
List items by name to be subcontracted:

SHIVEHATTERY
ARCHITECTURE + ENGINEERING

CITY OF BONDURANT
PARKSIDE TRAIL CONNECTION
Final Plans Opinion of Construction Costs
May 17, 2024

#	ITEM DESCRIPTION	UNITS	TOTAL QUANTITY		UNIT COST		TOTAL COST
1	CLEARING AND GRUBBING	LS	1	*	$8,000.00	=	$ 8,000.00
2	TOPSOIL, STRIP, SALVAGE AND SPREAD	CY	1595.0	*	$10.00	=	$ 15,950.00
3	EXCAVATION, CLASS 10	CY	775.0	*	$7.00	=	$ 5,425.00
4	MODIFIED SUBBASE, 6 IN.	SY	1830.0	*	$12.00	=	$ 21,960.00
5	REMOVALS, PER PLAN	LS	1	*	$10,000.00	=	$ 10,000.00
6	STORM SEWER, TRENCHED, DUAL WALL POLYPROPYLENE, 12 IN.	LF	38.0	*	$60.00	=	$ 2,280.00
7	MANHOLE ADJUSTMENT, MINOR	EA	1	*	$4,000.00	=	$ 4,000.00
8	REINFORCED CONCRETE BOX CULVERT, TWIN 10X8	LF	24.0	*	$2,400.00	=	$ 57,600.00
9	REINFORCED CONCRETE BOX CULVERT STRAIGHT END SECTION, TWIN 10X8	EA	2	*	$50,000.00	=	$ 100,000.00
10	GRANULAR MATERIAL FOR WORKING BLANKET	TON	111.0	*	$50.00		$ 5,550.00
11	SPECIAL SUBGRADE PREPARATION FOR SHARED USE PATH	SY	1950.0	*	$5.00	=	$ 9,750.00
12	SHARED USE PATH, PCC, 6 IN.	SY	1100.0	*	$65.00	=	$ 71,500.00
13	SIDEWALK, PCC, 5 IN.	SY	210.0	*	$65.00	=	$ 13,650.00
14	DRIVEWAY, GRANULAR, 6 IN.	TON	4.0	*	$50.00	=	$ 200.00
15	PAVEMENT REMOVAL	SY	20.0	*	$20.00	=	$ 400.00
16	3/8" MINUS CRUSHED LIMESTONE, 5 IN.	TON	14.0	*	$85.00	=	$ 1,190.00
17	TEMPORARY TRAFFIC CONTROL	LS	1	*	$2,500.00	=	$ 2,500.00
18	HYDRAULIC SEEDING, FERTILIZING SUDAS TYPE 1	AC	2.2	*	$2,000.00	=	$ 4,400.00
19	HYDRAULIC SEEDING, FERTILIZING SUDAS TYPE 3	AC	0.3	*	$1,800.00	=	$ 540.00
20	HYDRAULIC SEEDING, FERTILIZING SUDAS TYPE 5	AC	3.1	*	$1,000.00	=	$ 3,100.00
21	HYDRAULIC SEEDING, FERTILIZING CUSTOM POLLINATOR SEED MIX	AC	0.2	*	$3,000.00	=	$ 600.00
22	HYDRAULIC SEEDING, FERTILIZING SUDAS WETLAND GRASS SEED MIX	AC	0.4	*	$1,500.00	=	$ 600.00
23	PLANTS WITH WARRANTY, TREE	EA	30	*	$500.00	=	$ 15,000.00
24	PLANTS WITH WARRANTY, PERENNIALS AND ORNAMENTAL GRASSES PLUG	EA	2567	*	$5.00	=	$ 12,835.00
25	SWPPP PREPARATION	LS	1	*	$1,500.00	=	$ 1,500.00
26	SWPPP MANAGEMENT	LS	1.0	*	$3,000.00	=	$ 3,000.00
27	FILTER SOCK, 9 IN.	LF	900.0	*	$2.50	=	$ 2,250.00
28	FILTER SOCK, REMOVAL	LF	900.0	*	$0.50	=	$ 450.00
29	TEMPORARY RECP, EROSION CONTROL BLANKET	SQ	250.0	*	$12.00	=	$ 3,000.00
30	RIP-RAP, CLASS E	TON	135	*	$70.00	=	$ 9,450.00
31	TEMPORARY SEDIMENT BASIN AND CHECK DAM	LS	1.0	*	$7,500.00	=	$ 7,500.00
32	SILT FENCE OR DITCH CHECK	LF	750.0	*	$2.00	=	$ 1,500.00
33	SILT FENCE OR DITCH CHECK, REMOVAL OF SEDIMENT	LF	750.0	*	$0.50	=	$ 375.00
34	SILT FENCE OR DITCH CHECK, REMOVAL OF DEVICE	LF	750.0	*	$0.50	=	$ 375.00
35	EROSION CONTROL MULCHING, HYDROMULCH	AC	6.2	*	$3,300.00	=	$ 20,460.00
36	HARDWOOD MULCH SURFACING	CY	37.0	*	$75.00	=	$ 2,775.00
37	DECORATIVE STEEL FENCE, 48 IN.	LF	44.0	*	$95.00	=	$ 4,180.00
38	DECORATIVE STEEL FENCE, 60 IN.	LF	82	*	$110.00	=	$ 9,020.00
39	WEST LIMESTONE FISHING JETTY	LS	1	*	$6,000.00	=	$ 6,000.00
40	EAST LIMESTONE FISHING JETTY	LS	1	*	$10,000.00	=	$ 10,000.00
41	CONSTRUCTION SURVEY	LS	1	*	$10,000.00	=	$ 10,000.00
42	MOBILIZATION	LS	1	*	$40,000.00	=	$ 40,000.00
43	CONCRETE WASHOUT	LS	1	*	$1,500.00	=	$ 1,500.00
					Subtotal		**$ 500,365.00**
					10% Construction Contingency		**$ 50,040.00**
					Project Total		**$ 550,405.00**

**TOTAL PROJECT COSTS AND CONSTRUCTION COSTS PROVIDED HEREIN ARE MADE ON THE BASIS OF ENGINEER'S EXPERIENCE AND QUALIFICATIONS AND REPRESENT THE ENGINEER'S BEST JUDGMENT. HOWEVER, THE ENGINEER CANNOT AND DOES NOT GUARANTEE THAT BIDS OR ACTUAL TOTAL PROJECT OR CONSTRUCTION COSTS WILL NOT VARY FROM THE ESTIMATE OF PROBABLE CONSTRUCTION COST. THIS ESTIMATE IS INTENDED TO ASSIST IN BUDGETARY ASSESSMENT AND DOES NOT GUARANTEE THAT ACTUAL PROJECT COSTS WILL NOT EXCEED OR BE LOWER THAN THE AMOUNTS STATED IN THIS ESTIMATE.

BUSINESS OF THE CITY COUNCIL
BONDURANT, IOWA
AGENDA STATEMENT

Item No. 7.b.
For Meeting of 6/17/2024
Public Hearing

TITLE: Public Hearing to consider adoption of the Pavement Management Program

CONTACT PERSON:
Maggie Murray, Planning & Community Development Director

BRIEF HISTORY & ANALYSIS: The Bondurant City Council approved a professional services agreement on July 10, 2023 for HR Green to prepare this Pavement Management Program Plan.

Pavement Management is a program that carries out an important City policy. The policy objective is to improve overall street conditions in an efficient manner that maximizes public benefits. This proactive approach is important for a municipality tasked with maintaining infrastructure for approximately 10,000 residents.

The City of Bondurant has an average road condition score of 78.0, based on estimates from the Iowa Pavement Management Program. This score places the Bondurant pavement network slightly above average condition when compared to similar-sized municipalities in Iowa. This score can easily be attributed to the addition of new paved streets to the network. When looking at trends based on functional classification, the plan shows that most of the street network in Bondurant had been stable or on the decline until 2017-2019 when both arterial and local roads saw significant improvements, likely due to a large influx of new street systems in Bondurant. While Bondurant has many reasons to be proud of its 78.0 pavement condition score, this doesn't mean that there is no work to be done.

This attached plan, prepared by HR Green, includes the following topics/processes:

- Review the City's standards for street pavement design and construction/maintenance practices.
- Develop an inventory of the City's Streets system.
- Evaluate the system's current roadway conditions using data provided by the Iowa Pavement Management Program.
- Determine major rehabilitation and reconstruction alternatives and trigger thresholds for use in the data analysis and projections.

- Create a comprehensive pavement management model using the IPMP data and the Pavement Management Sofetware dTIMS BA.
- Develop a 15-year rehabilitation/reconstruction analysis schedule with annualized costs for various budget and performance-based scenarios to make recommended annual budget and performance recommendations.
- Develop a 10-year capital improvement plan based on the agreed upon recommendations.

The findings of this Pavement Management Program Plan process include the following:

- Maintain a Hybrid CityPCI goal of 70 for Local Streets and 75 for Collectors and Arterials.
- Clearly establish a dedicated budget for Pavement Management activities.
- Steadily increase average annual spending on roadway improvements to approximately $1.2 million per year.
- Maintain an ideal Rehabilitation budget share of about 80%, Reconstruction budget share of around 10%, and Restoration share of at least 10%.
- Implement the 10-year capital Improvement Plan included as part of the Pavement Management Program Plan.

Included as an attachment to this agenda statement is also HR Green's PCC Pavement Design Standards Review and Recommendations Report. This report was created in conjunction with this Pavement Management Program process and will be utilized when the City adopts the recommendations provided in the report as a formal policy and/or ordinance.

The purpose of this item is to hold a public hearing on the pavement management program plan.

FUNDING SOURCE: NA

STAFF RECOMMENDATION: Hold public hearing.

APPROVED FOR SUBMITTAL:

ATTACHMENTS:
1. Bondurant PMP
2. Bondurant PMP Design Standards

City of Bondurant

Pavement Management Program

FY 2026-2035

Bondurant

HRGreen®

Building Communities. Improving Lives.

ACKNOWLEDGEMENTS

MAYOR

Doug Elrod, Mayor

CITY COUNCIL

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Tara Cox, Council Member

Angela McKenzie, Council Member

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Caleb Jansen, EIT, Engineer

Holly Manternach, PE, Engineer

IOWA PAVEMENT MANAGEMENT PROGRAM

Inya Nlenanya, PhD; Technical Support and Data Delivery

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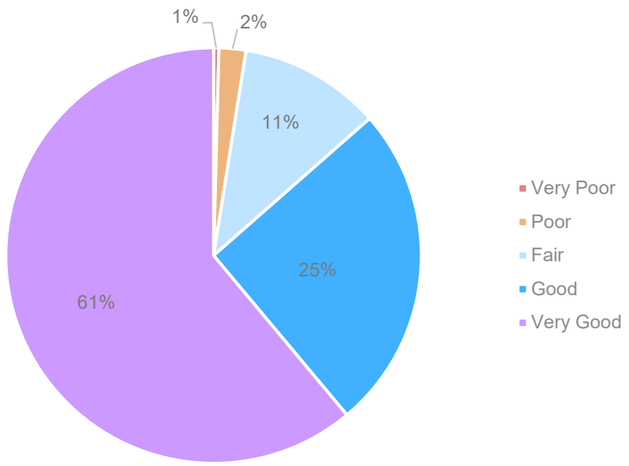
EXECUTIVE SUMMARY

The City of Bondurant is a city of approximately 8,035 residents located in Polk County, Iowa. Part of the Des Moines metropolitan area, the city currently maintains approximately 50 miles of paved roads.

The City of Bondurant has an average condition rating of **78.0**, based on estimates from the Iowa Pavement Management Program's (IPMP) condition assessment. This score places the Bondurant pavement network slightly above average condition when compared to similar sized municipalities in Iowa. It is a desire to ensure streets are maintained efficiently and effectively that led Bondurant to contract with **HR Green, Inc.** to improve their pavement management program.

Pavement management is a *program* that carries out an important City *policy*. The policy objective is to maintain overall street conditions in an efficient manner that maximizes public benefits. This proactive approach is important for municipalities with a growing pavement network such as Bondurant.

2021 PCI (Pavement Condition Index) Distribution



The goals of this pavement management program are to:

- Review the City's standards for street pavement design and construction/maintenance practices
- Develop an inventory of the City's Street system
- Evaluate the system's current roadway conditions using data provided by the Iowa Pavement Management Program (IPMP)
- Determine major rehabilitation and reconstruction alternatives and trigger thresholds for use in the data analysis and projections.
- Create a comprehensive pavement management model using the IPMP data and the Pavement Management Software dTIMS BA™
- Develop 15-Year rehabilitation/reconstruction analysis schedules with annualized costs for various budget and performance-based scenarios to make recommended annual budget and performance recommendations
- Develop a 10-year capital improvement plan based on the agreed upon recommendations

The City's current pavement rehabilitation treatment alternatives and project determination process were reviewed. A set of preferred treatment alternatives and appropriate selection criteria were developed to create a toolbox of potential treatments available for the city to use.

Pavement Condition Data has been collected statewide for all public roads in Iowa since 2013. This is done through the **Iowa Pavement Management Program**, which is funded by the Iowa Department of Transportation and is operated by the Institute for Transportation at Iowa State University. The data collection consultant for the IPMP uses a specialized van outfitted with an array of sensors and drives every paved road in the state to collect information about the pavement distresses visible on the surface. Prior to 2020, this data was collected every two years, but beginning in 2020, collections were reduced to once every four years, with the option given to municipalities to opt in to every two year collections.

The most recent data collection for Bondurant was in 2021 and was very useful for assessing conditions in Bondurant and developing a comprehensive inventory in GIS. Pavement distresses were collected for each roadway segment, which was used compute a City Pavement Condition Index (CityPCI) score. This index assigns each road segment a score from 1-100 based on observed distresses.

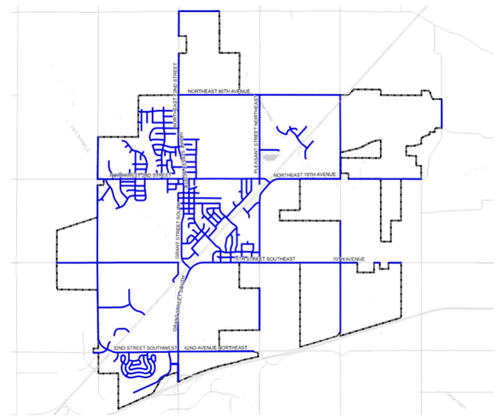
Based on the 2021 CityPCI results, Bondurant has an **average score of 78.0/100**, which places the average road at the top end of the "Good" category. For Bondurant, most of the poorer-conditioned streets appear to be concentrated to primarily local streets, as these make up the vast majority of the city's roads.

Using the IPMP data, existing City resources, and input from City staff, a pavement management model was created using the **dTIMS Business Analytics™ software**. This model was then used to analyze various funding and performance-based scenarios for the Bondurant capital improvement program. The findings of the investigation determined the following target performance metrics:

- Maintain a Hybrid CityPCI goal of 70 for Local Streets and 75 for Collectors and Arterials.
- Clearly establish a dedicated budget for Pavement Management activities
- Steadily Increase average annual spending on roadway improvements to approximately $1.2 million per year.
- Maintain an ideal Rehabilitation budget share of about 80%, Reconstruction budget share of around 10%, and Restoration share of at least 10%.
- Finally, the results of the scenario modeling exploration were incorporated into the pavement management model which was used to generate an objective 10-Year Capital Improvement Plan (CIP). The project list is optimized for the most effective use of available funds, based on the pavement condition data. The complete list of recommended projects and maps can be found in **the Appendix A:** Capital Improvement plan on **page 35**

These lists and maps will serve as a useful tool to assist City staff during the project planning process, but they do not replace engineering judgement. Project types may change from what is in the CIP, and projects will likely move between phases or leave the plan for various reasons, such as changes including field conditions not captured by the IPMP data or required utility improvements.

This document is not the end of the Pavement Management Program, however. Not only do the projects need to be constructed, but this should be considered a **"Living Document"** because it needs to shift and change with the conditions of the streets as well as the needs of its citizens. The City has the option to receive new IPMP data every 2 years, which provides a regular opportunity for renewing the pavement management model and adjusting the plan based on new information.



BACKGROUND

The City of Bondurant, located in Polk County, Iowa, maintains a roadway network consisting of just over 50 centerline miles of streets and is a part of the Des Moines metro area, the largest metropolitan area in the state.

A limited streets program budget, primarily funded through Road Use Tax funds, requires city staff and elected officials to make difficult decisions when determining annual maintenance and reconstruction expenditures. There is not a fixed annual budget for roadway improvements in Bondurant, though over the past 5 years the city has historically spent between $200,000 and $300,000. Other funds, in the form of grants, TIF Funds or special bonds may also be used for large construction projects on an as needed basis.

Until now, the City's framework for determining which streets to repair has been normally governed by the professional judgement of City staff. Staff knowledge is critical to identifying projects and determining the appropriate treatments, but, at a systematic planning level, there are better techniques and powerful software tools to help optimize the process.

INTRODUCTION

The City contracted HR Green, Inc. (HRG) to complete a Pavement Management Plan. This project will help the City develop an objective, data driven, and sustainable approach to managing its roadway assets as well as to budget for future needs. HRG's effort involved the following actions:

- Review the City's standards for street pavement design and construction/maintenance practices
- Develop an inventory of the City's street system
- Evaluate the system's current roadway conditions using data provided by the Iowa Pavement Management Program (IPMP)
- Determine major rehabilitation and reconstruction alternatives and trigger thresholds for use in the data analysis and projections.
- Create a comprehensive pavement management model using the IPMP data and the Pavement Management Software dTIMS BA™
- Develop 15-Year rehabilitation/ reconstruction analysis schedules with annualized costs for various budget and performance-based scenarios to make recommended annual budget and performance recommendations
- Develop a 10-year capital improvement plan based on the agreed upon recommendations

Data evaluation was restricted to the previous 10 years based on the typical duration of the City's Capital Improvement Program (CIP), as well as data availability from IPMP, which began providing statewide coverage in 2013.

WHAT IS PAVEMENT MANAGEMENT?

Pavement Management is a *program* that carries out an important City *policy*. The policy objective is to improve overall street conditions in an efficient manner that maximizes public benefits. This proactive approach is important for a municipality tasked with maintaining roadway infrastructure for approximately 8,000 residents.

Using Pavement Management methodology, HR Green developed recommendations using the right pavement treatment, at the right time, on the right road. Large amounts of pavement condition data were collected and analyzed with complex computer models (further described in **Methodology Section**) to determine the best use of funds to maintain the overall condition of the City's road network. This report is the culmination of those efforts and includes a 10-year plan of recommended projects based on optimal annual expenditures on maintenance, rehabilitation, and reconstruction of public streets.

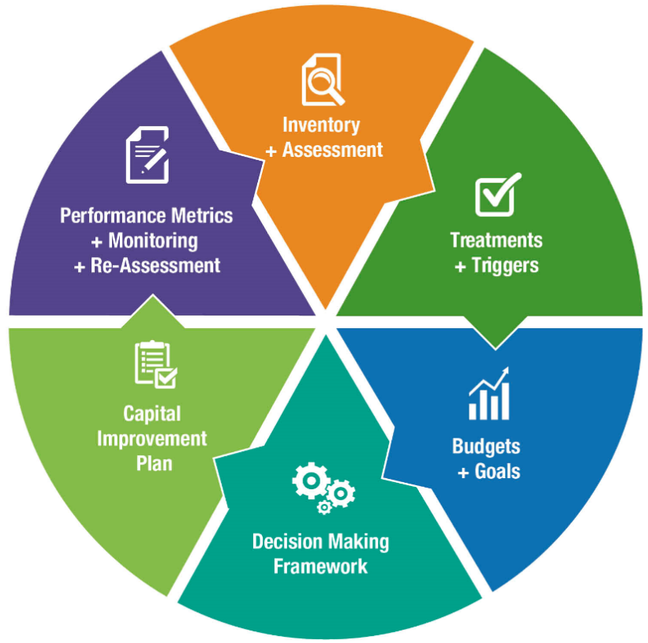


FIGURE 1: PRIMARY COMPONENTS OF PAVEMENT MANAGEMENT

The diagram above illustrates the six primary components of pavement management. Details of the components can be found in the methodology section

PAVEMENT LIFE CYCLES

Pavement management techniques are important as pavements do not decay at a constant rate over time. Time is a crucial factor in how much investment it takes to repair a road back to a serviceable condition. New pavement will not change drastically over the early years of its life; however, sharp declines can occur quickly with older pavements. Without intervention, pavements will eventually reach a failing status.

Small investments at appropriately-designated times can drastically improve and extend pavement life. Rehabilitating a pavement in “Fair” condition, for example, will usually cost less than 25% of reconstructing a failing pavement while extending pavement life significantly. As a result, it is important to invest wisely and early. This plan sets the City of Bondurant on a course towards this practice.

Before an ideally-maintained roadway network can be addressed, however, many of the worst roadways will require reconstruction or rehabilitation. Pavements within the “Poor” condition category will, in most cases, be deferred or given light maintenance with the intent of reconstructing before reaching “Very Poor” condition. This effectively saves money and squeezes the most life out of the network while still giving the opportunity to practice ideal Pavement Management elsewhere in the community.

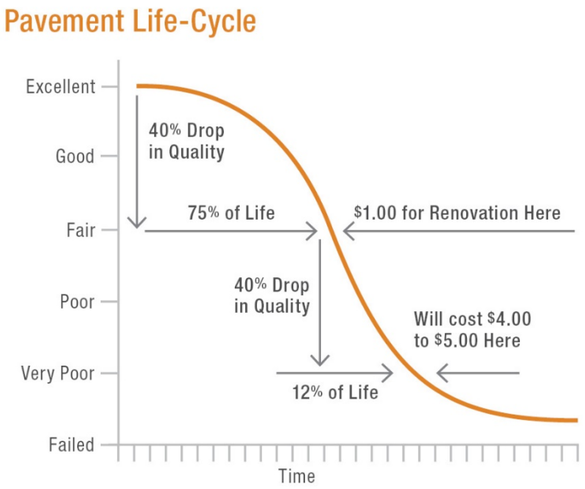


FIGURE 2:PERFORMANCE CURVE

Renovating a pavement in “Fair” condition will usually cost less than 25% of reconstructing a failing pavement.

METHODOLOGY

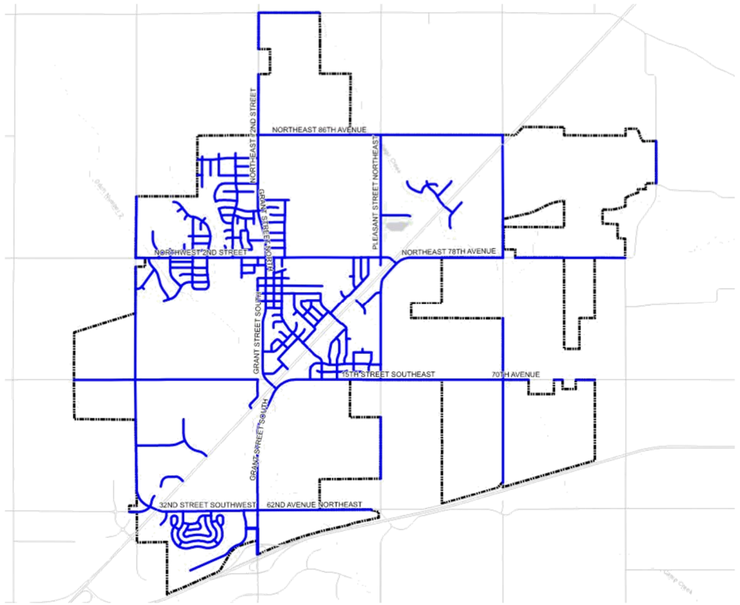
DATA COLLECTION

BASE INVENTORY

The first step in any Pavement Management Program is to develop an accurate inventory of streets. HR Green collected detailed GIS information and various historical reference material outlining its current network.

The majority of this baseline inventory data came from the Iowa DOT's Roadway Asset Management System (RAMS). This database resource was substantially complete and offered a reasonable level of detail for creating this program.

Some spatial manipulation and data filtering was required to make better use of the base files for modelling purposes. This included eliminating or combining short segments, ensuring accurate intersection contiguity, and developing a linear reference model.


NORTHEAST 86TH AVENUE
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NORTHEAST 2ND STREET
NORTHEAST 3RD STREET
NORTHEAST 4TH STREET
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CLEARY ROAD
CLEASANT STREET NORTHEAST
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EXAMPLE PAVEMENT DISTRESSES

FIGURE 5: EXAMPLE OF ALLIGATOR CRACKING (ASTM)

This image is from the ASTM D6433 "Standard Practice for Roads and Parking Lots Pavement Condition Index Surveys." Alligator Cracks are when pavement breaks into a "scaly" pattern typically caused by fatigue, either from repeated heavy loads, lack of sufficient subgrade support, or weakened material due to drainage issues.

FIGURE 6: EXAMPLE OF BLOCK CRACKING (ASTM)

This image is from the ASTM D6433 "Standard Practice for Roads and Parking Lots Pavement Condition Index Surveys." Block cracks are when pavement breaks into "chunks" or "blocks" that are roughly rectangular, caused by internal stress from temperature or lack of lateral support.

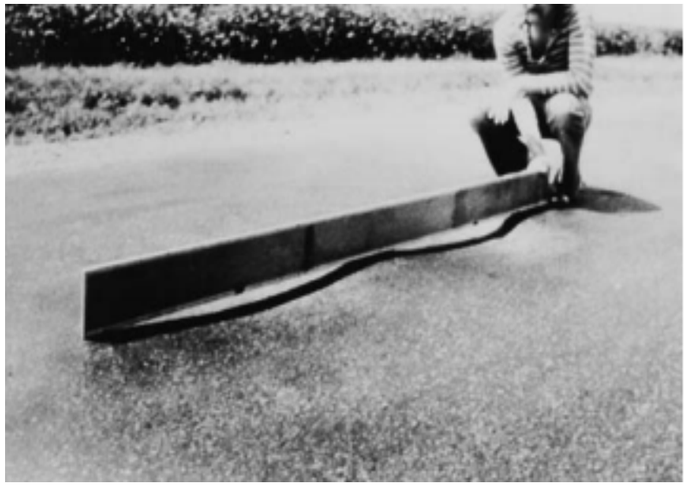


FIGURE 7: EXAMPLE OF DISTORTION (ASTM)

This image is from the ASTM D6433 "Standard Practice for Roads and Parking Lots Pavement Condition Index Surveys." Distortions are when the pavement warps its shape without much cracking. Typically caused by shifting or displaced underlying material.

FIGURE 8: EXAMPLE OF TRANSVERSE CRACK (ASTM)

This image is from the ASTM D6433 "Standard Practice for Roads and Parking Lots Pavement Condition Index Surveys." A common distress caused by a wide variety of issues.

FIGURE 9: EXAMPLE OF PATCHING (ASTM)

This image is from the ASTM D6433 "Standard Practice for Roads and Parking Lots Pavement Condition Index Surveys." Patching is the result of corrective actions already taken and is indicative of underlying issues as well as a common point of failure.

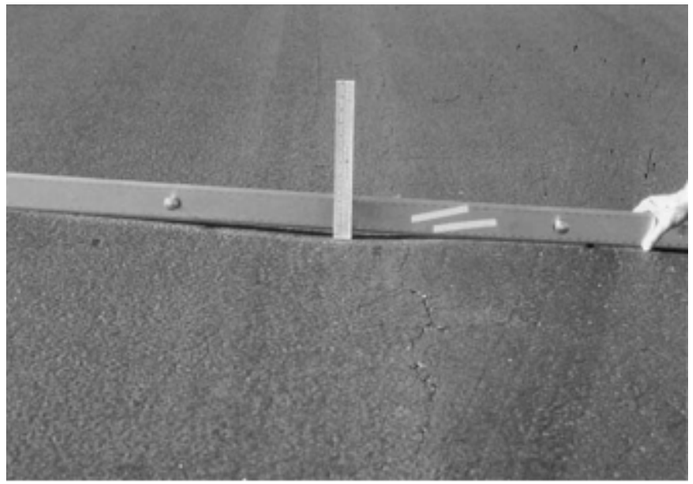


FIGURE 10: EXAMPLE OF RUTTING (ASTM)

This image is from the ASTM D6433 "Standard Practice for Roads and Parking Lots Pavement Condition Index Surveys." Rutting is a depression along the wheel-path caused by traffic loads.

CONDITION THRESHOLDS

The Pavement Condition Index (CityPCI) used in this plan helps differentiate and prioritize between individual streets, but due to the sampling methodology used by the data collection vendor **it should not be interpreted as a 100% accurate,** infallible rating. The difference between a 52/100 rating and a 55/100 could be only a few cracks. Since the data collection vehicle typically only drives one side of the street it may occasionally miss a few distresses near the middle, or the other side could be in slightly better/worse condition. A difference of a few points one way or the other should not be interpreted as a definitive ruling on one street being better than the other. **Changes in PCI less than 10 points are, in most cases, imperceptible to the naked eye.**

Instead of using CityPCI literally, condition categories were assigned to each street based on where the value fell on the 0 to 100 scale. For example, pavements with CityPCI ratings below 20 are considered to be “Very Poor” while those above 80 would be “Very Good.” This was done to help with understanding and assessment of the ratings, as well as to allow them to be used in a practical sense

FIGURE 11: CONDITION THRESHOLDS

This chart shows the proposed relationship between CityPCI, and the condition categories used in this plan.

FIGURE 12: EXAMPLE OF “VERY GOOD” CONDITION (PCC) – ALEXANDER DR.

This picture of Alexander Drive was rated a very high PCI of 90 /100 because it demonstrates no visible pavement distresses.

FIGURE 13: EXAMPLE OF “VERY GOOD” CONDITION (PCC) – EVERGREEN DR.

This image of Evergreen Dr shows an example of a “Very Good” PCC pavement, and it was rated as a perfect 100/100.

A score of 80/100 or greater is considered “Very Good.” Roads with pavement in “Very Good” condition exhibit very few surface distresses, if any, and those that are apparent will be very low in severity. Most often, these pavements will be relatively new. The average age of “Very Good” pavements in Bondurant is likely less than 15 years, meaning they were either recently constructed or rehabilitated with an overlay in the past few years. As such, it is not feasible to expect every street in a city to be “Very Good” because it would be prohibitively expensive to resurface every street in only 15 years’ time.

Pavements with CityPCI scores between 61 and 80 are considered to be in “Good” condition. The distresses on these streets are more noticeable but do not cause much concern because they are minor and infrequent. Most drivers will not even notice the few cracks and distortions. Regular maintenance activities like crack sealing can help prevent the spread of these deficiencies and preserve these pavements for quite some time for low costs. The average Bondurant streets would be classified in this category.

FIGURE 14: EXAMPLE OF “GOOD” CONDITION (HMA) – 2ND STREET SE

This picture of 2nd St between Blaine St and Deer Ridge Dr was rated as 66/100, which would be considered Good for an HMA pavement. Small transverse cracking and rutting is noticeable on this pavement.

FIGURE 15: EXAMPLE OF “GOOD” CONDITION (PCC) – 5TH STREET SE

This image shows an example of a PCC pavement in “Good” condition. 5th St SE was rated as 73/100, because some roughness and minor cracking.

“Fair” streets (CityPCI 41-60) have quite noticeable distresses. Either many low severity distresses, or a few high severity distresses. These will still not impact drivers very much, however.

FIGURE 16: EXAMPLE OF “FAIR” CONDITION (PCC) –ALPHA STREET

This image of Alphas St is an example of PCC pavement in “Fair” condition, with a PCI of 59/100. There are very noticeable distresses but only on a handful of panels.

FIGURE 17: EXAMPLE OF "FAIR" CONDITION (ACC) – 2ND STREET

This picture of 2nd St near Snyder St is an example of an ACC pavement that was rated as 45/100 which would be considered "Fair." It has some transverse and alligator cracking.

At this point in a pavement's life, it is about 75% of the way through its expected serviceability. It will begin deteriorating much more quickly and fall into "Poor" (21-40) or "Very Poor" (1-20) in only a few years, if neglected. However, because the distresses on "Fair" streets are still minor, this is often the ideal time to Rehabilitate them affordably. On the other hand, pavements that deteriorate further, into the "Poor" and "Very Poor" categories, will likely require Reconstruction, which is very costly.

FIGURE 18: EXAMPLE OF "POOR" CONDITION (PCC) – 4TH STREET NE

This image shows a PCC street whose pavement is rated as 33/100. 4th St is considered to be in "Poor" condition due to rideability issues caused by settlement and cracking.

FIGURE 19: EXAMPLE OF "POOR" CONDITION (PCC) – 11TH STREET SE

This image shows a PCC street whose pavement is rated 25/100 and considered "Poor" due to a large number of failures and cracking.

FIGURE 20: EXAMPLE OF "VERY POOR" CONDITION (PCC) – BRICK STREET SE

This image is an example of a PCC pavement in "Very Poor" condition. Brick Street SE is considered one of the worst condition roads in the system due to widespread joint failure and many cracked panels.

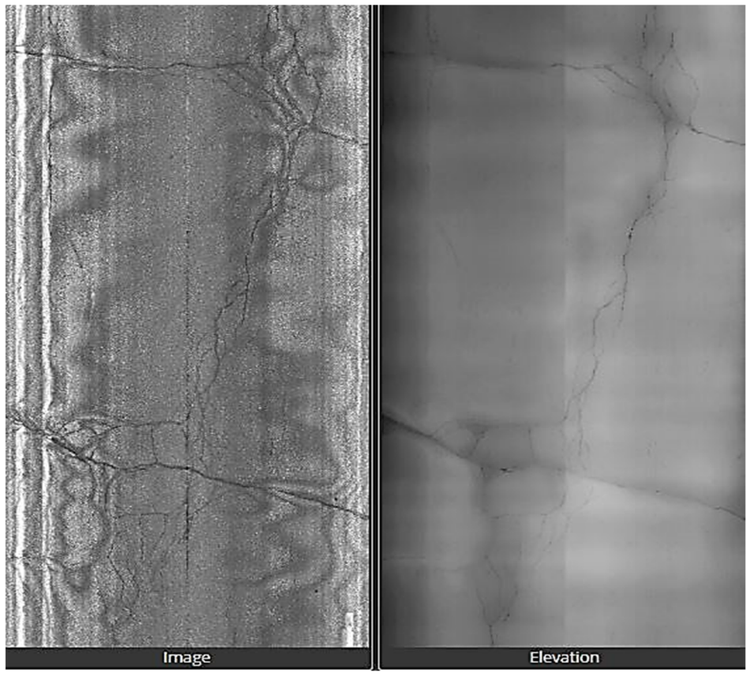


FIGURE 21: ROADWAY IMAGERY OF A "FAIR" ACC PAVEMENT

THIS IMAGERY IS FROM THE SECTION OF 2ND STREET SHOWN. THESE WERE CAPTURED BY THE DATA COLLECTION VEHICLE'S DOWNWARD FACING CAMERA (LEFT) AND LIDAR ARRAY (RIGHT). THESE ARE ONE OF THE KEY RESOURCES USED IN EVALUATING PAVEMENT CONDITION.

FIGURE 22: EXAMPLE OF "VERY POOR" CONDITION (PCC) – 10TH STREET SE

This image shows a PCC street whose pavement is rated as 11/100 and considered to be in "Very Poor" condition. 10th St east of Lincoln Ct has point failures and significant cracking.

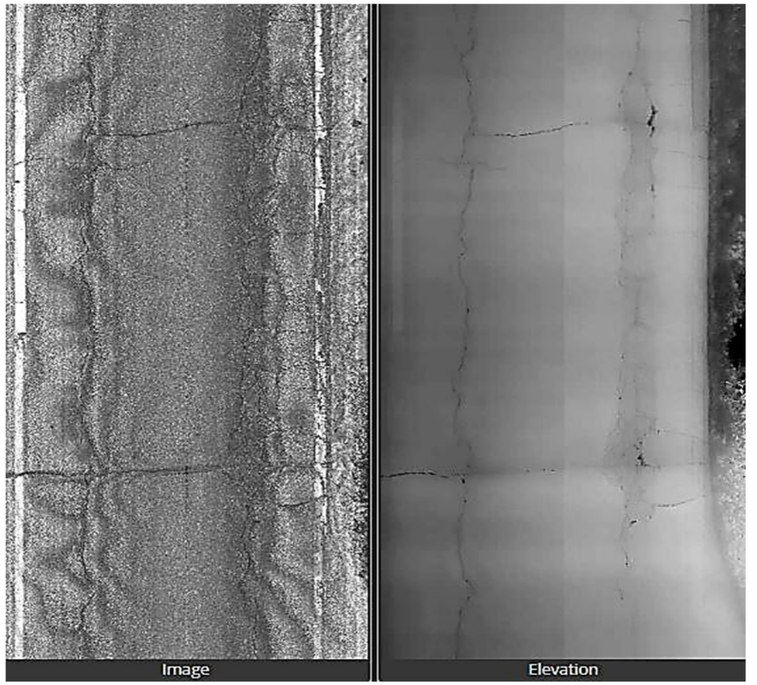


FIGURE 23: ROADWAY IMAGERY OF A "FAIR" ACC PAVEMENT

This imagery is from the section of 2nd Street. These were captured by the data collection vehicle's downward facing camera (left) and LIDAR array (right). These are one of the key resources used in evaluating pavement condition

DTIMS BUSINESS ANALYTICS (PMS)

A Pavement Management Software (PMS) is a decision-making tool that assists a city in making cost-effective decisions related to the maintenance and rehabilitation of roadway pavements. It provides a process or system for rating pavement condition, establishing a consistent maintenance and repair schedule, and evaluating the effectiveness of maintenance treatment strategies.

The PMS used by the City of Bondurant is called “Deighton Total Infrastructure Management System: Business Analytics” or dTIMS BA. This software was developed by Deighton Limited as an asset management software capable of storing all sorts of physical infrastructure assets and specializes in how it uses heuristic algorithms to optimize spending patterns. For the purpose of this analysis, dTIMS BA utilized the Federal classification of pavement for consistency.

Each road is separated into pavement management sections, typically broken up by city block or by other physical features like bridges and railroads. Segments are associated to the road, as a whole, using a “Linear Reference System” where each segment would appear in sequence based on its distance from the start of the road. The pavement distress data, including the CityPCI ratings, are then imported into the web-based software and were used to develop a customized pavement management model for the City of Bondurant

The dTIMS BA model is a collection of the raw distress data, equations, variables, and rules for treatment applications as well as their effects. Some of the most important equations used are the performance curves which dictate the behavior of pavements over time.

PERFORMANCE CURVES

Different types of pavements behave differently, and different classes of road have different stressors. To accommodate these factors, a pavement life cycle curve was developed for asphalt and concrete pavement types. separated further by the type of road, either Arterial, Collector, or Local/Residential.

These curves were calibrated to follow the general assumption that a pavement reaches “Fair” condition at 75% of its design life and “Very Poor” condition at the end of its design life. These curves do not necessarily represent the traditional design life-cycle curve; instead, they address the performance of the pavement and how much longer we can realistically expect it to last without having to determine the structural characteristics and history for every street in the City.

Each pavement management section has an effective “performance age” that determines its behavior. This performance age is determined based on previous data collections. Using that data, a rate of deterioration can be determined for each street individually and then fit to the appropriate family curve. The CityPCI rating is then projected along the curve and tested to see if various treatments would be appropriate at each point along the individual performance curve.

Other curves were similarly created for specific distresses, such as Alligator Cracking, Spalling/D-Cracking, and Rutting. These distresses progress in predictable ways and occasionally preclude certain types of treatments from being applied. For example, a street with severe rutting (> 0.5”) would not be a good candidate for a slurry seal or thin overlay. Conversely, if these distresses progress past a certain allowable threshold, more expensive treatments, like reconstruction, will be selected as the only reasonable option even if the CityPCI would not necessarily indicate that on its own.

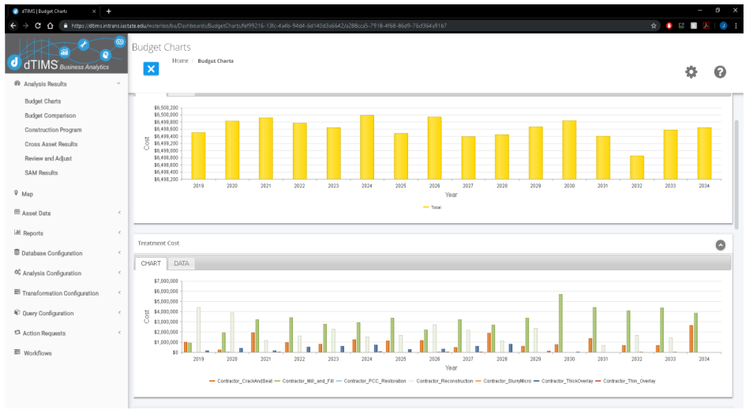
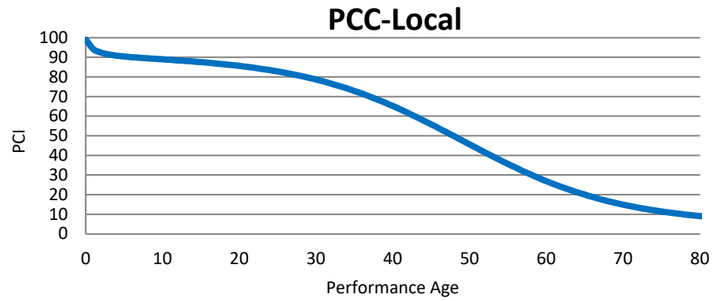
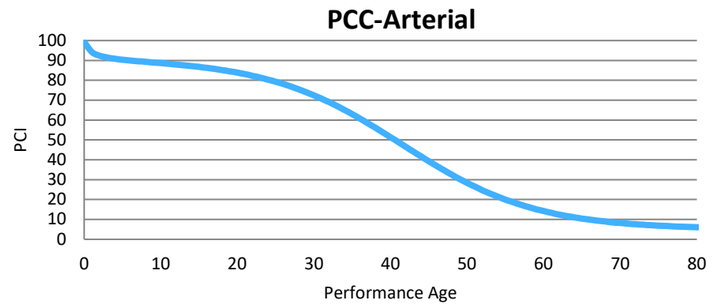
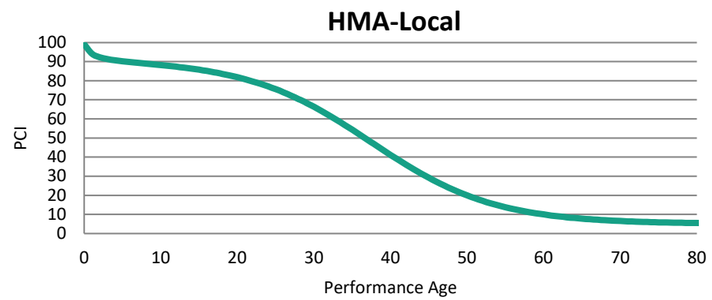


FIGURE 24: DTIMS BA INTERFACE

The dTIMS BA software is accessed through normal computer browsers and operates over cloud-based technology. Calculations are performed on remote servers, meaning any computer can use it, regardless of hardware capabilities!







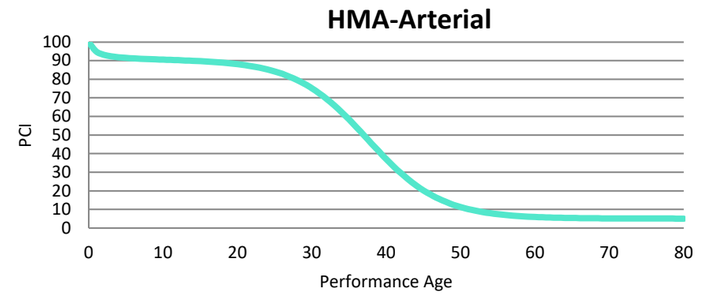


FIGURE 25: PAVEMENT PERFORMANCE CURVES

These 4 curves are the pavement performance curves utilized in the Bondurant dTIMS BA model.

TREATMENT ALTERNATIVES

> **"The success of a pavement-preservation program is based on selecting the right treatment for the right pavement at the right time" (FHWA).**

A single pavement treatment, when properly applied, can extend the life of a roadway by as much 15 years. Before a decision on when and where a treatment can be applied, an agency must know what treatments it will consider. Dozens of potential products and techniques are available; however, not all treatment options are feasible, affordable, or effective. Climate, cost, and capability considerations must be made ahead of time.

The group of treatments available for a given municipality can be thought of as a "toolbox" filled with options appropriate for the tasks they would expect to encounter. The toolbox recommended for the City of Bondurant consists of three primary types of treatments often referred to as the 3 R's of Pavement Management: **Reconstruction, Rehabilitation, and Restoration.**

Every pavement will eventually deteriorate to a point that it cannot effectively be repaired in an economical fashion, leaving reconstruction as the only viable option. Reconstructing a road from the base up is always an appropriate and effective treatment, but it is also typically the most expensive solution. As such, rehabilitation fills an important role in a pavement's life-cycle.

Rehabilitation treatments usually cost significantly less than full reconstruction and can extend a pavement's life substantially. Rehabilitation treatments in this section are split into major and minor variations. The former provides structural improvements to help a deteriorated pavement recover, whereas the latter provide relatively smaller improvements and are typically more preventative in nature.

Restoration treatments, sometimes referred to as "preservation" or "maintenance", are those applied regularly to prevent issues from developing or to prevent existing problems from spreading.

Construction standards and specifications for the following treatment alternatives should follow the Iowa **Statewide Urban Design and Specification (SUDAS)** manual, where applicable. These research-backed approaches to construction and pavement management techniques will extend pavement life beyond traditional methods. Often costing more, the increased performance life still makes it the cost-efficient and sustainable approach, long-term.

RECONSTRUCTION

Reconstruction of pavements is often the only way to save a deteriorated roadway. Unfortunately, these needs usually outstrip available funding. This treatment type should be reserved for pavements that cannot be salvaged through rehabilitation or on high-profile corridors where safety and capacity needs are paramount.

When reconstructing a pavement, the City can use any material they wish. Most commonly for Bondurant, Full-depth PCC is used. However, full-depth HMA may be considered when design constraints warrant. To provide for this option the City may want to consider using "bid-alternates," where contractors can bid based on the equivalent design of their choice.

FIGURE 26: RECONSTRUCTION OF I-94 (NDDOT)

This photo shows the Construction of a brand-new asphalt cement concrete pavement

FIGURE 27: RECONSTRUCTION OF DIVISION STREET

This photo shows a road during a PCC reconstruction project located in Swisher, IA.

MAJOR REHABILITATION

- Thick Overlay
- Mill and Overlay
- Overlay with Crack and Seat
- Major PCC Restoration

There are few substitutes for adding new concrete on top of old to help keep it functioning and healthy. HMA is the most commonly applied material (black-topping), but PCC (white-topping) is gaining acceptance in Iowa and is being applied in many locations as appropriate. HR Green recommends the use of HMA by default but also encourages the exploration of white-topping as a secondary option, where conditions allow and costs are comparable.

Major rehabilitations suggested herein are all variants of overlays where moderately-thick layers of HMA are placed upon existing pavements, sometimes with special preparations. **"Thick Overlays"** requiring a minimum of 3 inches of HMA is preferable for each treatment as any less will not provide significant structural benefit. However, amounts greater than 3 inches can become costly and sometimes may cause logistical difficulties. Overly thick HMA overlays can affect side street elevations, drainage patterns, driveways, and fill up curbs leaving little remaining to control storm water and delineate the edge of the roadway. A thick overlay is the most common rehab used in most agencies and, for the purposes of this report, is recommended to be placed near the end of a pavement's life.

FIGURE 28: HMA OVERLAY PLACED ON MILLED PAVEMENT (FAMARTIN)

This is a picture of an asphalt overlay placed on I-80 after part of the original pavement was milled off.

For full-depth HMA pavement, or one overlaid previously, milling off 2-3 inches of the top can provide significant benefits. It can help smooth the underlying pavement for the final surface, remove harmful defects, help create a more stable bond between pavements, and prevent the overlay from causing the referenced logistical difficulties with side streets, drainage, driveways, and curbs. **"Mill and Overlay"** treatments are a very useful tool that can help extend the life of a pavement. This is a common treatment for streets in Bondurant and will be play an important role in pavement rehabilitation moving forward.

Another major rehab treatment to consider on fairly stable and older PCC roads is called an **"Overlay with Crack and Seat."** This treatment uses the existing PCC roadway as a suitable base for what is effectively a new HMA pavement on top of it. The existing PCC is cracked using a drop-hammer apparatus, or other devices, to create a flexible base of concrete before placing 3 or more inches of HMA on top of it. This process may require the reconstruction of curbs if the depth of asphalt to be placed would be problematic; however, a milled edge notch may be utilized in some cases to eliminate the need for curb replacement. The new crack and seat pavement is typically a long-lived rehabilitation treatment as it is effectively a new road altogether.

FIGURE 29: PCC RESTORATION (CITY OF CEDAR RAPIDS)
This is a picture of a city maintenance crew in Cedar Rapids performing a panel replacement as part of a larger concrete restoration project.

The final major rehabilitation treatment recommended is **Major PCC Restoration.** This treatment is a holistic repair to a PCC pavement street, including any or all of the following actions: panel replacement, profiling, repairing utility cuts, full depth patching, and joint repair. PCC Restoration is more than simply pavement patching, it is strategic repair to existing deficiencies and can help save an otherwise stable road. A typical application removes and replaces around 20% of the existing pavement, to address specific localized issues. This type of repair could be performed by either city forces or outside contractors.

MINOR REHABILITATION

- Thin Overlay
- Minor PCC Restoration

Minor Rehabilitations fill a different role than Major Rehabilitations. They usually are placed to prevent moisture and seasonal weather effects like rain and heat from causing too much damage. These treatments typically provide a new "wearing surface" for vehicles to drive on instead of repairing the underlying pavement.

Thin Overlays are essentially the same treatment as a Thick Overlay; except they are 1-2 inches of HMA, instead of 3+ inches used for Thick Overlays. 1 ½ inches is the recommended thickness for Thin Overlay because, if it was thinner, it may be susceptible to cracking or rutting very quickly due to vehicle loads. Thin Overlays are also not appropriate on roadways with significant deformities (such as severe rutting) or structural distresses (such as severe alligator cracking or warping). It is also common to see the use of recycled asphalt and rubber materials in Thin Overlays which can reduce costs and possibly increase durability.

The other minor rehabilitation treatment recommended is **Minor PCC Restoration.** This treatment is essentially the same as Major PCC Restoration, which includes actions such as panel replacement, full depth patching, and joint repair. However, minor PCC Restoration only replaces around 10% of the existing pavement, which means it should only be used on PCC streets with limited distresses. This makes it a cheaper alternative to Major PCC restoration.

FIGURE 30: CRACK SEALING PERFORMED W/ ROUTING (USAF/KENNA JACKSON)
This is an example of crack sealing being performed with special preparation in the form of using a router to clean up the crack profile, as being performed by 35th Civil Engineer Squadron.

PRESERVATION

- Crack Sealing
- Diamond Grinding
- Microsurfacing
- Pavement Patching

Restoration treatments use simple techniques to seal defects from moisture infiltration and prevent them from spreading. Some of these treatments can also give streets a new wearing surface but provide no structural changes to the pavement. **Crack Sealing**, for example, is a standard maintenance practice, recommended to be performed by city forces every 3-5 years on a road. This treatment plays an important role in extending the life of pavements in good condition by preventing damage that could be caused by water over time.

> **Crack Sealing in a timely manner, and on a regular basis, is the most important tool in any pavement management program because will keep a pavement in good or fair condition much longer than it would without attention.**

Diamond Grinding is not a commonly applicable treatment, but due to its low cost should be considered when the conditions are appropriate. Diamond Grinding is best used when a weathered pavement is beginning to show signs of aggregate polishing to add texture back to it for cars, or when settling or warping caused minor faulting. Diamond Grinding can smooth those faults and leave an otherwise stable pavement intact with its ride significantly improved. It would not, however, be appropriate for pavements with substantial cracking or signs of structural deficiencies such as severe alligator cracking, spalling, or D-cracking.

FIGURE 31: PAVEMENT AFTER DIAMOND GRINDING (JOHN ROBERTS).
This picture shows the texture of PCC pavement after diamond grinding was used on it. The image was taken on a project near Chicago, Illinois.

Microsurfacing consists of a thin application like a slurry seal but uses a polymerized binder with finer aggregate. It can smooth over minor deformities while still adding a small amount of structural durability. It also creates a seal against water and wear. It is a versatile and relatively cheap treatment that can address a wide variety of distresses. A relatively new technique, it is not very common in the state of Iowa, yet. However, a few other larger municipalities in Iowa such as the City of Des Moines has recently invested heavily into this treatment method and begun incorporating it into their regular pavement management practices.

FIGURE 32: MICROSURFACING CREW AT WORK. (ERIC PULLEY).
This picture shows a crew using a Microsurfacing machine to lay a new surface on this street.

Pavement Patching is different from some of the other preservation treatments in that it is typically done by city forces after a pavement distress has already deteriorated to the point of becoming a more substantial issue. Patching is typically done with HMA, sometimes with partial removal of the area around the defect or distress. Patching is not intended to serve as a long-term fix, but serves mostly as a way to maintain service, and act as a stopgap until a more appropriate rehabilitation treatment can be applied.

FIGURE 33: HMA PATCHING WITH LOCALIZED PAVEMENT REMOVAL (KOMU)
This is an example of an asphalt patch applied with appropriate localized removals and some base repair.

PREFERRED TREATMENT ALTERNATIVES

TABLE 1: PRIMARY CAPABILITIES & FUNCTIONS OF HMA PAVEMENT PRESERVATION TREATMENTS

Source: Adapted from Johnson, Best Practices Handbook on Asphalt Pavement Maintenance, 2000.

Treatment	Reasons for Use						
	Friction	Raveling	Rutting	Potholes	Cracking		
					Low	Med	High
Crack Treatments							
Crack Repair with Sealing							
Clean and Seal					X	X	
Saw and Seal							
Rout and Seal					X	X	
Crack Filling						X	X
Full Depth Crack Repair							X
Surface Treatments							
Fog Seal		X					
Seal Coat	X	X					
Double Chip Seal	X	X					
Slurry Seal	X	X					
Microsurfacing	X	X	X				
Thin Overlay		X	X				
Pothole and Patching Repair							
Cold Mix Asphalt				X			
Spray Injection Patching				X			
Hot Mix Asphalt				X			X
Patching with Slurring or Microsurfacing Material				X			X

TABLE 2: GENERAL EXPECTED PERFORMANCE OF MAINTENANCE TREATMENTS

Source: Adapted from Iowa Statewide Urban Design and Specification guide.

Treatment	Expected Performance (Treatment Life), Years
PCC	
Crack Sealing	4 to 8
Joint Resealing	4 to 8
Partial Depth Patches	5 to 15
Full Depth Patches	10 to 15
Diamond Grinding	5 to 15
Pavement Undersealing/Stabilization	5 to 10
HMA	
Crack Filling	2 to 4
Crack Sealing	2 to 8
Pothole Patching	1 to 3
Full/Partial Depth Patches	3 to 15
Fog Seals	1 to 3
Slurry Seals	3 to 6
Microsurfacing	4 to 7
Bituminous Seal Coats	4 to 6
Double Chip Seal	7 to 10
Thin Overlays	7 to 10

All the treatments in this section may be considered for projects in Bondurant, although some are more preferred than others. The recommended CIP will not differentiate between types of projects within the same treatment category, as the actual treatment selection should be performed on a project-by-project basis and reviewed by a Professional Engineer. **Table 1** provides some simple guidance on which types of treatments are appropriate based on the distresses that a pavement presents and **Table 2** helps compare the effectiveness of each treatment over time.

The treatments used in the dTIMS model represent those expected to be the most common given certain conditions. These “preferred treatments” will likely comprise the majority of pavement preservation work performed in Bondurant. This list, however, is merely a tool to aid in budgeting and planning and not a prescriptive result. Rather, the results from dTIMS are categorical recommendations based on severity and types of surface distresses. These recommendations will then need to be individually assessed for appropriateness against similar treatment alternatives before it is designed and constructed.

ESTIMATED TREATMENT COSTS

One of the critical components in any financial planning endeavor is accurately predicting costs that will be incurred. In this case, the primary costs of concern are the design, construction, and ancillary costs associated with executing a roadway improvement project. Bondurant has historical information about its expenditures on roadway projects throughout the years showing significant increases in project costs. Future growth was accounted for via a 2.1% inflation[1,2,] factor applied to all project costs in dTIMS BA.

Treatment types were assigned planning-level costs by analyzing local cost information and tabulations of contractor bids for past projects, which were supplied by the City and from additional sources. Assumptions were made regarding mobilization rates, design fees, traffic control, and other ancillary costs based on percentages of the overall costs. Since the costs used in this report are planning-level, it is recommended that each project be reviewed during the annual capital improvement budgeting process. The City may elect to move projects around into different years or change the treatment type.

For most practical purposes, treatments within the same category are interchangeable because they will likely be appropriate for a project of a certain condition category. Regardless, the actual treatment applied should be based on comprehensive review and engineering judgement. When selecting the specific treatment to use on a given roadway segment, it may be useful to perform Life-Cycle Cost Analysis to evaluate the various treatment alternatives within the same category against each other, or even when considering leaving it to be reconstructed at a later time.

TREATMENT SELECTION CRITERIA

With the treatment alternatives selected for the toolbox, the criteria for selecting one treatment over another needed to be determined. Cost and funding availability are regularly the deciding factors for local agencies, getting the most benefit for the least amount of investment possible. Therefore, cost estimates for each treatment were developed using bid tabulations and project histories from various cities’ pavement management programs.

The other main factors in treatment selection are condition and distresses. The overall condition of a pavement should determine when it needs work and what type of work.

The types of distresses should then be considered when evaluating equivalent treatments based on appropriateness. **Table 3** includes a full overview of the treatment toolbox with descriptions, cost estimates, triggers, and the expected effects of each individual treatment alternative. This information is what will be used in the dTIMS BA scenario modelling process, to be performed as part of the Bondurant Pavement Management Program.

TABLE 3: TREATMENT ALTERNATIVE DETAILS

Category	Treatment	Description	Cost	Trigger
Reconstruction	Reconstruction	The complete reconstruction of a roadway and all associated improvements. This assumes new HMA pavement, but full-depth PCC or COM may be considered based on relevant design criteria.	$230/sy	PCI =Poor OR Very Poor
Major Rehabilitation	Crack and Seat Overlay	Asphalt Overlay, of at least 3 inches thick, with preparation including breaking up existing pavement and setting it up as a good structural base for the new asphalt surface. Effectively creates a new pavement.	$60/sy	PCI =Poor, Surface = PCC, Low D Crack
	Mill and Overlay	1.5 to 3 inches of asphalt pavement is milled off and then replaced with 3 inches of asphalt. Repairs surface issues and improves structural character.	$54/sy	PCI =Poor, Surface = HMA, IRI > 250, Moderate Alligator Cracking
	Thick Overlay with Interlayer	Asphalt Interlayer is an asphalt mix design growing in usage. This highly flexible, polymer modified asphalt can be used to add strength to traditional overlays. The usage of interlayer in thick overlays can further extend the life of a traditional thick overlay. ($150/tn)	$54/sy	PCI =Poor, Low D Crack, Low Spalling, Moderate Alligator Cracking, Moderate Patching
	Thick Overlay	Sometimes called a “Structural Overlay.” 3 inches of Asphalt that adds enough thickness to increase the durability of the roadway and provides a new wearing surface. Can be done with asphalt or PCC (black-topping/white topping) May require replacing curb and gutter.	$47/sy	PCI =Poor, Low D Crack, Low Spalling, Moderate Alligator Cracking, Moderate Patching
	Major PCC Restoration	Portions of the street in bad repair are torn out and replaced (approximately 20% of a street). This may include patching, full panel replacement, and full depth repairs at joints. Slightly improves overall condition and helps extend life by addressing problem areas before they spread	$45/sy	PCI = Fair, Surface=PCC
Minor Rehabilitation	Thin Overlay	A “non-structural overlay.” Laid on top of existing pavement; typically, 1-2 inches of asphalt. Improves smoothness and extends the life of roads in good to fair condition.	$35/sy	PCI =Poor or Fair, Low D Crack, Low Spalling, Low Alligator Cracking, Low Patching, Low Rutting
	Minor PCC Restoration	Portions of the street in bad repair are torn out and replaced (approximately 10% of a street). This may include patching, full panel replacement, and full depth repairs at joints. Slightly improves overall condition and helps extend life by addressing problem areas before they spread	$25/sy	PCI = Good, Surface=PCC
Restoration/ Preservation	Crack Sealing	Sealant on cracks and joints is used to prevent spreading and moisture from getting into the pavement structure. Deteriorated cracks may be routed or sawed out to provide better seal and bond.	$12,000/ Mile/Lane	Applied every time Last Work Done counter reaches a multiple of 4 years
	Diamond Grinding	Top ¼ inch to a ½ inch of PCC pavement is ground off and textured. This is only done on rough pavements with good structure to improve ride smoothness and increase vehicle traction for safety purposes.	$10/sy	PCI=Good, IRI>250, Low D Crack, Low Spalling, Low Alligator Cracking, Low Patching, Low Rutting
	Microsurfacing	Thin asphalt polymer that seals the pavement from weather effects and corrects for minor irregularities. Typically used as a preventative measure, rather than a corrective one.	$10/sy	PCI = Fair or Good, Low D Crack, Low Alligator Cracking, Low Patching, Moderate Rutting
	Pavement Patching	Asphalt placed at spot locations. Used only on good pavements with minor failures, or as a stopgap on poor pavements until a better, more permanent, solution is applied.	$5/sy	No trigger assigned

[1] Office of Management and Budget. (December 2022). Advisory Circular A-94. DISCOUNT RATES FOR COST-EFFECTIVENESS, LEASE PURCHASE, AND RELATED ANALYSES Appendix C

[2] Mack, J. W. Accounting for Inflation in Life Cycle Cost Analysis for Pavement Type Selection. Transportation Research Board, Vol. 12, No. 2686, 2011.

The treatment costs listed in **Table 3** are considered "all-in" numbers. These costs represent not only the materials to perform the construction of the project but all the expected costs that would be associated with the given treatment type. For example, the Reconstruction treatment includes costs related to storm sewer as that will be needed as part of the new pavement system. **Table 4** through **Table 15** provide example calculations for each of the treatment types. Note that these are **planning-level costs** only, however. While based on engineering judgement and historical bid tabulations, they are not a replacement for an engineering opinion of probable cost.

TABLE 4: RECONSTRUCTION COST CALCULATION

Reconstruction ($/SY)	
Excavation	$ 18.00
Subgrade	$ 3.00
Subbase	$ 14.00
Subdrain	$ 6.00
Storm Sewer*	$ 30.00
Pavement Removal	$ 9.00
Pavement (PCC)	$ 76.00
Driveways/Sidewalks	$ 17.00
Seeding/Paint Markings, etc.	$ 8.00
Mobilization, Traffic Control, Survey (15%)	$ 29.00
Contingency (10%)	$ 20.00
Total (Rounded Up)	**$ 230.00**

TABLE 5: CRACK AND SEAT COST CALCULATION

Crack and Seat w/ Overlay ($/SY)	
Crack and Seat	$ 5.00
Milling	$ 2.00
3" HMA Overlay @ $120/Ton	$ 20.00
Tack and Patch @ $250/Ton	$ 5.00
Curb and Gutter/Patching	$ 7.00
Driveways/Sidewalks	$ 6.00
Mobilization, Traffic Control, Survey (15%)	$ 8.00
Contingency (10%)	$ 7.00
Total (Rounded Up)	**$ 60.00**

TABLE 6: MILL AND OVERLAY COST CALCULATION

Mill and Overlay ($/SY)	
3" HMA Overlay @ $120/Ton	$ 20.00
Tack and Patch @ $250/Ton	$ 3.00
Milling	$ 3.00
Curb and Gutter/Patching	$ 7.00
Driveways/Sidewalks	$ 6.00
Mobilization, Traffic control, survey (15%)	$ 8.00
Contingency (10%)	$ 7.00
Total (Rounded Up)	**$ 54.00**

TABLE 7: THICK OVERLAY WITH INTERLAYER COST CALCULATION

Thick (3 In.) Overlay with Interlayer ($/SY)	
3" HMA Overlay @ $120/Ton	$ 20.00
HMA Interlayer	$ 7.00
Tack and Patch @ $250/Ton	$ 3.00
Curb and Gutter/PCC Patching	$ 7.00
Driveways/Sidewalks	$ 6.00
Mobilization, Traffic control, survey (15%)	$ 6.00
Contingency (10%)	$ 5.00
Total (Rounded Up)	**$ 54.00**

TABLE 8: THICK OVERLAY COST CALCULATION

Thick (3 In.) Overlay ($/SY)	
3" HMA Overlay @ $120/Ton	$ 20.00
Tack and Patch @ $250/Ton	$ 3.00
Curb and Gutter/PCC Patching	$ 7.00
Driveways/Sidewalks	$ 6.00
Mobilization, Traffic control, survey (15%)	$ 6.00
Contingency (10%)	$ 5.00
Total (Rounded Up)	**$ 47.00**

TABLE 9: MAJOR PCCR COST CALCULATION

Major PCC Restoration ($/SY)		
20% Remove and Replace	$	30.00
Crack Fill/Seal	$	3.00
Profiling	$	5.00
Mobilization, Traffic control, survey (15%)	$	3.00
Contingency (10%)	$	2.00
Total (Rounded Up)	**$**	**45.00**

TABLE 10: THIN OVERLAY COST CALCULATION

Thin (1.5 In.) Overlay ($/SY)		
1.5" HMA Overlay @ $120/Ton	$	10.00
Tack and Patch @ 250/Ton	$	3.00
Curb and Gutter/PCC Patching	$	7.00
Driveways/Sidewalks	$	6.00
Mobilization, Traffic control, survey (25%)	$	5.00
Contingency (10%)	$	4.00
Total (Rounded Up)	**$**	**35.00**

TABLE 11: MINOR PCCR COST CALCULATION

PCC Restoration ($/SY)		
10% Remove and Replace	$	14.00
Crack Fill/Seal	$	2.00
Profiling	$	4.00
Mobilization, Traffic control, survey (15%)	$	3.00
Contingency (10%)	$	2.00
Total (Rounded Up)	**$**	**25.00**

TABLE 12: MICROSURFACING COST CALCULATION

Microsurfacing ($/SY)		
Polymerized Surface Treatment	$	5.00
Tack and Patch @ 250/Ton	$	3.00
Mobilization, Traffic control, survey (25%)	$	1.00
Contingency (10%)	$	1.00
Total (Rounded Up)	**$**	**10.00**

TABLE 13: DIAMOND GRINDING COST CALCULATION

Diamond Grinding ($/SY)		
Grinding and Mobilization	$	10.00
Total (Rounded Up)	**$**	**10.00**

TABLE 14: CRACK SEALING/FILLING COST CALCULATION

Crack Sealing/Filling ($/Lane-Mile)		
Crack Sealing (per Mile per Lane)	$	12,000
Total (Rounded Up)	**$**	**12,000**

TABLE 15: PATCHING COST CALCULATION

Patching ($/SY)		
Patch @ 250/Ton	$	5.00
Total (Rounded Up)	**$**	**5.00**

EXISTING CONDITION ANALYSIS

The City of Bondurant maintains approximately **50 Miles of roads** and the transportation infrastructure network, not including bridges, is valued at approximately **$140 Million.**

Network Value = $140 Million

As is the case for nearly all municipalities, capital assets are the most valuable thing a city owns. As a major part of these assets, it is important that streets are managed properly to ensure the value of these resources are preserved

Pavement condition information from the 2021 automated data collection vehicle run by IPMP's sub-consultant Pathways was joined to the processed baseline information from the City of Bondurant using the ESRI ArcGIS software. That data was analyzed to create overview statistics and investigate various trends, both over time and spatially. Detailed maps were created to illustrate the pavement characteristics and the collected condition data, which can be found starting on **Page 22.**

FUNCTIONAL CLASSIFICATION

Roads in Bondurant are separated into three broad categories to help differentiate their use: **Local Streets, Collector Streets, and Arterial Streets**.

Local Streets, also referred to as "residential", serve low levels of traffic at the beginning or ending of vehicle trips. These streets often have many points of direct access from driveways, have lower speed limits, and sometimes have on-street parking. Local Streets make up the majority of any transportation network.

Collector Streets are those that connect Local Streets and concentrate traffic to help move vehicles efficiently between adjoining neighborhoods or provide access to the primary street network, namely Arterial Streets. These Collector Streets are generally wider and have slightly higher speed limits than Locals.

Arterial Streets carry the most traffic. These trunk roads travel at higher speeds and efficiently move traffic from one end of town to the other. They are also the gateway routes into and out of the City.

The reason for this distinction is that Arterial and Collectors are designed for higher volumes of traffic and heavier vehicles such as semi-trucks. As such, they are designed differently, costing more per square yard of pavement than Local streets. They also perform differently, by comparison. The higher traffic loads cause Arterials and Collectors to wear out faster on average than Locals, and motorists are more sensitive to surface distresses due to the higher speeds. That said, because Arterials/Collectors carry most of the vehicle-miles travelled in cities, they are more valuable to maintain in good condition. As such, for the purposes of modelling and planning using dTIMS BA, Arterial and Collector streets are considered separately from Local Streets.

Overall, Bondurant's transportation system has a fairly standard distribution of roadway Functional Classification. Most urban systems contain 60%-75% local streets with Arterial and Collectors being split roughly even in the remainder. Bondurant falls within this average, with around 70% of the network being local streets. Bondurant is responsible for just 2 main Arterial routes that cross through the city (Grant Street and 15th Street), which make up 12% of the network by length. US Highway 65 also crosses through Bondurant, but this route is maintained by the Iowa DOT.

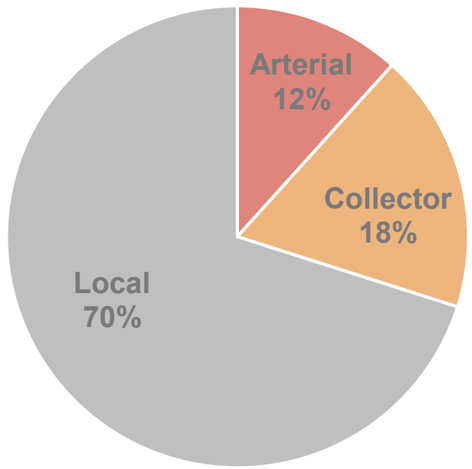


FIGURE 34: FUNCTIONAL CLASS DISTRIBUTION (BY CENTERLINE MILES)

This figure shows the breakdown of the various street classifications in Bondurant, based on the official Federal Functional Classification used by Iowa DOT.

PAVEMENT TYPE

Roads can also be separated by their surfacing type. Different pavement surfaces perform differently, have different types of treatment alternatives, and have different initial construction costs. Each type of road was considered separately in the dTIMS BA model for the City of Bondurant.

The three main categories considered by this plan are Portland Cement Concrete (**PCC**), Asphalt Cement Concrete (**ACC**), and Composite Pavements with HMA over the top of PCC (**COM**). Some agencies also refer to ACC as Hot-Mix Asphalt or HMA.

Most local streets, especially those in newly developed areas, are paved with PCC, which heavily contributes to the large proportion of PCC streets in the Bondurant network. Most occurrences of ACC are located on older collector and arterial streets.

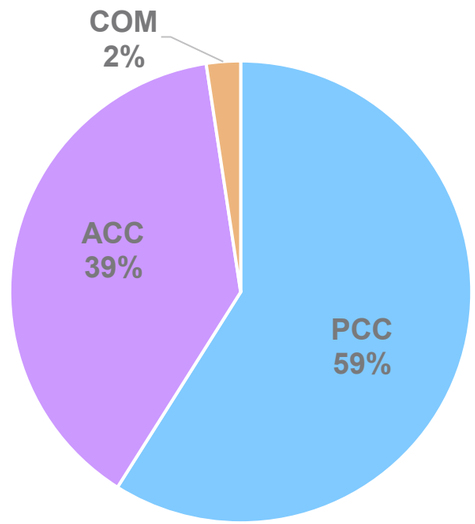


FIGURE 35: PAVEMENT TYPE DISTRIBUTION

This figure shows the distribution of pavement types in Bondurant. Of note is the high proportion PCC, and the relatively small proportion of ACC & COM surfaces.

PAVEMENT CONDITION

Bondurant's expansion in the last couple of decades and heavily residential nature has led to a somewhat "young" pavement network. As such, pavement conditions in the City are above average for an urban area in Iowa. The majority of urban areas in Iowa have average CityPCI scores around 60 which is considered "Fair" bordering on "Good." Bondurant, on the other hand, is a unique case where its streets are, on average, near the top end of the "Good" condition. The most recent Network-wide CityPCI evaluation for Bondurant resulted in a score of 78/100.

CityPCI = 78.0

(Good)

A notable fact about the current pavement conditions is that the average PCI scores for different pavement types are very similar. As is the case for most municipalities in Iowa, PCC makes up the majority of pavements and is generally newer pavement due to recent construction. However, the ACC pavements are performing just as well as the PCC pavements in Bondurant, with ACC only averaging 1 point less than PCC. Composite pavements are also all listed in the "Good" and "Very Good" categories. However, it is important to note that there is only approximately 1 mile of composite roads in the city, so this number may be artificially inflated.

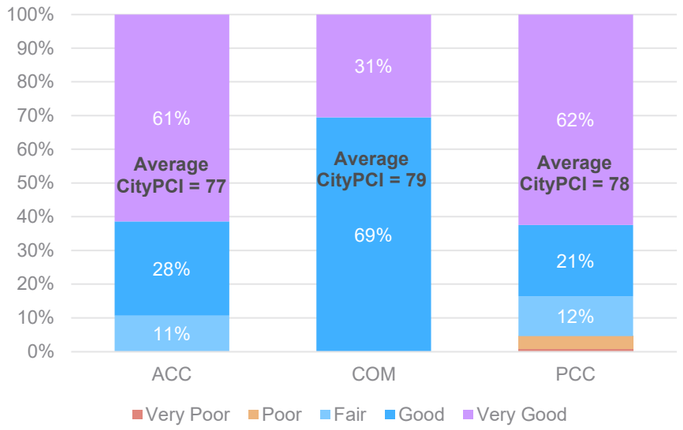


FIGURE 36: CONDITION DISTRIBUTION BY PAVEMENT TYPE

This figure shows the distribution of pavement conditions for each of the four pavement types.

When looking at functional classification, however, there is a perceptible difference between collector roads and the rest of the network. Overall, the arterial and local roads are performing noticeably better than the collector roads with high proportions of "Very Good" pavements. The mid-volume streets can often be problem areas for communities with rapid growth. Arterials tend to receive the majority of funding and new pavements with low traffic make up the bulk of the network. Conversely, collector streets still see moderate amounts of traffic but will often be left alone for long periods of time until the need is identified. Many of these collector streets in moderate condition will likely be good candidates for a lower cost rehabilitation. Treatments to roads such as these, before they deteriorate further, are a very cost-effective way to maintain the city's above average CityPCI score.

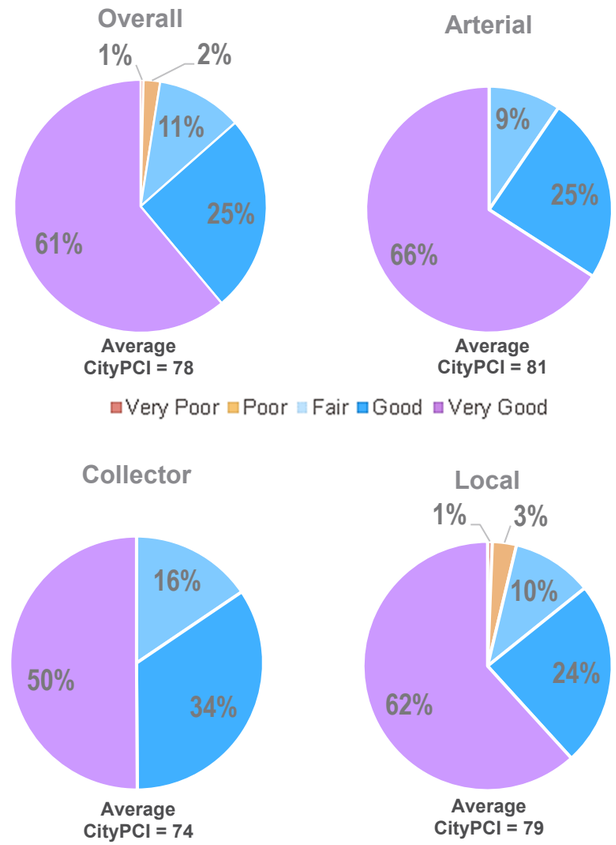


FIGURE 37: CONDITION DISTRIBUTION BY FUNCTIONAL CLASS

This figure shows the distribution of pavement conditions for each functional classification, as well as the network overall.

PAVEMENT CONDITION TRENDS

One of the biggest values of the IPMP Program and the data it provides is the fact that there are multiple years of data to work with. This allows for better trend predictions, due to having an 8-year period to work with, and it increases the statistical relevance of the data due to the higher volume of data points. This volume helps refine the precision of the modelling processes and identify specific conditions that may warrant further investigation.

Every other year IPMP receives over 4,000 raw data points from the automated collection vendor, just for the city of Bondurant. Approximately 20,000 data points go into this analysis section.

Looking at the network over time reveals a somewhat variable condition trend since 2013. Over the past 8 years of collection, average condition scores have typically been in the 70s, except for 2017. Over the past few collections, however, the scores have been on the incline. This is a positive sign for the network, but effort will need to be made to prevent future deterioration. Future decline in scores for Bondurant could have multiple potential causes such as the inflation of construction costs, aging infrastructure, or inconsistent roadway expenditures.

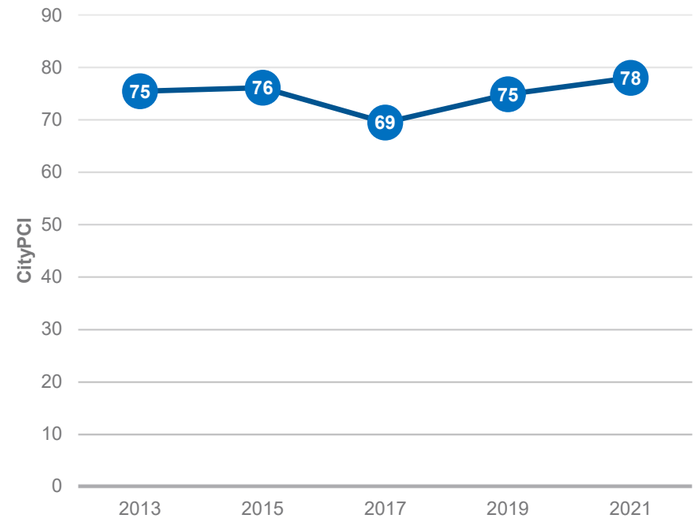


FIGURE 38: NETWORK-LEVEL PAVEMENT CONDITION TREND

This figure demonstrates the fluctuations the overall network has experienced since 2013.

The recent increase in overall PCI can most easily be attributed to the addition of new PCC pavement into the network. New development in the City's road network over the past 2 collection cycles has caused a notable increase in miles of new pavement. Since the majority of these new roads are local PCC roadways, it has increased the average PCI for both PCC and local roadways. It should also be noted that the decrease in roadway miles in the network seen in 2017 can be attributed to some street data that was not collected in that year, as opposed to actual decrease in roadway miles.

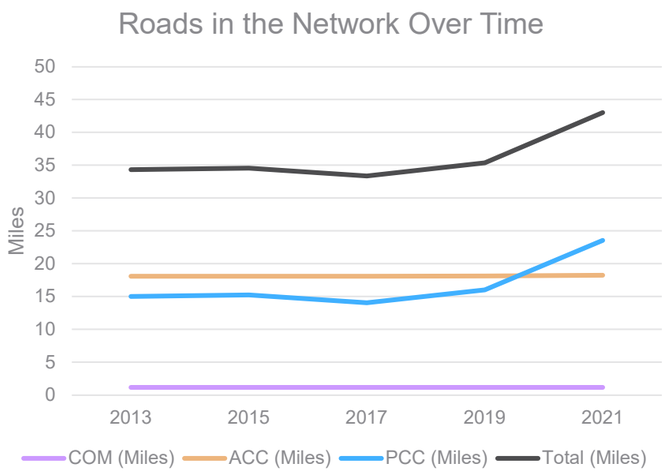


FIGURE 39: TOTAL LENGTH OF ROADS IN THE NETWORK

This figure demonstrates the amount of roadway miles in Bondurant by Pavement Type.

When looking at trends based on functional classification, we see that most of the network had been stable or on the decline until 2017 – 2019 when both arterial and local road saw significant improvement. This is again likely due to the influx of new pavements into the system in the local road category and the City's focus on maintaining arterials for new development in the area. Unsurprisingly, the average PCI score for Collectors has been steadily declining. Overall, the trends match the shape we expect based on **Figure 38.**

Comparing the pavement types revealed similar trends. All types had largely been on the decline until 2017 when improvements were made due to new roads in the network.

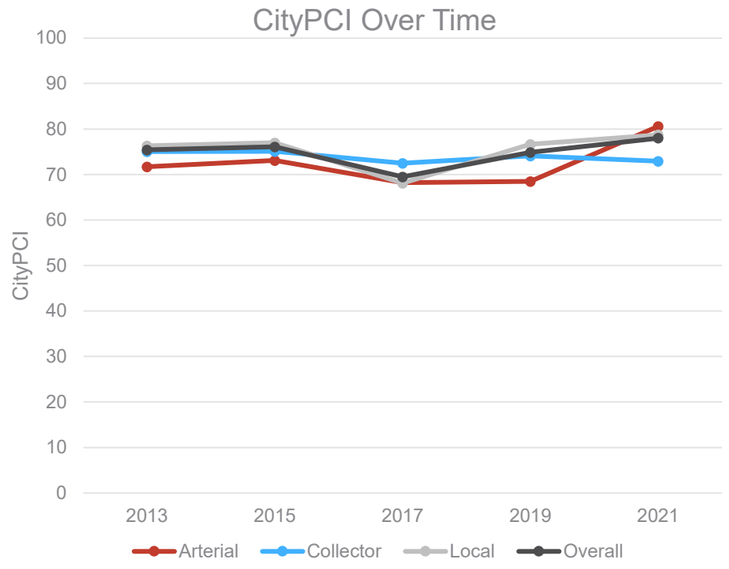


FIGURE 40: CONDITION TREND BY FUNCTIONAL CLASS

This figure demonstrates the fluctuations across Bondurant by Pavement Type

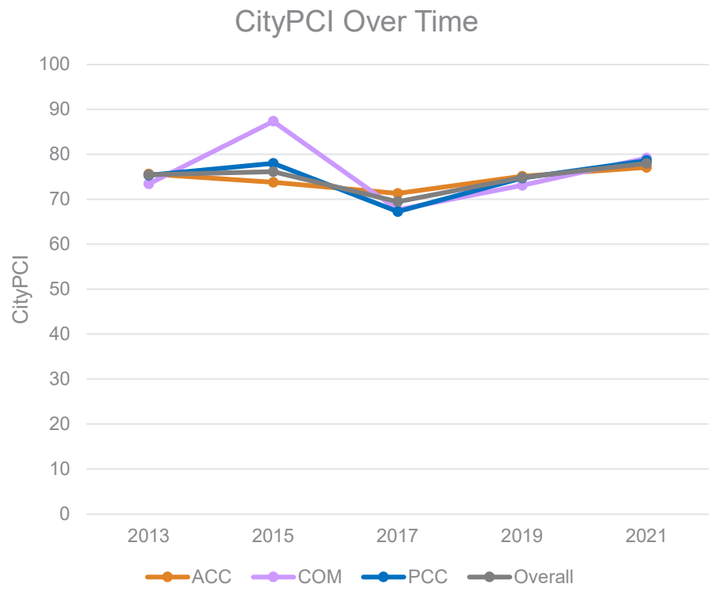


FIGURE 41: CONDITION TREND BY PAVEMENT TYPE

This figure demonstrates the fluctuations across Bondurant by Pavement Type

SUCCESS IN BONDURANT & CAUTIONS

Bondurant has many reasons to be proud:

- High CityPCI compared to cities of similar size in Iowa
- High proportion of "Very Good" and "Good" condition pavement
- Only small portions of pavement in need of repair, with most of the City representative of the high average.

This does not mean, however, that there is no work to be done. In fact, there are some specific weaknesses in the IPMP data that may superficially hide the true conditions of the streets in Bondurant. Some of those data gaps are caused by the way the data is collected, the types of data collected, and completeness of information.

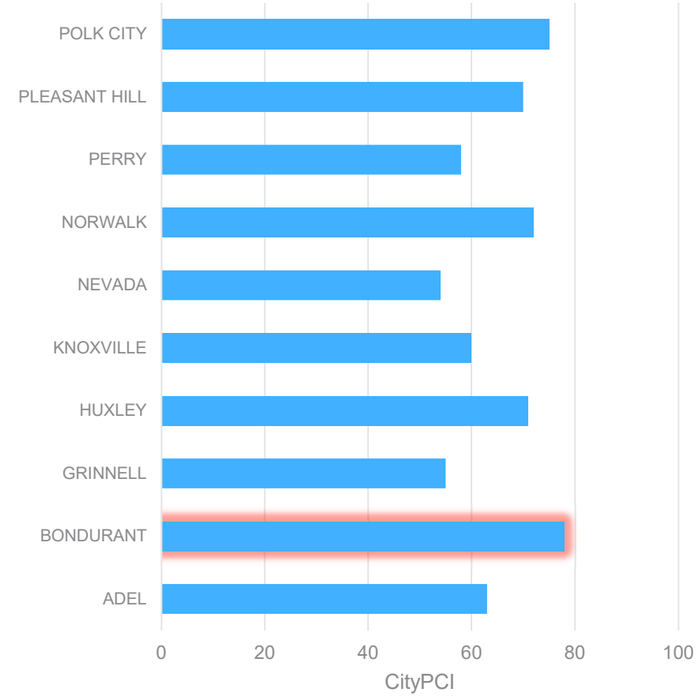


FIGURE 42: COMPARISON OF 9 JURISDICTIONS

This figure compares Bondurant's average CityPCI score with other similar sized communities in Iowa

The **sampling methodology** used by the IPMP data vendor consultant only addresses one direction of travel for a road and has certain restrictions. That means the data set, while extensive and significantly better than subjective manual rating, is not fully comprehensive. In 2017, undivided roads with fewer than 5 lanes were only driven in one direction, meaning that up to 75% of pavement area may not be covered on wide streets. Similarly, on-street parking can limit the vehicle's ability to read a continuous section of road accurately due to weaving maneuvers resulting in readings based on skewed angles and in areas outside the normal driving lane.

Roughness data can only be collected when travelling at 20 mph or more and requires a steady speed for at least 200 feet. Short street segments, dead-end roads, on-street parking, pedestrian crossings, and stop sign–controlled intersections can be very disruptive to the roughness measuring equipment, meaning that an urban area with many local streets will likely have low coverage for roughness data. For example, over 3.6 miles of streets in Bondurant did not collect any roughness data in 2015, and the data that was collected may not be reliable. Each collection cycle, 1%-5% do not have roughness data available. For those roads, roughness needs to be assumed based on other distress data. Luckily, the effect of roughness on CityPCI scores is minor.

FIGURE 43: ROUGHNESS PROFILE AFFECTED BY LOCAL DRIVING CONDITIONS

This Image was taken from Iowa DOT Pathweb showing a road where the collection vehicle was trailing a delivery van and weaving around parked cars causing a sudden change in roughness.

Other distresses, even though they were collected, may not factor at all into the CityPCI rating. Prime examples include punch-outs and failures. **Failures** are potholes and potholes that have been filled, identified as irregularly shaped asphalt patches. Failures are a critical distress both in pavement performance as well as driver perception of road quality. Unfortunately, these distresses are treated the same as other patches, if included at all. The CityPCI rating system for full-depth asphalt does not formally include failure as a distress and is inconsistent in whether it should be considered at all, because the failure is not always indicative of the rest of the roadway conditions.

Punch-outs are another failure ignored by the CityPCI rating. Punch-outs are when the edge of road breaks off, typically in conditions where there is no curb, or the curb was constructed separately. Pavement edges may continue sinking due to erosion of the base material. The condition is commonly caused by poor bank stability on roads with ditches, and erosion prone subbase materials in urban areas where subsurface drainage issues are not addressed. Punch-outs were only captured by the data collection services a handful of times in Bondurant since collection started, but where it was present, it was not included as a contributing distress.

FIGURE 44: UNACCOUNTED FOR PUNCHOUT

These images are of a punch-out that was not included in the pavement rating for the section

The final caveat to this data collection system is that it can only address **surface** distresses. Underlying problems such as voiding, eroding subgrade/subbase, and structural deficiencies cannot be identified, only the symptoms. High priority is paid to alligator cracking, spalling, and patching because of their associations with these problems, but evidence of these major deficiencies is not possible to collect directly without ground penetrating radar or pavement cores (both of which are comparatively expensive).

Underlying pavement ages are similarly important from a deterioration standpoint. Older, more distressed, bases mean new surfaces will deteriorate faster, due to a lack of stable support. Construction history is not as readily available so base age was assumed, in many cases. This report's methodology uses a "performance age" to group pavements that are deteriorating at similar rates, in order to estimate future behaviors.

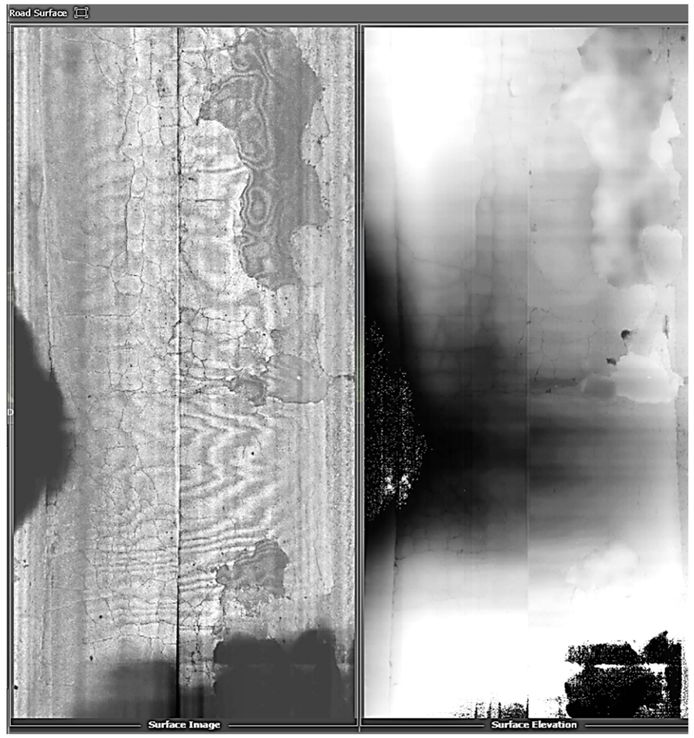


FIGURE 45: UNACCOUNTED FOR FAILURE

These are images of a failure not included in the pavement rating for the associated road.

Map *1: Federal Functional Class Overview*

Map *2: Pavement Condition Overview*

Map *3: Surface Type Overview*

Map *4: Ride Quality Overview*

Map *5: Pavement Deterioration Overview*

Map *6: PCC Joint Health Overview*

Map 7: *Pavement Distresses Overview*

SCENARIOS/RECOMMENDATIONS

In order to create recommendations on spending strategies and setting performance goals, a number of budget-based scenarios were created. These scenarios were designed to address “what-if?” type questions. Each scenario used a set budget and projected the effects on the overall condition of the network. The projections were performed using Deighton Limited’s dTIMS BA, for a 15-year period, from 2024 to 2038.

Once all the data was processed, it was put into a dTIMS model to develop long term performance projections and to run a number of scenarios to determine optimal budgeting and assess the impact of using the recommended standards herein.

MODELLING

dTIMS BA (Deighton’s Total Infrastructure Asset Management Software – Business Analytics) is a computer program developed by Deighton Associates Limited in storing infrastructure asset data, developing projections of infrastructure asset performance, estimating remaining life in various infrastructure assets, determining when they need to be replaced or repaired, and estimating how much the treatment will cost. It allows for any and all asset data to be entered, there is no limit to what information can be stored within the program and considered during the modelling process. However, the user must manually program how all the data relates to each other, assign costs, develop the treatment triggers and effects, create funding pools that each treatment will pull from, and develop their own life-cycle curves for the infrastructure assets. Once this is accomplished, dTIMS’ primary feature goes to work; it runs a heuristic algorithm (a series of tests using general rules and guessing approaches for determining optimal solutions) to identify an optimal “Strategy” for maintenance and replacement of the infrastructure assets in question, given the budget, treatments, and life-cycle information supplied by the user.

Some manipulation through GIS was required to combine the IPMP data with outside data sources from the City and State before it could be imported into dTIMS. After the data were compiled in GIS, it was imported to dTIMS, and the models were run.

DETERMINING NEED

DEFINING NEED

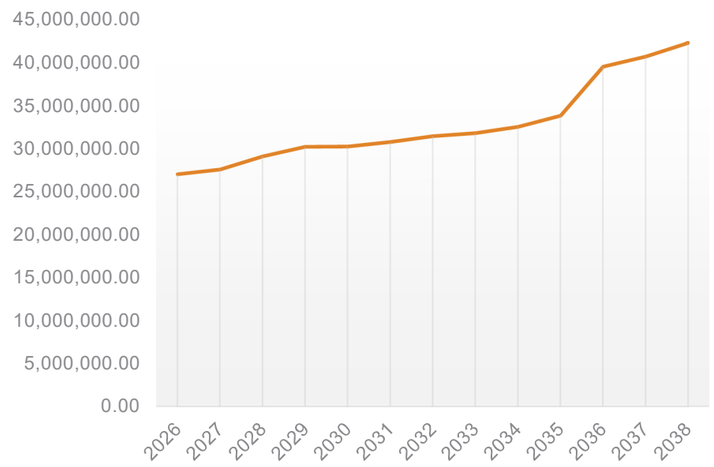
The first step in running various scenarios in dTIMS BA is to determine the “Need.” Need is defined as all outstanding work and forthcoming work in the analysis period. Some agencies may consider this as a “Backlog” projection.

Essentially, dTIMS BA analyzes the current conditions and creates condition projections for every pavement section in the database, after which it chooses a default treatment alternative for each segment, in every year, regardless of budget. This acts as a baseline scenario which could be considered as a Pavement Management Program operating at 100% efficiency with complete funding.

NEEDS IN BONDURANT

Using the pavement condition data collected by Pathways and distributed by IPMP, dTIMS BA analyzed the existing conditions of the roadway network in Bondurant, and an overall Need was determined.

The current Need for pavement repairs in 2026, or the total cost to address every single roadway distress in the City bringing the network to “Very Good” condition, is approximately $27 Million. That Need is projected to grow to $42 Million by 2038.



CURRENT NEED (2026) = $27 MILLION

PROJECTED NEED BY 2038 = $42 MILLION

FIGURE 46: PROJECTED “NEED”

This figure displays the existing funding required to bring every pavement up to “Very Good” condition, i.e., “Need” as well as its projected Growth over the next 15 Years.

SCENARIOS

To address the existing backlog (Need), the City will need to commit a steady amount of funding to maintain its roadways. A number of budget options were tested to determine a theoretical budget for the City of Bondurant.

Fiscally Constrained, or Budget-based Scenarios, take a fixed annual budget and attempt to optimize pavement management spending using the treatments shown in **Table 3** on page 15.

The funding comparisons keep all the proposed work within the assigned budget, while maximizing the “Benefit” provided to the public. Benefit was determined as the difference between the conditions of the road network if nothing was done and the selected treatment effect (measured by difference in CityPCI scores). This method is standard practice when determining optimal treatments. The model used in this plan also factored in the amount of traffic (based on annual average daily traffic or AADT) on the affected roads. The final result represents both the magnitude/duration of the improvement and the number of people who will receive the benefit of driving on a newly reconstructed road. This benefit calculation was how the model determined how the overall condition of Bondurant would perform over a 15-year period.

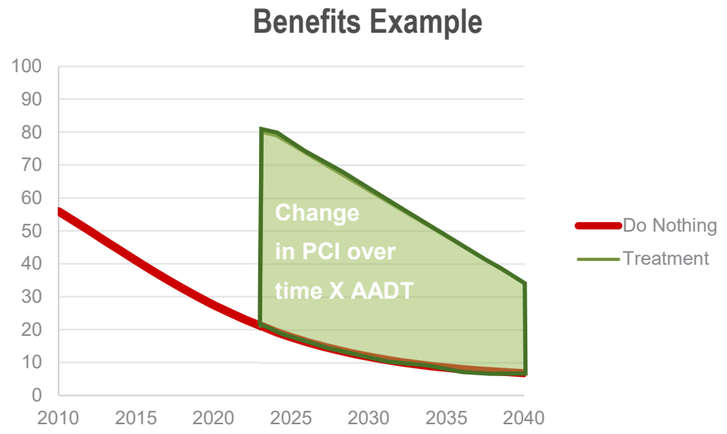


FIGURE 47: WHAT THE BENEFITS CALCULATION LOOKS LIKE

The red line is the “baseline” scenario, the green area is the “Benefit” the public experiences, calculated as the difference between the baseline and the new improved condition, factored by the number of people who drive on that road (Annual average daily traffic, AADT)

dTIMS BA checks each individual roadway segment to see if it triggers a specific treatment type, then calculates the “Benefit” of performing that treatment. Afterwards, dTIMS BA will then compare each treatment option and determine the one that gives the best ratio of benefit to cost. It then goes out further and sees if any treatments would trigger in future years that would give better benefit-cost returns (such as waiting to reconstruct a pavement rather than overlaying it). After comparing all the initial treatment selections across all the years, the program also considers subsequent treatments and their effects. Complex dTIMS models might look at dozens of treatments in sequence before picking the best choices, which are called “treatment strategies”.

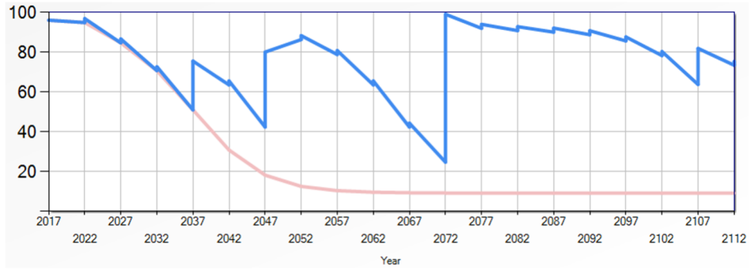


FIGURE 48: EXAMPLE OF A TREATMENT STRATEGY EXECUTED BY DTIMS.

The blue line is the effect, pink is what would happen if nothing were done. The jaggedness is from regular maintenance activities, the first peak is a PCC restoration, the second is a crack and seat overlay, the jump in 2072 is a reconstruction, and the final peak is another PCC restoration.

Of course, the best choice of treatment may not always be the one that can be afforded within the City's budget. The program then ranks each treatment strategy based on their benefit-cost ratio and picks those that it can afford, deferring those it cannot, and occasionally picking less optimal treatments because it would allow the program to use more of its budget in a timely manner.

The funding scenarios used were designed to hone in results that enable actionable changes in the existing pavement management program in Bondurant. Questions were asked at a high level, and the dTIMS BA model was adjusted to address those questions. The results were then interpreted to clarify what the numbers truly mean.

The funding scenarios performed looked at following questions:

- What happens if the City does nothing?
- What happens if funding increases?
- What happens if funding decreases?
- How much money to maintain a network average PCI of 60?
- How much money to maintain a network average PCI of 70?
- How much money to maintain a network average PCI of 80?
- What is the proper distribution of funds across Reconstruction/ Rehabilitation/ Restoration?

RESULTS

BUDGET PROJECTIONS

The City of Bondurant is currently in "Good" condition, and it is easier to maintain a network than it is to improve a network. As such, the City is well positioned to keep operations going on a limited budget while still ensuring a high quality of infrastructure.

The "Do Nothing" scenario option points out the value of Pavement Management. Network condition would drop below 60 in 10 years without it. It also shows the general trend the City can expect. **Figure 49** shows how quickly pavements would deteriorate if no work was completed. The proportion of pavements in very good condition starts to drop immediately, and the amount of roads in very poor condition starts to steadily increase.

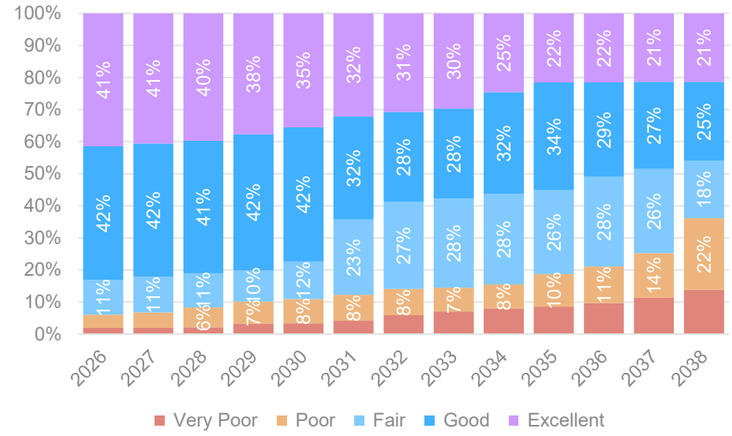


FIGURE 49: CONDITION DISTRIBUTION PROJECTION – DO NOTHING ($0)

This graph is from the dTIMS BA results for the Do-Nothing Scenario over the next 13 years. Compared to the preferred budget the difference is pronounced

In order to determine an ideal budget for the City, budget scenarios were first explored ranging from $250,000 all the way up to $3 Million annual funding, with various intervals. **Figure 52 on page 31** shows these scenarios. The results showed that there are only marginal benefits to budgets over $2 Million per year; any expenditures over that level are mostly wasted and are just done to use up the budget, not out of need and budgets under $1.2 Million per year showed a decline. This indicated that the optimal budget would likely be one between $1.2 Million and $2 Million and would maintain the network average PCI score above 70/100 or "Good" on average.

Additional scenarios were developed to refine the results and establish a preferred expenditure strategy. In the end, it was determined that the recommended budget would be approximately $1,200,000 per year. This budget allowed the City to maintain a PCI level around 75/100 with little variance over the 15-year analysis period. It neither wasted money nor short-changed the program. It also maintained the current pavement condition distribution, as seen in **Figure 50,** so that it did not just sink money into increasing the amount of "Very Good" while ignoring "Poor" and "Very Poor" roads.

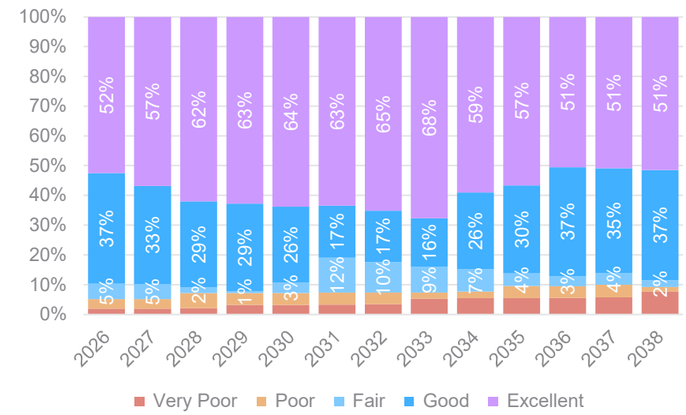


FIGURE 50: CONDITION DISTRIBUTION PROJECTION – PREFERRED BUDGET ($1.2M)

This graph is from the dTIMS BA results for the preferred budget over the next 13 years.

Given the City's current streets maintenance budget, it is understood that a $1.2 million budget may not be a realistic goal within the next year. **Figure 51** shows what happens if Bondurant gradually increases their budget over the next few years in order to reach a $1.2 million budget by 2032.

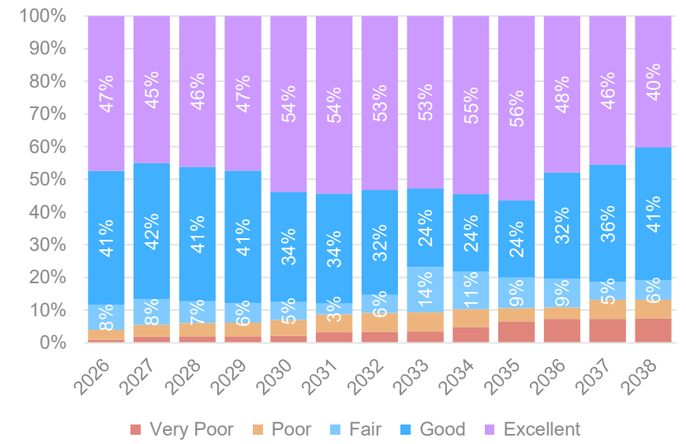
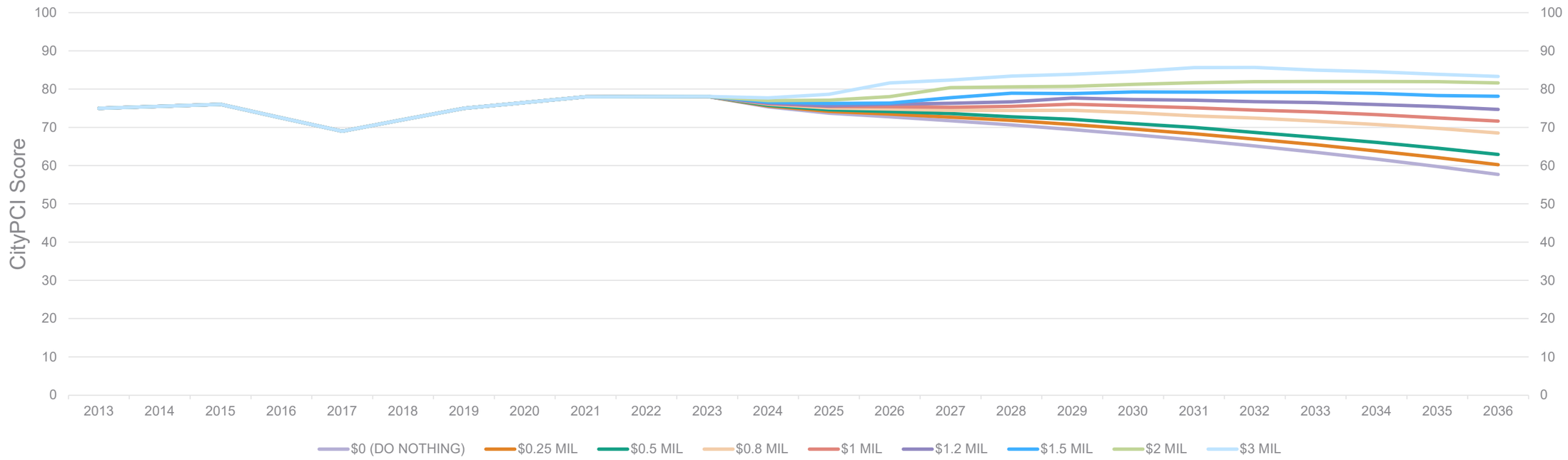


FIGURE 51: CONDITION DISTRIBUTION PROJECTION (VARYING BUDGETS)

This graph is from the dTIMS BA results for a $650,000 budget for the next 3 years, $1.0 Million budget for the following 3 years, and $1.2 Million thereafter This graph is from the dTIMS BA results for the preferred budget over the next 13 years.



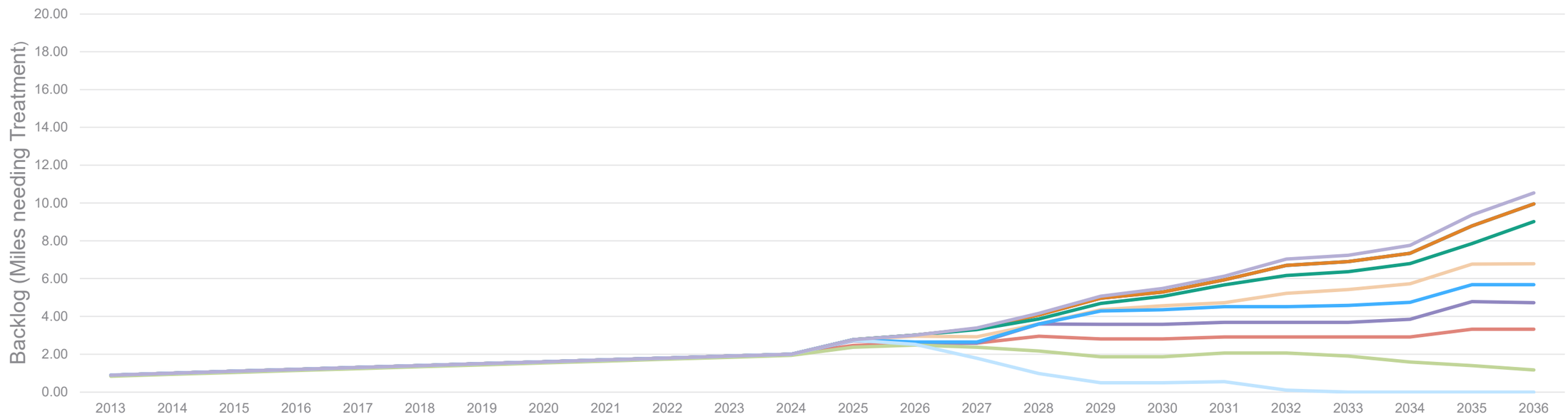


FIGURE 52: CITYPCI AND BACKLOG PROJECTIONS BY BUDGET

The results of the dTIMS BA modelling. These graphs represent the effects of adopting various budgets and what happens over the next 12 years. Changes to the network level Pavement Condition Index is on top and the bottom represents the miles of road that will need to be deferred for future treatment

TARGET-DRIVEN SCENARIOS

If the City wants to consider the cost implications of maintaining a level of service other than the one they currently have, a range of options was explored within dTIMS BA. This was done using the "Strategic Analysis Module" or SAM. A range of budgets was programmed to test which ones would result with a given average PCI at the end of the analysis period. This approach is more realistic than immediately jumping to the target and holding it, and actually reduces costs for both the higher and the lower goals.

PCI targets were tested ranging from 60 to 80 in 5 PCI increments and the average annual costs were rounded to the nearest $100,000 for simplicity. Each jump in 5 PCI points yielded about a $0.3 Million cost difference, with the preferred budget falling between the Targets for PCI=70 and PCI=75. Each of these goals falls within the "Good" category, though 80 is on the threshold for "Very Good." This means that the difference in performance of the network may not be noticeable during the analysis period. That said, these costs are only the average for the analysis period. For lower targets it takes nearly the whole 15 years to drop to 60 so the model was only putting forth minimal maintenance. Beyond the immediate future that budget may end up rising higher than the projected budget of $1 Million.

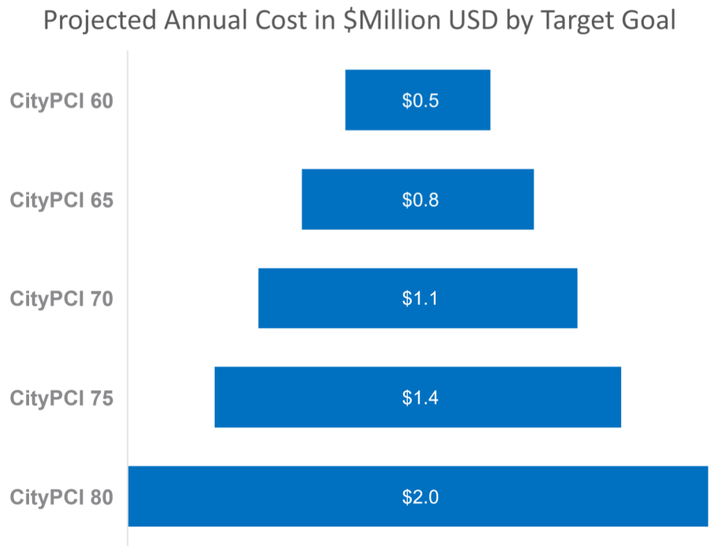


FIGURE 53: EST. COSTS TO MAINTAIN AVERAGE CONDITION LEVELS

This figure shows the dTIMS cost results in rounded to the nearest $100k in order to maintain a certain average condition level. To determine total cost.

"HYBRID" GOAL SCENARIO

Different functional classifications typically are used by vastly different amounts of traffic and are traveled at different speeds, meaning that the effects of pavement distresses on drivers may not be equal. As such, setting a "hybrid" goal where local streets are held to a different standard than arterials may present a cost savings opportunity. In addition, this approach puts emphasis on spending more on higher volume streets to get more "band for the buck."

Local roads make up the majority of Bondurant's pavement network and the target performance level of the local roads are driving the majority of costs to maintain the overall network PCI. As such, exploring alternatives for local road performance will give the City more tools to optimize their budget.

If the target goal for local roads were to be set at 70, still considered quite good, the City would save approximately $600,000 annually compared to what would be required to maintain the local roads at their current condition of 78/100.

Arterials and Collectors are the most important streets, so maintaining a higher goal of "Good" (75/100) might be more suitable. Bondurant's arterials and collectors are in exceptional condition already so only minimal maintenance over the next 15 years is necessary.

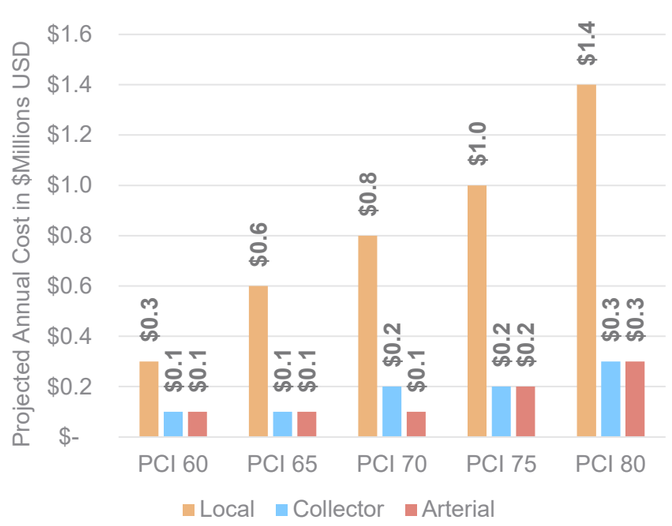


FIGURE 54: EST. COSTS TO MAINTAIN CERTAIN CONDITION LEVELS BY CLASS

This figure shows the dTIMS cost results rounded to the nearest $100k in order to maintain a certain average condition level based on the functional class. To determine total cost, add 3 different class options together.

IDEAL SPENDING PROPORTIONS

When looking at the types of treatments applied there is an optimal balance, unique to each city. Too much reconstruction can eat up your budget quickly and not leave anything to maintain older pavements, meaning more early failures. Too much rehabilitation means maintaining the ideal candidates really well but end up ignoring the "lost-causes" for extended periods while you try to carve out funds for reconstruction only occasionally. Both cases can result in a lopsided distribution of pavement conditions that is heavy on the two extremes.

Research performed by HR Green has indicated that most cities in Iowa tend to perform best with a 60/40 split between rehabilitation and reconstruction or 55/35 with the remaining 10% focused on restoration treatments like crack sealing and patching.

However, for Bondurant, The dTIMS BA model provided insight for splitting the funding and indicated an **ideal funding distribution of 80/10/10** between Rehabilitation, Restoration, and Reconstruction. This result is slightly atypical but is a clear result of Bondurant's current pavement distributions. There are a small number of roads that need major work, but a large amount of relatively newer, low-risk, pavements that do not yet need rehabilitation. The budget therefore is focused more towards preserving the "Good" pavements with restoration treatments and addressing the few existing pavements that are in "Poor" or "Very Poor" condition. Over time, however, this may need to shift more towards Reconstruction.

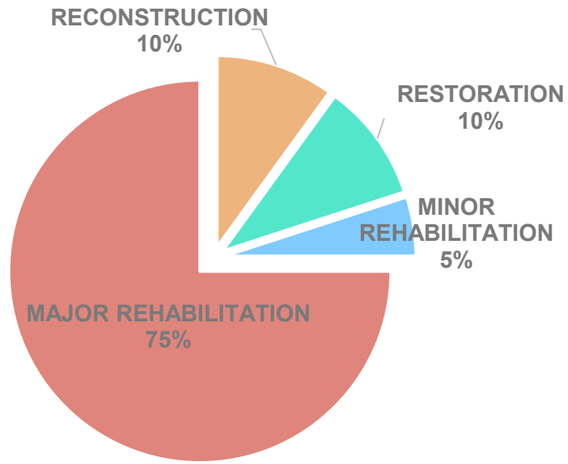


FIGURE 55: DTIMS BA RECOMMENDED BUDGET PROPORTIONS

This figure shows the results returned by dTIMS BA when developing the construction program.

LAND DEVELOPMENT AND INCREASING LIABILITIES

The recommended budget solutions assume that the amount of maintenance, rehabilitation, and reconstruction needs in Bondurant will be static and unchanging. The size of the network and its characteristics are fixed in time. However, the reality is that Bondurant is still a growing City.

In 2010, Bondurant's population was 3,930. Since then, the population of Bondurant has grown to 8,035 in 2021, a nearly 105% increase in population in just 10 years. This kind of population change is driven by new development and housing opportunities.

Along with the expansion of housing and population comes increased demand for infrastructure. In order to provide for the future needs, either the City or Developers will need to ensure they are providing adequate funding for road reconstruction.

Expanding the street network also means increasing the City's maintenance liabilities. More roads require more money. HRG estimates that for each mile of new roadway built, the City will need to spend approximately **$103,000 more each year** on maintenance and rehabilitation, not accounting for inflation.

FIGURE 56: 2010 AERIAL IMAGERY (USDA)

Aerial imagery from 2010 shows the historical core of the community's infrastructure and serves as a reference for how much it has expanded in the past 10 years.

Looked at another way, using the assumptions from **Cost Comparison Section** on **page 52**, the cost increase is approximately **$880 to $945 per lot.**

TABLE 16: ADDITIONAL COSTS OF MAINTAINING 1 MILE OF NEW ROAD

Year	Action	Cost (PV)	Annual Cost (PV)
1	Construction	By Developer	By Developer
5	Seal	$24,000	$4,800
9	Seal	$24,000	$2,667
12	Seal & Patch	$82,135	$6,845
15	Rehab (PCC Restoration)	$ 410,675	$27,378
18	Seal	$24,000	$1,333
21	Seal	$24,000	$1,143
24	Seal & Patch	$82,135	$3,422
27	Seal & Patch	$82,135	$3,042
30	Rehab (Overlay)	$ 772,069	$25,736
33	Seal	$24,000	$727
36	Seal	$24,000	$667
39	Seal & Patch	$82,135	$2,106
42	Seal & Patch	$82,135	$1,956
45	Rehab (Mill & Overlay)	$887,058	$19,712
48	Seal	$24,000	$500
51	Seal	$24,000	$471
54	Seal & Patch	$82,135	$1,521
57	Seal & Patch	$82,135	$1,441
60	Seal & Patch	$82,135	$1,369
65	Reconstruct	$3,778,210	$58,126
	Total	**$6,697,092**	**$103,032**

FIGURE 57: 2022 AERIAL IMAGERY (USDA)

Aerial imagery from 2022 can show the extent of growth that has taken place over the past 10 years.

PERFORMANCE METRICS AND GOAL SETTING

Pavement Management Programs are ongoing processes. Adopting a plan and analyzing potential budgets are not enough. They need to be actionable and have clear, measurable performance goals.

The first steps in moving forward are to approve the findings of this pavement management plan, identify a funding strategy, and then develop an objective, data-driven Capital Improvement Plan. The Capital Improvement Plan will assist decision makers in determining the most cost-effective actions are to use the funding they have available to improve or maintain conditions in Bondurant.

With the Scenario results in mind, Bondurant needs to set some measurable performance goals for the near future, that will be addressed by said Capital Improvement Program. This allows a City to track its performance, ensuring that it remains on track and is actually effective.

RECOMMENDED PERFORMANCE METRICS

- Maintain a Hybrid CityPCI goal of 70 for Local Streets and 75 for Collectors and Arterials.
- Clearly establish a dedicated budget for Pavement Management activities
- Steadily Increase average annual spending on roadway improvements to approximately $1.2 million per year.
- Maintain an ideal Rehabilitation budget share of about 80%, Reconstruction budget share of around 10%, and Restoration share of at least 10%.

"LIVING DOCUMENTS"

Another important part of this performance tracking and goal-setting is to renew this plan as physical, fiscal, and political conditions change. HRG recommends that Pavement Management Plans act as "Living Documents" that grow with cities and adapt to their needs by regular updates and changes. By default, for most agencies this will mean renewing the plan every 2-4 years, complete with new pavement condition data.

CAPITAL IMPROVEMENT PLAN

The Capital Improvement Plan (CIP) is a list of recommended projects for Bondurant to complete over the next 10 years. This list of projects was generated using the results of the dTIMS BA model, as well as several other factors. The project list is optimized for the most effective use of available funds, based on the pavement condition data and planning-level information provided by the City.

Appendix A: Capital Improvement plan includes a complete list of recommended projects and maps identifying the location for the proposed treatments. Projects are sorted into three phases, Phase 1 (FY2026-FY2028), Phase 2 (2029-2031), and Phase 3 (FY2032-2035). It is assumed that the annual budget will start at $500,000 in 2026 and gradually increase to $1.2 Million by 2032. For this reason, an average annual budget of $650,000 was used to establish projects for Phase 1 and an average annual budget of $1 Million was used for Phase 2.

These lists and maps will serve as a tool to assist City staff during the project planning process, but they do not replace engineering judgement. Project types may change from what is in the CIP and projects will likely move between phases for various reasons. Some projects may even leave the plan entirely as new ones are added. Some reasons the program may change include field conditions not captured by the IPMP data, required utility improvements, or environmental hazards causing changes to local conditions.

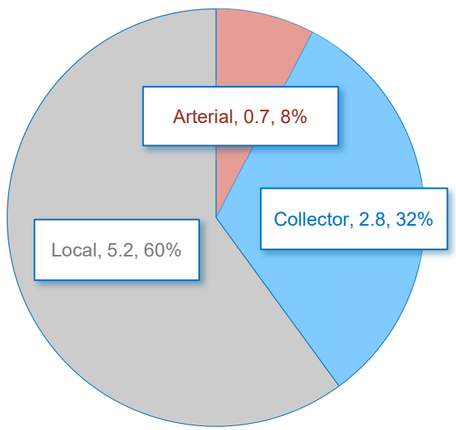


FIGURE 58: LENGTH OF TREATMENT BY FEDERAL FUNCTIONAL CLASS
This area graph shows the breakdown of projects based on the miles of each functional class included.

Consisting of **80 PROJECTS**, the recommended projects contained within the CIP will address approximately **9 MILES** of roads. Together, collectors and arterials make up about 40% of the projects by length and local roads make up about 60%. This distribution of projects reflects a similar distribution of overall roadway classifications in Bondurant. The plan acknowledges that the major corridors experience higher traffic volume and will therefore need more frequent maintenance, but the sheer volume of local roads in the network means that they will make up the majority of the projects.

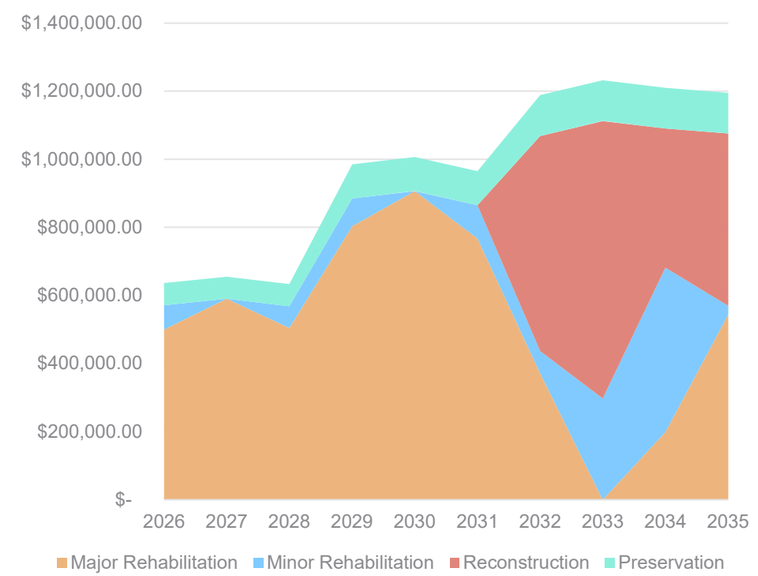


FIGURE 59: TREATMENT TYPE OVER TIME
This area graph shows the treatment distribution for each year of the CIP.

APPENDIX A: CAPITAL IMPROVEMENT PLAN

FIGURE 60: CAPITAL IMPROVEMENT PLAN – LIST OF RECOMMENDED PROJECTS (PHASE 1 - FY2026–FY2028)

Phase	Branch	From Intersection	To Intersection	Recommended Treatment Type	Estimated Cost	Surface Type	Functional Classification	AADT	CityPCI	IRI	SY	Miles
Phase 1	GARFIELD STREET SOUTHWEST	3RD STREET SOUTHWEST	2ND STREET SOUTHWEST	Major Rehabilitation	$ 55,463.29	PCC	7	289	59	291	920	0.06
Phase 1	THIRD STREET NORTHWEST	SHILOH ROSE PARKWAY NORTHWEST	MALLARD POINTE DRIVE NORTHWEST	Major Rehabilitation	$ 129,942.56	PCC	7	77	61	377	2173	0.12
Phase 1	FOURTH STREET NORTHWEST	SHILOH ROSE PARKWAY NORTHWEST	MALLARD POINTE DRIVE NORTHWEST	Major Rehabilitation	$ 141,563.44	PCC	7	98	61	192	2363	0.13
Phase 1	GARFIELD STREET SOUTHWEST	4TH STREET SOUTHWEST	3RD STREET SOUTHWEST	Major Rehabilitation	$ 87,298.89	PCC	7	289	55	304	1464	0.06
Phase 1	4TH STREET SOUTHWEST	GARFIELD STREET SOUTHWEST	4TH STREET SOUTHEAST	Major Rehabilitation	$ 89,419.56	PCC	7	289	60	309	1495	0.07
Phase 1	OLESON DRIVE	BRICK STREET SOUTHEAST	HUBBELL AVENUE	Major Rehabilitation	$ 54,923.53	PCC	7	540	99	N/A	908	0.05
Phase 1	10TH COURT SOUTHEAST	LINCOLN STREET SOUTHEAST	N Dead End	Major Rehabilitation	$ 96,116.18	PCC	7	289	59	319	1605	0.09
Phase 1	WASHINGTON AVENUE	PAINE STREET SOUTHEAST	HUBBELL AVENUE	Major Rehabilitation	$ 53,233.58	PCC	7	370	60	222	886	0.06
Phase 1	LINCOLN STREET SOUTHEAST	S Dead End	LINCOLN STREET NORTHEAST	Major Rehabilitation	$ 97,489.27	PCC	7	289	64	393	1620	0.07
Phase 1	NORTHEAST 2ND STREET	PAINE STREET SOUTHEAST	PLEASANT STREET NORTHEAST	Major Rehabilitation	$ 76,255.84	ACC	5	3130	53	203	1414	0.10
Phase 1	NORTHEAST 2ND STREET	SNYDER STREET SOUTHEAST	PATTERSON STREET SOUTHEAST	Major Rehabilitation	$ 45,619.20	ACC	5	3130	43	170	846	0.06
Phase 1	NORTHEAST 2ND STREET	PLEASANT STREET NORTHEAST	HUBBELL AVENUE	Major Rehabilitation	$ 78,362.31	ACC	5	1630	53	223	1449	0.10
Phase 1	NORTHEAST 2ND STREET	PATTERSON STREET SOUTHEAST	PAINE STREET SOUTHEAST	Major Rehabilitation	$ 45,619.20	ACC	5	3130	60	148	846	0.06
Phase 1	WALNUT DRIVE NORTHWEST	DEER RIDGE DRIVE NORTHWEST	EVERGREEN CIRCLE NORTHWEST	Major Rehabilitation	$ 42,248.87	PCC	7	36	64	240	703	0.04
Phase 1	PATTERSON STREET SOUTHEAST	PAINE STREET SOUTHEAST	NORTHEAST 2ND STREET	Major Rehabilitation	$ 163,891.20	PCC	7	289	33	317	2727	0.19
Phase 1	PAINE STREET SOUTHEAST	PATTERSON STREET SOUTHEAST	NORTHEAST 2ND STREET	Major Rehabilitation	$ 215,424.00	PCC	7	289	65	309	3598	0.20
Phase 1	LINCOLN STREET SOUTHEAST	13TH STREET SOUTHEAST	HUBBELL AVENUE	Minor Rehabilitation	$ 64,178.95	PCC	7	250	78	236	2572	0.16
Phase 1	LINCOLN STREET SOUTHEAST	HUBBELL AVENUE	BRICK STREET SOUTHEAST	Minor Rehabilitation	$ 24,640.00	PCC	7	1090	51	294	988	0.06
Phase 1	LINCOLN COURT	10TH COURT SOUTHEAST	W Dead End	Minor Rehabilitation	$ 29,920.00	PCC	7	289	48	296	1202	0.09
Phase 1	11TH COURT SOUTHEAST	GRANT COURT	LINCOLN STREET SOUTHEAST	Minor Rehabilitation	$ 75,366.64	PCC	7	540	48	320	1675	0.12
Phase 1	LINCOLN STREET SOUTHEAST	BRICK STREET SOUTHEAST	11TH COURT SOUTHEAST	Minor Rehabilitation	$ 44,758.22	PCC	7	1090	49	358	995	0.06
Phase 1	TAILFEATHER DRIVE NORTHWEST	SPRUCE DRIVE NORTHWEST	GRANT STREET NORTH	Minor Rehabilitation	$ 17,160.00	PCC	7	76	86	N/A	688	0.04
Phase 1	Annual Streets Maintenance			Preservation	$ 65,000.00	Varies						
Phase 1	Annual Streets Maintenance			Preservation	$ 65,000.00	Varies						
Phase 1	Annual Streets Maintenance			Preservation	$ 65,000.00	Varies						
Average Annual Cost					$ 642,000.00							

Map *9: Phase 1 Projects - $650,000 Annual Budget*

FIGURE 61: CAPITAL IMPROVEMENT PLAN – LIST OF RECOMMENDED PROTECTS (PHASE 2 – FY2029-FY2031)

Phase	Branch	From Intersection	To Intersection	Recommended Treatment Type	Estimated Cost	Surface Type	Functional Classification	AADT	CityPCI	IRI	SY	Miles
Phase 2	GRANT STREET SOUTH	35TH STREET SOUTHWEST	City Limits	Major Rehabilitation	$ 147,213.04	ACC	4	2220	59	171	2723	0.21
Phase 2	GRANT STREET SOUTH	City Limits	35TH STREET SOUTHWEST	Major Rehabilitation	$ 145,119.96	ACC	4	2220	59	147	2686	0.21
Phase 2	14TH STREET SOUTHEAST	LINCOLN STREET SOUTHEAST	MICHAEL STREET SOUTHEAST	Major Rehabilitation	$ 117,973.39	PCC	7	26	76	250	1972	0.12
Phase 2	NORTHWEST 2ND STREET	DEER RIDGE DRIVE NORTHWEST	BLAINE STREET NORTHWEST	Major Rehabilitation	$ 56,322.78	ACC	5	2870	75	107	1039	0.07
Phase 2	NORTHWEST 2ND STREET	GARFIELD STREET NORTHWEST	GRANT STREET NORTH	Major Rehabilitation	$ 49,472.71	ACC	5	2870	68	122	921	0.07
Phase 2	FIFTH STREET NORTHWEST	SHILOH ROSE PARKWAY NORTHWEST	MALLARD POINTE DRIVE NORTHWEST	Major Rehabilitation	$ 150,109.52	PCC	7	98	73	232	2497	0.14
Phase 2	NORTHWEST 2ND STREET	BLAINE STREET NORTHWEST	GARFIELD STREET NORTHWEST	Major Rehabilitation	$ 100,509.87	ACC	5	2870	64	109	1853	0.13
Phase 2	NORTHEAST 78TH AVENUE	NORTHEAST 2ND STREET	NORTHEAST 78TH AVENUE	Major Rehabilitation	$ 634,145.00	ACC	5	520	84	97	11412	0.88
Phase 2	NORTHEAST 2ND STREET	MAIN STREET NORTHEAST	LINCOLN STREET NORTHEAST	Major Rehabilitation	$ 50,984.24	ACC	5	3130	86	109	941	0.07
Phase 2	SNYDER STREET SOUTHEAST	1ST STREET SOUTHEAST	NORTHEAST 2ND STREET	Major Rehabilitation	$ 129,254.40	PCC	7	289	58	352	2150	0.15
Phase 2	NORTHEAST 2ND STREET	LINCOLN STREET SOUTHEAST	LINCOLN STREET NORTHEAST	Major Rehabilitation	$ 28,865.14	PCC	7	289	67	152	484	0.02
Phase 2	MALLARD POINTE DRIVE NORTHWEST	FOURTH STREET NORTHWEST	FIFTH STREET NORTHWEST	Major Rehabilitation	$ 63,413.24	PCC	7	151	84	191	1062	0.06
Phase 2	LINCOLN STREET SOUTHEAST	15TH STREET SOUTHEAST	14TH STREET SOUTHEAST	Major Rehabilitation	$ 66,569.92	PCC	7	26	80	181	1108	0.06
Phase 2	10TH COURT SOUTHEAST	GRANT COURT	LINCOLN COURT	Major Rehabilitation	$ 63,413.24	PCC	7	300	80	294	1053	0.06
Phase 2	WASHINGTON AVENUE	4TH STREET SOUTHEAST	BRICK STREET SOUTHEAST	Major Rehabilitation	$ 126,799.85	PCC	7	6	73	174	2105	0.12
Phase 2	10TH COURT SOUTHEAST	LINCOLN COURT	LINCOLN STREET SOUTHEAST	Major Rehabilitation	$ 63,074.15	PCC	7	300	55	446	1051	0.06
Phase 2	NORTHWEST 2ND STREET	NORTHEAST 64TH STREET	CREEKSIDE DRIVE SOUTHWEST	Major Rehabilitation	$ 81,422.60	ACC	5	3620	77	121	1513	0.11
Phase 2	NORTHWEST 2ND STREET	CREEKSIDE DRIVE SOUTHWEST	FIRESIDE DRIVE NORTHWEST	Major Rehabilitation	$ 61,637.67	ACC	5	3620	66	141	1145	0.08
Phase 2	NORTHWEST 2ND STREET	FIRESIDE DRIVE NORTHWEST	LANDON DRIVE NORTHWEST	Major Rehabilitation	$ 70,769.17	ACC	5	3620	73	119	1312	0.09
Phase 2	NORTHWEST 2ND STREET	LANDON DRIVE NORTHWEST	SHILOH ROSE PARKWAY NORTHWEST	Major Rehabilitation	$ 140,016.43	ACC	5	3620	87	115	2596	0.18
Phase 2	BLAINE STREET NORTHWEST	NORTH 1ST STREET	NORTHWEST 2ND STREET	Major Rehabilitation	$ 54,594.38	PCC	7	289	72	263	907	0.06
Phase 2	TAILFEATHER COURT NORTHWEST	S Dead End	MALLARD POINTE DRIVE NORTHWEST	Major Rehabilitation	$ 75,023.24	PCC	7	26	69	301	1254	0.07
Phase 2	13TH STREET SOUTHEAST	COVE STREET SOUTHEAST	MICHAEL STREET SOUTHEAST	Minor Rehabilitation	$ 22,595.71	PCC	7	51	72	223	901	0.06
Phase 2	13TH STREET SOUTHEAST	LINCOLN STREET SOUTHEAST	COVE STREET SOUTHEAST	Minor Rehabilitation	$ 27,341.22	PCC	7	51	71	255	1089	0.07
Phase 2	JEFFERSON AVENUE	BRICK STREET SOUTHEAST	9TH STREET SOUTHEAST	Minor Rehabilitation	$ 48,430.50	PCC	7	26	86	220	1937	0.13
Phase 2	10TH COURT SOUTHEAST	GRANT STREET SOUTH	GRANT COURT	Minor Rehabilitation	$ 38,016.00	PCC	7	480	64	266	1518	0.07
Phase 2	9TH COURT SOUTHEAST	W Dead End	LINCOLN STREET SOUTHEAST	Minor Rehabilitation	$ 43,657.17	PCC	7	289	65	303	1741	0.12
Phase 2	Annual Streets Maintenance			Preservation	$ 100,000.00	Varies						
Phase 2	Annual Streets Maintenance			Preservation	$ 100,000.00	Varies						
Phase 2	Annual Streets Maintenance			Preservation	$ 100,000.00	Varies						
Average Annual Cost					$ 986,000.00							

Map *10: Phase 2 Projects - $1,000,000 Annual Budget*

FIGURE 62: CAPITAL IMPROVEMENT PLAN – LIST OF RECOMMENDED PROJECTS (PHASE 3 – FY202032-FY2035)

Phase	Branch	From Intersection	To Intersection	Recommended Treatment Type	Estimated Cost	Surface Type	Functional Classification	AADT	CityPCI	IRI	SY	Miles
Phase 3	ALPHA STREET NORTHWEST	SHILOH ROSE PARKWAY NORTHWEST	MALLARD POINTE DRIVE NORTHWEST	Major Rehabilitation	$ 131,246.80	PCC	7	77	73	203	2181	0.12
Phase 3	1ST STREET NORTHWEST	SHILOH ROSE PARKWAY NORTHWEST	MALLARD POINTE DRIVE NORTHWEST	Major Rehabilitation	$ 125,981.04	PCC	7	77	65	258	2098	0.12
Phase 3	ALPHA STREET NORTHWEST	BLAINE STREET NORTHWEST	NORTH 1ST STREET	Major Rehabilitation	$ 142,889.66	PCC	7	289	64	168	2383	0.16
Phase 3	NORTH 1ST STREET	BLAINE STREET NORTHWEST	ALPHA STREET NORTHWEST	Major Rehabilitation	$ 91,712.37	PCC	7	289	67	288	1527	0.10
Phase 3	GARFIELD STREET SOUTHWEST	2ND STREET SOUTHWEST	1ST STREET SOUTHWEST	Major Rehabilitation	$ 52,040.06	PCC	7	289	67	316	864	0.06
Phase 3	15TH STREET SOUTHEAST	LINCOLN STREET SOUTHEAST	MICHAEL STREET SOUTHEAST	Major Rehabilitation	$ 17,607.39	ACC	4	550	86	57	1754	0.12
Phase 3	15TH STREET SOUTHEAST	ADAMS STREET SOUTHEAST	LINCOLN STREET SOUTHEAST	Major Rehabilitation	$ 72,382.23	ACC	4	550	86	64	1335	0.09
Phase 3	DEER RIDGE DRIVE NORTHWEST	THIRD STREET NORTHWEST	5TH COURT NORTHWEST	Major Rehabilitation	$ 107,938.41	PCC	7	100	48	232	1803	0.10
Phase 3	HENRY STREET SOUTHWEST	S Dead End	32ND STREET SOUTHWEST	Major Rehabilitation	$ 107,563.08	PCC	7	26	85	216	1786	0.12
Phase 3	GRANT STREET SOUTH	15TH STREET SOUTHEAST	HUBBELL AVENUE	Major Rehabilitation	$ 22,852.75	PCC	4	550	70	N/A	377	0.03
Phase 3	11TH COURT SOUTHEAST	LINCOLN STREET SOUTHEAST	N Dead End	Major Rehabilitation	$ 74,389.25	PCC	7	289	67	211	1245	0.09
Phase 3	LINCOLN STREET SOUTHEAST	5TH STREET SOUTHEAST	4TH STREET SOUTHEAST	Major Rehabilitation	$ 53,244.76	PCC	7	170	54	307	886	0.06
Phase 3	LINCOLN STREET SOUTHEAST	4TH STREET SOUTHEAST	3RD STREET SOUTHEAST	Major Rehabilitation	$ 51,543.62	PCC	7	170	42	264	866	0.06
Phase 3	DEER RIDGE DRIVE NORTHWEST	6TH COURT NORTHWEST	MULBERRY DRIVE NORTHWEST	Major Rehabilitation	$ 61,286.59	PCC	7	151	75	249	1020	0.06
Phase 3	MALLARD POINTE DRIVE NORTHWEST	ALPHA STREET NORTHWEST	1ST STREET NORTHWEST	Minor Rehabilitation	$ 25,138.00	PCC	7	151	77	262	995	0.06
Phase 3	32ND STREET SOUTHWEST	WOLF CREEK ROAD SOUTHWEST	POPLAR DRIVE SOUTHWEST	Minor Rehabilitation	$ 181,672.92	PCC	5	1330	N/A	N/A	7249	0.23
Phase 3	32ND STREET SOUTHWEST	POPLAR DRIVE SOUTHWEST	COMMERCE PARKWAY SOUTHWEST	Minor Rehabilitation	$ 212,612.85	PCC	5	1330	N/A	N/A	8496	0.27
Phase 3	32ND STREET SOUTHWEST	COMMERCE PARKWAY SOUTHWEST	GRANT STREET SOUTH	Minor Rehabilitation	$ 88,853.13	PCC	5	1330	N/A	N/A	3539	0.11
Phase 3	32ND STREET SOUTHWEST	HENRY STREET SOUTHWEST	WOLF CREEK ROAD SOUTHWEST	Minor Rehabilitation	$ 107,144.74	PCC	5	1330	N/A	N/A	4286	0.14
Phase 3	32ND STREET SOUTHWEST	HUBBELL AVENUE	HENRY STREET SOUTHWEST	Minor Rehabilitation	$ 51,430.43	PCC	5	2630	N/A	N/A	2059	0.07
Phase 3	PLEASANT STREET SOUTHEAST	COURTYARD DRIVE SOUTHEAST	NORTHEAST 2ND STREET	Minor Rehabilitation	$ 138,738.74	ACC	7	460	83	107	3950	0.28
Phase 3	PLEASANT STREET SOUTHEAST	15TH STREET	13TH STREET SOUTHEAST	Minor Rehabilitation	$ 65,776.00	ACC	7	460	78	102	1883	0.12
Phase 3	NORTHEAST 4TH STREET	4TH STREET NORTHWEST	LINCOLN STREET NORTHEAST	Reconstruction	$ 506,204.66	PCC	7	289	48	379	2242	0.16
Phase 3	MAIN STREET NORTHEAST	RAILROAD STREET	GRAIN STREET	Reconstruction	$ 175,241.18	ACC	7	630	44	416	763	0.05
Phase 3	MAIN STREET NORTHEAST	GRAIN STREET	NORTHEAST 2ND STREET	Reconstruction	$ 233,654.91	ACC	7	630	63	206	1020	0.07
Phase 3	LINCOLN STREET NORTHEAST	NORTHEAST 4TH STREET	FIFTH STREET NORTHWEST	Reconstruction	$ 247,885.84	PCC	7	151	73	370	1078	0.06
Phase 3	LINCOLN STREET NORTHEAST	NORTHEAST 2ND STREET	NORTHEAST 3RD STREET	Reconstruction	$ 320,127.92	PCC	7	289	70	302	1390	0.08
Phase 3	LINCOLN STREET NORTHEAST	NORTHEAST 3RD STREET	NORTHEAST 4TH STREET	Reconstruction	$ 247,187.38	PCC	7	289	66	367	1073	0.06
Phase 3	BRICK STREET SOUTHEAST	FILMORE AVENUE	CLEVELAND AVENUE	Reconstruction	$ 208,011.53	PCC	7	289	44	228	904	0.06
Phase 3	BRICK STREET SOUTHEAST	CLEVELAND AVENUE	JEFFERSON AVENUE	Reconstruction	$ 208,011.53	PCC	7	289	55	230	902	0.06
Phase 3	BRICK STREET SOUTHEAST	JEFFERSON AVENUE	WASHINGTON AVENUE	Reconstruction	$ 215,310.18	PCC	7	289	32	364	934	0.06

Phase	Branch	From Intersection	To Intersection	Recommended Treatment Type	Estimated Cost	Surface Type	Functional Classification	AADT	CityPCI	IRI	SY	Miles
Phase 3	Annual Streets Maintenance			Preservation	$ 120,000.00	Varies						
Phase 3	Annual Streets Maintenance			Preservation	$ 120,000.00	Varies						
Phase 3	Annual Streets Maintenance			Preservation	$ 120,000.00	Varies						
Phase 3	Annual Streets Maintenance			Preservation	$ 120,000.00	Varies						
Average Annual Cost					$ 1,210,000.00							

Map *11: Phase 3 Projects - $1,200,000 Annual Budget*

APPENDIX B: PAVEMENT STANDARDS RECOMMENDATIONS

URBAN PAVEMENT SYSTEM DESIGN

For the purposes of this discussion, the pavement system consists of the elements shown in **Figure 63.**

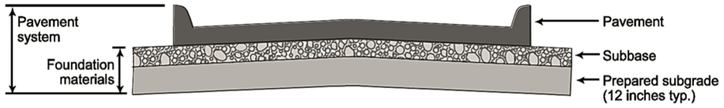


FIGURE 63: ILLUSTRATION PAVEMENT SYSTEM ELEMENTS

This diagram identifies the key elements to a pavement system

Proper design, construction, and maintenance of the various components of the pavement system are critical to the performance of long-life pavements.

PAVEMENT FOUNDATION

It is common for local street and highway pavements to be constructed from PCC supported on a natural subgrade without considering or using a subgrade stabilized treatment or support layer such as an aggregate subbase. When support layers are considered, they typically serve as a construction platform and improve the level of stability and uniformity for the pavement foundation which can result in increased performance and thus increased pavement life. An aggregate subbase can also improve the drainage under the pavement, minimizing the deterioration caused by water entrapment. The question is, how much do they benefit the pavement and is the benefit worth the costs, particularly if the pavement is meeting the design life. [3]

The pavement design life for local roadways (not including heavily traveled arterials or trunk highways) is normally based on the pavement thickness and less concern is typically given to the support system. Unless there are material related distress failures in concrete pavement (i.e. freeze-thaw damage, ASR, D-cracking) the normal mode of failure is the vertical distortions of the pavement surface from subgrade movement. The degradation is normally faulting, slab movement, joint failures, cracking, etc. and is represented by the dropping of the pavement condition index (PCI).[3]

SUBGRADE SOILS

Concrete pavement is relied upon for its durability and strength. For a concrete pavement to provide long term performance, its foundation needs to have uniform support. Typically, in Iowa, the foundation includes the natural subgrade and, in some instances, an aggregate subbase.

Concrete pavement is relied upon for its durability and strength. In order for a concrete pavement to provide long term performance, its foundation needs to have uniform support. Typically, in Iowa, the foundation includes the natural subgrade and, in some instances, an aggregate subbase. If the pavement is placed directly on the natural subgrade, preparation is needed to provide uniformity. At a minimum this includes topsoil removal, scarification of the underlying subgrade to a depth of one foot and compaction to a specified depth, density and moisture content. For additional information, see SUDAS Design Manual Chapter 6.[4]

Typical soils found in the vicinity of Bondurant are moderate to high plasticity soils (fat clays and lean clays with liquid limits greater than 45 and/or plasticity indices greater than 23). These soil types can experience cycles of volume change as moisture contents vary, which can result in upward and downward movement of supported pavements that could cause distortion or structural damage. The soils encountered in Bondurant can be expected to have low k values of 50 to 100 psi/inch and corresponding low CBRs of 1 to 3, as shown in **Table 17,** which indicates subgrade suitability of various soils:

When constructing any pavement (rigid or flexible) on natural subgrade that is subject to poor drainage and/or has poor soils, there will likely be measurable soil breakdown and movement due to freeze-thaw conditions and/or traffic loading.[3]

It should be noted that variability in the soil affects both rigid and flexible pavements. Rigid concrete pavements transfer the traffic load to the aggregate subbase and subgrade foundation at a smaller value than flexible asphalt pavements because they are able to distribute the load to a larger area. For example, a 100-psi tire load typically results in less than 5 psi to the aggregate subbase for concrete pavement and is approximately 20 psi for the aggregate subbase for asphalt pavement. Therefore, asphalt pavement requires a thicker aggregate subbase and/or a thicker pavement to provide additional support and strength as compared to a concrete pavement. Although concrete pavements can perform better than asphalt pavements when subjected to poor support characteristics, they are more rigid and are subject to more tensile cracking.

Table 17 illustrates the subgrade reactions for rigid and flexible pavements.

TABLE 17: SUITABILITY OF SOILS FOR SUBGRADE APPLICATIONS

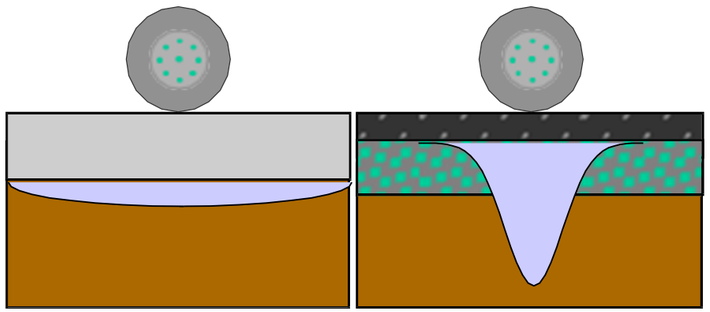
Table 6E-1.01: Suitability of Soils for Subgrade Applications

Subgrade Soils for Design	Unified Soil Classifications	Load Support and Drainage Characteristics	Modulus of Subgrade Reaction (k), psi/inch	Resilient Modulus (M_R), psi	CBR Range
Crushed Stone	GW, GP, and GU	Excellent support and drainage characteristics with no frost potential	220 to 250	Greater than 5,700	30 to 80
Gravel	GW, GP, and GU	Excellent support and drainage characteristics with very slight frost potential	200 to 220	4,500 to 5,700	30 to 80
Silty gravel	GW-GM, GP-GM, and GM	Good support and fair drainage, characteristics with moderate frost potential	150 to 200	4,000 to 5,700	20 to 60
Sand	SW, SP, GP-GM, and GM	Good support and excellent drainage characteristics with very slight frost potential	150 to 200	4,000 to 5,700	10 to 40
Silty sand	SM, non-plastic (NP), and >35% silt (minus #200)	Poor support and poor drainage with very high frost potential	100 to 150	2,700 to 4,000	5 to 30
Silty sand	SM, Plasticity Index (PI) <10, and <35 % silt	Poor support and fair to poor drainage with moderate to high frost potential	100 to 150	2,700 to 4,000	5 to 20
Silt	ML, >50% silt, liquid limit <40, and PI <10	Poor support and impervious drainage with very high frost value	50 to 100	1,000 to 2,700	1 to 15
Clay	CL, liquid limit >40 and PI >10	Very poor support and impervious drainage with high frost potential	50 to 100	1,000 to 2,700	1 to 15

Source: American Concrete Pavement Association; Asphalt Paving Association; State of Ohio; State of Iowa; Rollings and Rollings 1996.

[3] Gross, J., Harrington, D., Wiegand, P., and Cackler, T. Guidance for Improving Foundation Layers to Increase Pavement Performance on Local Roads, Iowa: Report No. TR-640, Iowa Department of Transportation. 2014.

[4] Institute for Transportation, Iowa State University, Statewide Urban Design and Specifications, Design Manual, Rev. 2022



Rigid Pavement Flexible Pavement

FIGURE 64: SUBGRADE REACTION (GROSS)[3]

This diagram shows how loads are distributed differently based on surface type.

STABILIZED SUBGRADES

The need to stabilize subgrades is primarily due to excessive moisture in the subgrade itself.

High moisture in soils may be encountered during construction for reasons ranging from a naturally high water table to seasonal rainfall and even to changes in drainage conditions during construction. Regardless of the cause, in situ wet soils must be addressed before constructing an aggregate subbase or placement of the pavement on the subgrade. Placing subdrains before construction or letting the soil dry out through a natural process is not normally a practical approach because of time constraints. The two most commonly used methods are chemical modification of the soils, particularly in high moisture conditions, and reinforcement/separation.[5]

CHEMICAL STABILIZED SUBGRADE

A stabilized subgrade, such as soil cement or fly ash stabilization, will help to dry out excessive moisture soils and develop the uniformity needed to provide a construction platform and reduce delays during construction. When using chemical stabilizers, the percent of the stabilizer needs to be stipulated when the water content, soil type and freeze- thaw performance are considered. [5]

Cement Modified Soils (CMS) are soils and/or manufactured aggregates mixed with a small portion of Portland cement. CMS are normally used to improve material properties in the subgrade. Also, CMS helps prevent migration of subgrade soil and water into the aggregate subbase and provides some additional strength to the subgrade. CMS are principally used to modify fine grained soils such as silts and clays having high plasticity content. Some specifications require enough cement content to reduce the Plastic Index (PI) within a range of 12 to 15. Typically, a CMS amount equivalent to 3 to 5 percent of the soil's dry weight is incorporated into the mix to achieve the desired strength. This combination allows for the reduction of plasticity, minimization of moisture related volumetric changes, an increase in bearing strength and an improvement in stability. This also provides a weather resistant construction platform.

A successful chemical stabilization can be achieved by incorporating approximately 10 to 15 percent fly ash (measured by dry weight of the native soil) into the existing subgrade. Fly ash can improve the subgrade CBR from 2 to 3 to as much as 25 to 30. It can also improve the unconfined compressive strength from 50 psi to 400 psi. Fly ash stabilized subgrades can also reduce the shrink-swell potential of clay soils and upgrade the condition of marginal soils. It is also a good drying agent for wet soils and provides a working platform during construction.

REINFORCED STABILIZED SUBGRADE

Reinforced subgrade treatment is typically used when subgrades have an unstable (soft) but not extremely high moisture content. This may be accomplished through the use of geosynthetics, such as geogrids and woven geotextiles. [5]

UNSTABILIZED AGGREGATE SUBBASES

Unstabilized aggregate subbases are appropriate when a stable and uniform construction platform will benefit construction. (ACPA 2007) An aggregate subbase support layer can provide a working platform during construction as well as provide uniformity as a support layer. A granular support layer will also serve as a drainage system to help drain surface water away from the pavement as well as provide a cutoff layer from subsurface moisture. If an aggregate subbase is used, a subdrain and outlet will be needed to complete the drainage system due to the poor drainage properties of Iowa soils. [5]

Premature deterioration of PCC pavement joints may be attributed to poorly draining joints, and subsurface drainage will help alleviate the problem (Taylor et al. 2016)[5].

Commonly used Iowa DOT and SUDAS aggregate subbase materials include modified subbase, granular subbase and special backfill. The Iowa DOT and SUDAS specifications for modified subbase and special backfill allow for crushed stone, gravels, and recycled pavement materials meeting material IM210 or uniformly blended combinations of these materials with a maximum of 50 percent (Reclaimed Asphalt Pavement). [6]

The target permeability of approximately 150 feet per day provides the adequate drainage necessary for a pavement foundation layer. Although materials as coarse and open-graded as ASTM No. 57 stone have been used as draining layers, they are not recommended for concrete pavements due to their lack of adequate stability for construction operations and their susceptibility to long-term settlement under heavy truck traffic. It is better to design the gradation of the unstabilized aggregate subbase to include more fines for the sake of stability than to omit the fines for the sake of drainage (ACPA 2007). Therefore, modified subbase is the preferred subbase material for local roadways in Iowa.

In summary, the benefits of aggregate subbases and a drainage system include the following: [5]

- Increases performance and service life
- Provides a construction platform
- Maintains uniform support
- Provides drainage from water infiltration
- Helps reduce shrink and swell of high volume-change soils
- Controls excessive or differential frost heave
- Minimizes mud-pumping of fine-grained soils
- Prevents consolidation of subgrade
- Provides capillary cut off for highwater table

5 Taylor, P., Zhang, J., Wang, X. Conclusions from the Investigation of Deterioration of Joints in Concrete Pavement, Report No. TPF-5(224), Federal Highway Administration, 2016.; ACPA, Subgrades and Subbases for Concrete Pavements, EB204P, American Concrete Pavement Association, 2007.

6 Gross, J., Harrington, D., Wiegand, P., and Cackler, T. Guidance for Improving Foundation Layers to Increase Pavement Performance on Local Roads, Iowa: Report No. TR-640, Iowa Department of Transportation. 2014.

SUBDRAINS

It is known that drainage is also important to the long-term performance of concrete pavement.

Drainage can be achieved with the use of an aggregate subbase with subdrain outlets. It is important to prepare the natural subgrade prior to the placement of the aggregate subbase to achieve the best performance.[5,7]

PAVEMENT FOUNDATION RECOMMENDATIONS

The performance of a pavement depends on the quality of its subgrade and subbase layers. These foundational layers play a key role in mitigating the detrimental effects of climate and the static and dynamic stresses generated by traffic. Therefore, building a stable subgrade and a properly drained subbase is vital for constructing an effective and long-lasting pavement system. [5,7]

In order to determine what soils are present and understand their characteristics, it is essential to complete a geotechnical investigation. It is very important that the conditions of the subgrade are known prior to design in order to select various treatments if necessary, and to specify various materials and preparation to provide uniformity and support for the pavement section. [8]

The subgrade, the layer of soil on which the subbase or pavement is built, provides support to the remainder of the pavement system. It is crucial for highway engineers to develop a subgrade with a California Bearing Ratio (CBR) value of at least 10. Research has shown that if a subgrade has a CBR value less than 10, the subbase material will deflect under traffic loadings in the same manner as the subgrade and cause pavement deterioration[2]. Manipulation, and possibly stabilization, of the on-site soils will be required to achieve this level of support.

The subbase, the layer of aggregate material immediately below the pavement, provides drainage and stability to the pavement. Undrained water in the pavement supporting layers can freeze and expand, creating high internal pressures on the pavement structure. Moreover, flowing water can carry soil particles that clog drains and, in combination with traffic, pump fines from the subbase or subgrade. It is therefore crucial that highway engineers develop a stable, permeable subbase with longitudinal subdrains[2]. According to the MEPDG analysis for low volume roads, PCC pavement systems with aggregate subbase thickness above 5 inches, do not show a significant benefit over thicker sections. Two thickness options to consider include 1) 6" or more to accommodate migration of soil into the aggregate, or 2) 4"-5" with a separation layer of geotextile or stabilized subgrade.[7,8]

Longitudinal subdrains are essential with subbases to provide positive subsurface drainage. Rigid or corrugated plastic pipe meeting SUDAS specifications, minimum 6" in diameter, with perforations, and sufficient outlets to storm sewer structures or daylighted are recommended. In areas, where parallel storm sewer is present, it may be possible to utilize the storm sewer piping, along with porous rock backfill and open joints covered with engineering fabric, to serve as longitudinal subdrains. Also, if sized adequately, the subdrains could also serve as a footing drain collector line for adjacent private properties.

Recommendation:

- Conduct geotechnical investigation in all new developments to determine the suitability of soils to be used for pavement subgrade
- Improve subgrade support to provide a CBR of 10, unless the geotechnical investigation determines subgrade soils are adequate
- Construct drainable subbase, using material meeting requirements of SUDAS modified subbase, and install longitudinal subdrains, unless the geotechnical investigation determines the subgrade soil is free draining

Pavement

PAVEMENT THICKNESS

- It is typical and current practice to use a pre-determined minimum pavement thickness for local roads. These minimum thicknesses are typically 6 or 7 inches. [8]
- Some current thickness design methodologies were developed for facilities with more traffic and may not be applicable for local roads with lower traffic volumes. [8]
- Because local roads do not carry significant levels of heavy traffic and because some thickness design methodologies revert to predetermined minimums, modifying the design parameters for improved foundations with geotextiles and aggregate subbases will not decrease the thickness design significantly. [8]
- It is common for PCC pavements to be designed for 40 to 50 years of service based on a pavement thickness design. Some older pavements were designed for only 20 years. Although pavements are reaching the specified design life, the last 15 to 20 percent of its design life may be at a low level of service including poor rideability. On a PCI scale this may include the lower end of the fair category and possibly the poor category. [8]

The SUDAS pavement thickness tables, SUDAS Design Section 5F-1, provide recommended pavement thicknesses for various calculated ESALs, subgrade conditions, roadway types, and pavement types. The calculated thicknesses are based on the AASHTO *Guide for the Design of Pavement Structures,* which is used throughout the industry for pavement thickness design. Due to established policies in many jurisdictions across the state, the minimum pavement thickness for streets on natural subgrade was set at 7 inches for rigid pavement and 8 inches for flexible pavement. For pavements with a granular subbase, the minimum thickness was set at 6 inches for both pavement types. As noted in the thickness tables, whenever a thickness was calculated that was less than the minimum, the minimum was used. [8]

PCC PAVEMENT JOINTING

Proper jointing is critical to the performance of PCC pavements. A well-designed jointing system will:

- Control cracking
- Divide the pavement into practical construction increments
- Accommodate slab movement
- Provide load transfer

[7] Schaefer, V., Stevens, L., White, D., Ceylan, H. Design Guide for Improved Quality of Roadway Subgrades and Subbases, Iowa: Report No. TR-525, Iowa Department of Transportation, 2008.

[8] Tay[8] Taylor, P., Zhang, J., Wang, X. Conclusions from the Investigation of Deterioration of Joints in Concrete Pavement, Report No. TPF-5(224), Federal Highway Administration, 2016.; ACPA, Subgrades and Subbases for Concrete Pavements, EB204P, American Concrete Pavement Association, 2007.

LOAD TRANSFER[9]

For jointed concrete pavements to perform adequately, traffic loadings must be transferred effectively from one side of the joint to the other. This is called load transfer. Adequate load transfer results in lower deflections, which reduces faulting, spalling, and corner breaks, thereby increasing pavement life. Load transfer across joints for street pavements is developed either by aggregate inter-lock or dowel bars.

Aggregate interlock is the interlocking action between aggregate particles at the face of the joint. It relies on the shear interaction between aggregate particles at the irregular crack faces that form below the saw cut. This form of load transfer has been found to be most effective on roadways with short spacings and low truck volumes. Studies have found that aggregate interlock load transfer provides acceptable pavement performance when truck semi-trailer volumes are fewer than 80 to 120 trucks per day per lane. Laboratory and field studies have shown that aggregate interlock load transfer is improved with subgrade strength; size, angularity, and durability of the aggregate; joint face roughness; and slab thickness. Furthermore, these studies found that shorter slabs increase aggregate interlock effectiveness by reducing the movement and opening at each joint.

DOWEL BARS[9]

Dowel bars are round, smooth, steel bars placed across transverse joints to transfer loads without restricting horizontal joint movements due to thermal and moisture contractions and expansions. They also keep slabs in horizontal and vertical alignment. Dowels reduce deflections and stresses due to traffic loads. This in turn prevents or reduces faulting, pumping, and corner breaking on roadways that carry a large number of trucks and/or have longer joint spacings. The use of dowel bars for minimizing faulting and pumping should be considered when the slabs are longer than 20 ft (6.0 m), when truck semi-trailer traffic exceeds 80 to 120 per day per lane, or when the accumulated design traffic exceeds four to five million AASHTO ESAL's per lane. Typically, this truck traffic level requires an 8-in.-thick slab or greater. Since most residential city streets do not experience these truck traffic levels and recommended joint spacings are not greater than 15 ft., dowels are generally not necessary.

TRANSVERSE CONTRACTION JOINTS[9]

TABLE 18: TRANSVERSE JOINT REQUIREMENTS (SUDAS 5G-2.01)

Pavement Thickness	Transverse Joint Type	Transverse Joint Spacing
6”	C	12’
7”	C	15’
8”	CD[1]	15’
9”	CD[1]	15’
≥ 10”	CD[1]	17’

[1] No dowels within 24” of the back of curb

Contraction joints constructed transversely across pavement lanes are spaced to control natural initial and mature cracking of the concrete pavement. The joint interval is designed so that intermediate (random) transverse cracks do not form.

Joint spacing for jointed plain (unreinforced) concrete pavements (JPCP) depends on slab thickness, concrete aggregate, subgrade/subbase support, and environmental conditions. Transverse joint spacing should be limited to 24T (T is slab thickness) for pavements on subgrades and granular subbases or 21T if the pavement is placed on stabilized subbases, existing concrete, or asphalt. Transverse joint spacing is12 feet for pavements 6 inches thick, 15 feet for pavements 7 to 9 inches thick, and 20 feet for pavements over 9 inches thick. Longitudinal joint spacing for two lane streets, where lane delineation is not necessary, should be limited to a maximum of 10 feet. Generally, transverse joint spacing should not exceed 150% of the longitudinal joint spacing. SUDAS Table 5G-2.01 provides transverse and longitudinal joint spacings for standard two-lane streets.

LONGITUDINAL CONTRACTION JOINTS[9]

Longitudinal contraction joints release stresses from restrained warping and dynamic loading. A longitudinal joint is usually placed at the center of the pavement to allow the pavement to hinge due to lane loading and help delineate separation of opposing traffic. Controlling cracking and proper constructability are the primary functions of longitudinal contraction joints. Lane delineation is a secondary function.

An important consideration when establishing the distance between longitudinal joints for jointed plain concrete pavements is the prevention of random longitudinal cracking at the quarter point, which is the midpoint between the centerline and the back of the curb. Pavements less than 9 inches thick may not crack through a longitudinal joint placed close to the gutter, which could cause longitudinal cracks at the quarter point. Quarter point jointing will address this concern. Gutterline jointing, with a longitudinal joint closer than five feet from the edge of pavement, is discouraged unless widening is imminent in the future and the pavement thickness is at least 9 inches.

The following are the longitudinal jointing options provided by SUDAS Design Section 5G-2 for 26’ B-B and 31’ B-B standard width pavements:

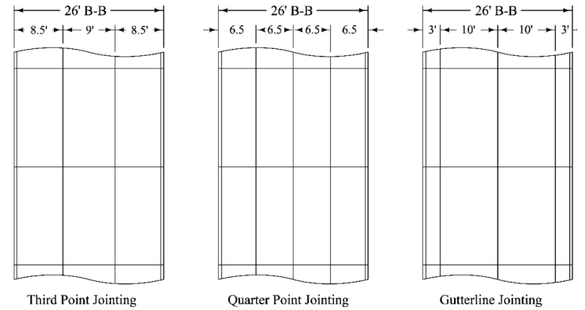


FIGURE 65: 26 FOOT B-B PAVEMENT (SUDAS 5G-2.04)

Jointing options for a 26’ wide pavement

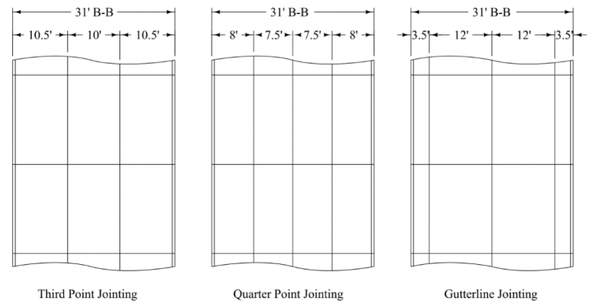


FIGURE 66: 31 FOOT B-B PAVEMENTS (SUDAS 5G-2.05)

Jointing options for a 31’ wide pavement.

[9] ACPA, Design and Construction of Joints for Concrete Streets, American Concrete Pavement Association, 1992.

PCC PAVEMENT MIX[10]

Municipalities in Iowa typically specify concrete mixes in the following way. If the city does not have joint deterioration concerns, then they often continue using their default Class C mix. SUDAS Section 7010 refers to Iowa DOT IM 529 and simply indicates that cities should use Iowa DOT Class C (or M) mix as described.

If the city has concerns with joint deterioration, then they should consider one of two high-durability mixes: C-SUD or CV-SUD. These mixes are identified in Iowa DOT IM 529. The C-SUD and CV-SUD mixes have the SUD designation for SUDAS. The “V” designation refers to the use of a Class V aggregate as specified in Iowa DOT Section 4117. While a conventional Class C concrete has a target w/c ratio of 0.43 and max of 0.488, the C-SUD mix has a target of 0.40 and max of 0.45. As a result, a C-SUD mix provides a more durable concrete pavement with lower permeability than conventional Class C mix due to its lower w/c ratio. With slip-form paving operations, however, the w/c ratio will typically be lower than the target w/c ratio during production with any mix design. The higher durability is desired to reduce joint deterioration due to the use of deicing chemicals. A joint saturated with de-icing salts limits the ability to allow the joint to dry out. To maintain the lower w/c ratio, a low- or mid-range water reducer may be necessary. For even greater durability, the use of ternary mixes should also be considered. Further references for mix proportioning in C-SUD and CV-SUD can be found in the Proportion Table 4 of Iowa DOT Materials IM 529. Note that these mixtures assume a basic w/c ratio of 0.40 and a maximum w/c ratio of 0.45.

The above mixture is based on Type I or Type II cements (Sp. G. = 3.14). Mixes using blended cements (Type IP or IS) must be adjusted for cement gravities listed in IM 401. Use proportions listed above if not utilizing three aggregates. The above mixture is based on Type IP cements.

[10] Weiss, J., Ley, M.T., Sutter, L. Harrington, D., Gross, J. Guide to the Prevention and Restoration of Early Joint Deterioration in Concrete Pavements, Iowa: Report No. TR-697, Iowa Department of Transportation, 2016.

Current Design Standards

The City of Bondurant does not have a formally adopted design standard for pavements. However, guidance provided to designers includes the following:

- Jointed plain concrete pavement (JPCP), 7” thick
- Standard Class C mix
- Jointing is determined by designer
- The required pavement foundation consists of prepared subgrade utilizing on-site soils
- The typical cross-section shown in **Figure 67**

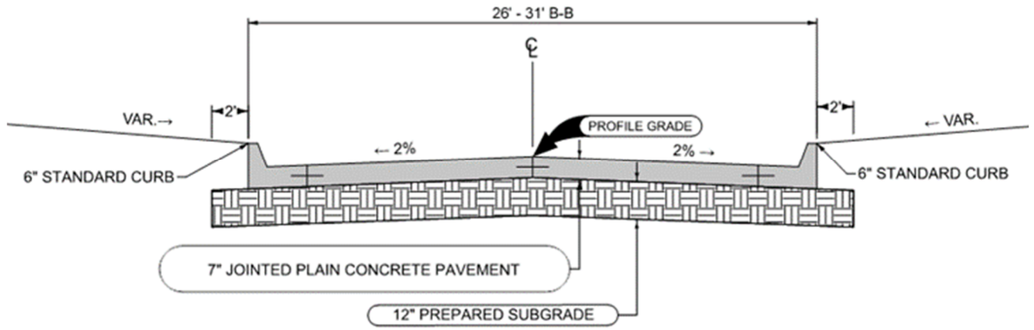


FIGURE 67: CURRENT DESIGN STANDARD

This diagram identifies the elements of the standard Bondurant pavement. A simple slab placed directly on a prepared subgrade.

PAVEMENT FOUNDATION RECOMMENDATIONS

Geotechnical Investigation: Conduct geotechnical investigations in all new developments to determine the suitability of soils to be used for pavement subgrade.

Subgrade: Improve subgrade support to provide a CBR of 10, unless the geotechnical investigation determines subgrade soils are adequate.

Subbase and Subdrain: Construct drainable subbases, using material meeting requirements of SUDAS modified subbase, and install longitudinal subdrains, unless the geotechnical investigation determines the subgrade soil is free draining. The depth of the subbase should be 6” on the prepared subgrade or 4” with an appropriate geotextile between the prepared subgrade and the subbase material.

PAVEMENT RECOMMENDATIONS

For the purposes of this discussion, the recommendations are for typical low-volume local streets, which have little truck traffic, not exceeding 85 trucks/day.

Pavement Thickness: The SUDAS pavement thickness design table for local low volume streets indicates a 6”-thick JPCP with an adequate foundation will perform satisfactorily and provide a 50-year life, according to the AASHTO design guide. However, experience across Iowa has shown 7” pavement will outperform the thinner pavement and is the standard thickness for most jurisdictions and is the recommended thickness of JPCP.

Pavement Jointing: Transverse joint spacing for 7”-thick JPCP paving should not exceed 15 feet, and ‘C’ joints, without dowels, is recommended because of the low truck volumes expected. Either quarter-point or third-point longitudinal jointing is recommended for 26’-wide pavements. Quarter-point jointing is recommended for 31’-wide pavements.

Pavement Mix: A Class C-SUD concrete mix is recommended. To help prevent early pavement joint deterioration, special attention should be given to maintaining adequate air content in the pavement after placement, in the range of 6% to 8%. Also, a water to cement ratio (w/c) of 0.40, with 0.45 maximum, is required. Supplementary cementitious materials (SCMs) are encouraged, and cement replacement rates of 20-25% Class F fly ash or 30-35% Class C fly ash or a combination of 20% slag and 20% Class C fly ash should be considered.

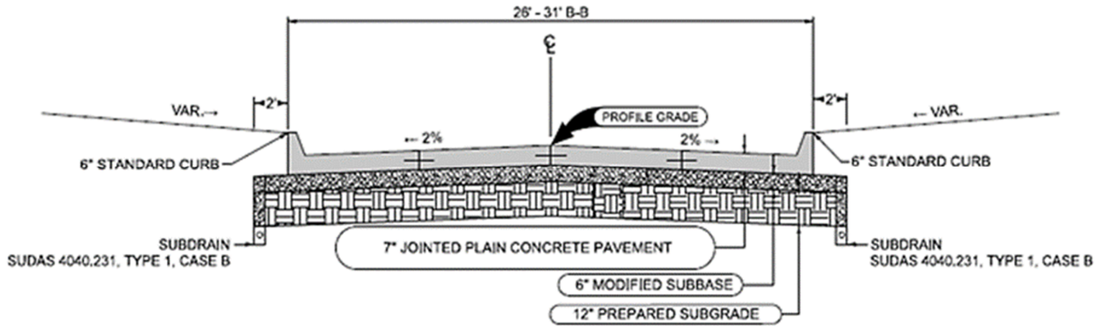


FIGURE 68: RECOMMENDED DESIGN STANDARD (SUDAS)

This diagram identifies the elements of the proposed SUDAS pavement standard. Prepared subgrade, aggregate subbase, subdrain, and a slab designed for the conditions.

RECOMMENDED VS. CURRENT STANDARDS BENEFIT/COST COMPARISON

The following cost comparison and the benefits of the recommended higher standard of design will focus only on the costs associated with the pavement system, as previously defined, and will not include all other development infrastructure costs, such as site grading, storm sewer, water main, sanitary sewer, etc. In addition, no cost benefit has been determined for other benefits of long-lasting pavements, such as prolonged higher service level and less inconvenience to the adjoining properties and traveling public.

The additional costs from the recommendations are for the drainable subbase and the subdrain. Other recommendations, such as the geotechnical investigation, subgrade CBR of 10, and the Class C-SUD concrete mix are either required or recommended by SUDAS and should not add cost to the paving system.

ADDITIONAL COSTS DUE TO RECOMMENDED PAVEMENT SYSTEM STANDARDS

To determine the relative costs of the pavement system using the current Bondurant pavement design standards and the recommended standards, two representative residential street segments were used.

- A two-block segment of 26'-wide street paving, 900'-long from center of intersection to center of intersection
- A one-block segment of 26'-wide street paving, 870'-long from center of intersection to center of intersection

As previously mentioned, only pavement system costs were compared, which included excavation (for the pavement only), subgrade preparation, subbase and subdrains (for the recommended standard), and pavement. **Table 19 & Table 21** determine the estimated cost per square yard of the pavement system, including pavement and pavement foundation.

TABLE 19 CURRENT STANDARD COST COMPARISON – TWO-BLOCK 900' SEGMENT

Item No.	Item	Unit	Unit Price	Quantity	Total Cost
1	Excavation, Class 10	CY	$10.00	1136	$11,360.00
2	Subgrade Preparation	SY	$4.00	3408	$13,632.00
3	PCC Pavement, 7"	SY	$74.00	3009	$222,666.00
				Total	$247,658.00
				Cost/SY	**$82.31**

TABLE 20: RECOMMENDED STANDARD COST COMPARISON – TWO-BLOCK 900' SEGMENT

Item No.	Item	Unit	Unit Price	Quantity	Total Cost
1	Excavation, Class 10	CY	$10.00	1704	$17,040.00
2	Subgrade Preparation	SY	$4.00	3408	$13,632.00
3	Subbase, Modified, 6"	SY	$10.00	3408	$34,080.00
4	PCC Pavement, 7"	SY	$74.00	3408	$222,666.00
5	Subdrains, PVC, 6" *	LF	$20.00	1112	$22,240.00
6	Subdrain Cleanout	EA	$800.00	3	$2,400.00
7	Subdrain Outlets and Connections	EA	$500.00	3	$1,500.00
				Total	$313,558.00
				Cost/SY	**$104.21**

TABLE 21: CURRENT STANDARD COST COMPARISON– ONE-BLOCK 870' SEGMENT

Item No.	Item	Unit	Unit Price	Quantity	Total Cost
1	Excavation, Class 10	CY	$10.00	1035	$10,350.00
2	Subgrade Preparation	SY	$4.00	3104	$12,416.00
3	PCC Pavement, 7"	SY	$74.00	2718	$201,132.00
				Total	$223,898.00
				Cost/SY	**$82.38**

TABLE 22: RECOMMENDED STANDARD COST COMPARISON– ONE-BLOCK 870' SEGMENT

Item No.	Item	Unit	Unit Price	Quantity	Total Cost
1	Excavation, Class 10	CY	$10.00	1552	$15,520.00
2	Subgrade Preparation	SY	$4.00	3104	$12,416.00
3	Subbase, Modified, 6"	SY	$10.00	3104	$31,040.00
4	PCC Pavement, 7"	SY	$74.00	2718	$201,132.00
5	Subdrains, PVC, 6" *	LF	$20.00	1187	$23,740.00
6	Subdrain Cleanout	EA	$800.00	2	$1,600.00
7	Subdrain Outlets and Connections	EA	$500.00	4	$2,000.00
				Total	$287,448.00
				Cost/SY	**$105.76**

COST COMPARISON

COST OF PAVEMENT SYSTEMS

The following is a comparison of the costs of the current design standards and the recommended design standards for two similar sections of pavement in a residential area, as previously described:

Example 1: Two-block 900' Segment

Additional pavement system cost due to recommended design standards

$104.21 - $82.31 = +$21.90/SY

Percent increase in pavement system cost due to recommended design standards

$21.90 / $82.31 = +26.6%

COST OF RESIDENTIAL LOTS

Another way to look at this additional cost is how it might affect the cost of each residential development lot. As an illustration, a normal residential lot is presumed to be 70'± wide and 140'± deep and corner lots are 90' wide. Using the two street pavement examples illustrated in Section 6.1, the following costs are calculated:

Example 1: Two-block 900' segment

As many as 20 lots or as few as 12 lots could front on the street segment, depending on orientation. Assuming an average of 16 lots, the additional cost per lot for the improved standards would be $65,900 / 16 lots = $4,118.75/lot.

Example 2: One-block 870' segment

As many as 22 lots or as few as 18 lots could front on the street segment, depending on orientation. Assuming an average of 20 lots, the additional cost per lot for the improved standards would be $63,550 / 20 lots = $3,177.50/lot.

An estimated per lot additional cost due to the recommended standards ranges from $3,177.50 to $4,118.75, or an average of $3,648.13.

Example 2: One-block 870' Segment

Additional pavement system cost due to recommended design standards

$105.76 - $82.38 = +$23.38/SY

Percent increase in pavement cost due to recommended design standards

$23.38 / $82.38 = +28.4%

Averages of the two examples yield the following results due to the recommended design standards:

Additional pavement system cost +$22.64

Percent increase in pavement system cost +27.5%

LIFE BENEFIT OF RECOMMENDED STANDARDS

As indicated in previous discussions, improved pavement foundations and subsurface drainage will substantially increase the expected life of a pavement. It is also expected that improved jointing and concrete mixtures with provide additional longevity and improved service. Properly designed and maintained PCC pavements should be expected to provide at least 50 years of good service, as opposed to the expected life of 30 to 35 years for the current design standards. Therefore, a conservative estimate of the additional pavement life for the recommended pavement system standards is 15 years.

Additional pavement life due to recommended design standards

50 years – 35 years =	+15 years

Percent increase in pavement life due to recommended design standards

15 years / 35 years =	+42.8%

Benefit/Cost Ratio

Life Benefit Increase % / Additional Cost % = 42.8% / 27.5% =	1.56:1

FUTURE RECONSTRUCTION SAVINGS

As would be anticipated with additional expected life, pavements constructed at the higher recommended design standards should require reconstruction less frequently. As an illustration, over a period of 100 years, it would be expected that pavement constructed with the recommended design standards would require only one pavement reconstruction to last that period of time. On the other hand, pavement constructed at the current design standard would require two reconstructions to serve for a similar length of time.

Based on present costs and the cost of removing and replacing only the pavement in the future, and not including other associated work, such as excavation, intakes, drives, design, and other associated costs, the following assumptions using an average of the two previous pavement examples of similar length are made:

- Number of residential lots: 18
- Total area of pavement: 2,864 SY
- Area of pavement per lot: 159 SY
- Initial cost of pavement with current design: $82.35/SY
- Initial cost of pavement with recommended design: $104.99/SY
- Cost to remove and replace pavement = $12 + $74 = $86/SY

the following conservative costs could be expected:

Costs for pavement constructed with <u>current</u> design standards to serve for 100 years

Initial pavement system cost:	
2,864 SY @ $82.35 =	$235,850
Initial pavement system cost per residential lot:	
$235,850 / 18 lots =	$13,103
Pavement reconstruction cost at 35 years:	
2,864 SY @ $86.00 =	$246,304
Pavement reconstruction cost per residential lot at 35 years:	
$246,304 / 18 lots =	$13,684
Pavement reconstruction cost at 70 years:	
2,864 SY @ $86.00 =	$246,304
Pavement reconstruction cost per residential lot at 70 years:	
$246,304 / 18 lots =	$13,684
Total pavement costs with current design standards for 100 years:	
Pavement system initial cost and pavement reconstruction costs	$728,458
Pavement system initial cost and pavement reconstruction costs per lot	$40,470

Cost for pavement constructed with <u>recommended</u> design standards to serve for 100 years

Initial pavement system cost:	
2,864 SY @ $104.99 =	$300,691
Initial pavement system cost per residential lot:	
$300,691 / 18 lots =	$16,705
Pavement reconstruction cost at 50 years:	
2,864 SY @ $86.00 =	$246,304
Pavement reconstruction cost per residential lot at 50 years:	
$246,304 / 18 lots =	$13,684
Total pavement costs with recommended design standards for 100 years:	
Pavement system initial cost and pavement reconstruction costs	$546,995
Pavement system initial cost and pavement reconstruction costs per lot	$30,388

For each residential lot, an initial investment of approximately $3,648 more for longer lasting pavement using the recommended design standards will reduce future reconstruction costs by an estimated $10,082 in present day dollars.

FIGURE 69: PROJECTED PAVEMENT CONSTRUCTION & RECONSTRUCTION TIMELINE -100-YEAR CYCLE (AVERAGE STREET SEGMENT)

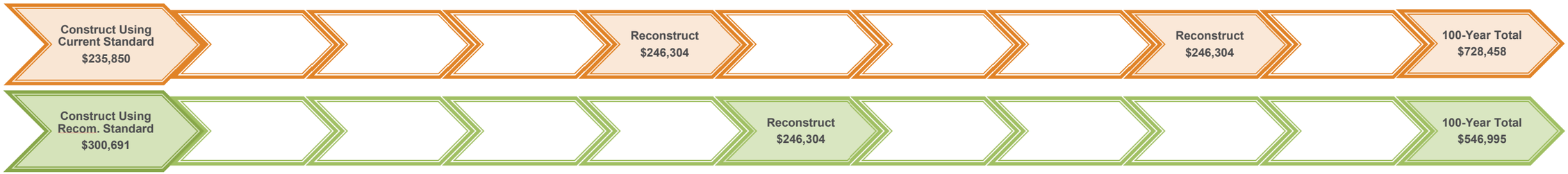
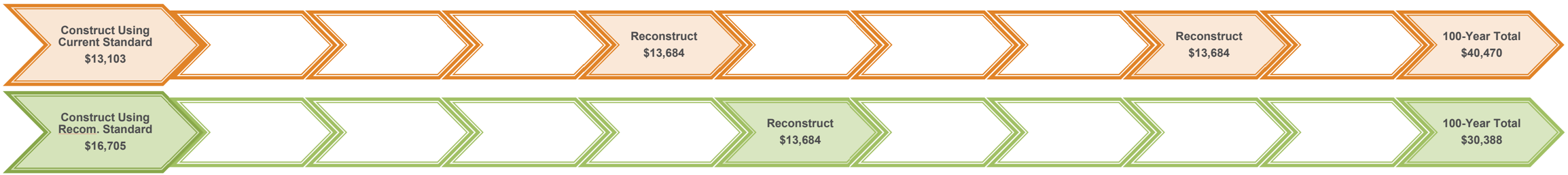


FIGURE 70: PROJECTED PAVEMENT CONSTRUCTION & RECONSTRUCTION TIMELINE -100-YEAR CYCLE (PER LOT)



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Pavement Management Study
City of Bondurant, Iowa

Interim Report #1

PCC Pavement Design Standards Review and Recommendations

September, 2023

HR Green Project No: 2302984

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.

Date:

LARRY J. STEVENS, P.E.

License No. **09350**

My renewal date is **December 31**, **2023**

Pages or sheets covered by this seal:

ALL

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EXECUTIVE SUMMARY

This report provides research, data, and practical experience for the proper design of a pavement system, which includes the pavement foundation and the pavement. Recommendations are made to improve the City of Bondurant's design standards for local low-volume residential street pavements with little truck traffic to provide longer lasting pavements that are more sustainable and provide better service to City residents. In addition, a benefit/cost analysis was performed to compare the City's current standards with the recommended standards.

It should be noted that while these recommendations are for improvements to the City of Bondurant's residential street design standards, the need for quality pavement systems are essential for long-lasting performance of all of the City's street pavements, including arterial and collector streets. Those pavements that serve higher volumes of traffic and heavy trucks should have special designs to accommodate those conditions.

BACKGROUND

The pavement system is defined as the pavement and the foundation materials, including subbase, if required, and prepared subgrade. Proper design, construction, and maintenance of the various components of the pavement system are critical to the performance of long-life pavements.

The performance of a pavement depends on the quality of its subgrade and subbase layers. These foundational layers play a key role in mitigating the detrimental effects of climate and the static and dynamic stresses generated by traffic. Therefore, building a stable subgrade and a properly drained subbase is vital for constructing an effective and long lasting pavement system.

Key factors in the design of concrete pavements include thickness, proper jointing, concrete mixture selection, and quality control.

The City of Bondurant's current local residential street pavement design standards include a prepared (compacted) subgrade consisting of in-place soils, which are generally poor quality pavement subgrade materials and do not provide adequate subsurface drainage. Pavement is standard Portland Cement Concrete, Iowa DOT Class C mix, 7"-thick jointed plain concrete pavement (JPCP). Pavement systems with this type of foundation are frequently specified in Iowa but have a shorter expected life, about 30 to 35 years, than design standards currently recommended by the Iowa Statewide Urban Design and Specifications Program (SUDAS) and other Industry standards. SUDAS provides design standards for the pavement and the pavement foundation, which are projected to have a life of at least 50 years.

RECOMMENDED BONDURANT PAVEMENT SYSTEM STANDARDS

Based on SUDAS guidelines and other supporting research, the following pavement system design standards are recommended for local low volume residential streets in Bondurant:

Pavement Foundation:

- Conduct geotechnical investigations in all new developments to determine the suitability of soils to be used for pavement subgrade.
- Improve subgrade support to provide a CBR of 10, unless the geotechnical investigation determines subgrade soils are adequate.
- Subbase and Subdrain: Construct drainable subbases and install longitudinal subdrains, unless the geotechnical investigation determines the subgrade soil is free draining.

Pavement:

- Pavement Thickness: Require 7"-thick JPCP.
- Pavement Jointing: For JPCP paving, transverse joint spacing should not exceed 15 feet and 'C' joints, without dowels, is recommended. Quarter-point jointing is recommended for 31'-wide streets. Third point jointing is recommended for 26'-wide streets.

- Pavement Mix: A Class C-SUD concrete mix is recommended. To help prevent early pavement joint deterioration, special attention is given to maintaining adequate air content in the pavement after placement and low water to cement ratio (w/c). Supplementary cementitious materials (SCMs) are encouraged as a cement replacement to reduce the pavement's permeability.

BENEFIT/COST ANALYSIS OF RECOMMENDED STANDARDS

Pavement system quantities, which included excavation (for the pavement only), subgrade preparation, subbase and subdrains (for the recommended standard), and pavement, were estimated for two typical sections of residential street using the current street pavement standards and the recommended standards. One typical section consisted of two consecutive blocks of paving with an intersection in the middle, and the other was a similar length pavement without an intersecting street.

For each typical section, the additional cost of the recommended standards was calculated on the basis of square yards of pavement. Using an average cost of the two pavement examples, the pavement system cost increased by 27.5% due to the recommended design standards.

However, the life expectancy of the pavement is conservatively estimated to increase from 35 years to 50 years, an increase of 42.8%. Therefore, the benefit/cost ratio is over 1.6:1, based on the pavement system cost increase compared to the increase in pavement longevity.

In addition, an estimate was provided how this may affect the cost of a residential lot. An increase of approximately $3,602 per lot could be expected due to the higher pavement system design standard.

Further analysis was conducted for a 100-year cycle of pavement construction and reconstruction, which includes three pavement constructions for the current design standards and two for the recommended standards. This long-term analysis indicates the total cost of pavement construction over this period reduces from $728,458 for current design to $546,995 with the recommended standards. Average per lot costs for the pavement are reduced from $40,470 to $30,388. For each residential lot, an initial investment of approximately $3,602 more for longer lasting pavement using the recommended design standards will reduce future reconstruction costs by an estimated $10,082 in present day dollars.

1. PURPOSE

Interim Report #1 will address a portion of the first task of the City of Bondurant's Pavement Management Study, which includes the following work task:

- *Review of Bondurant's design standards for street construction and maintenance practices and making recommendations for improvements to achieve long-lasting pavements*

The City wishes to implement improved long-lasting PCC pavement design standards. Interim Report #1 will address only residential street design standards identified in the first task, which includes the following scope of services to be provided by HR Green:

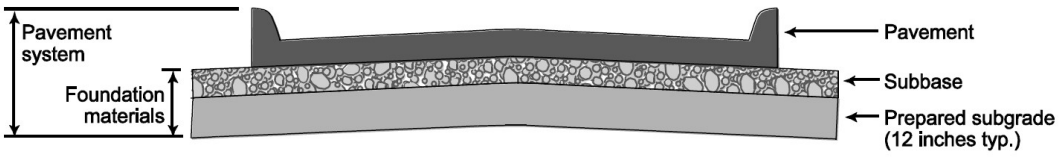
> The City's current pavement design requirements will be compared to the standards established by the Iowa Statewide Urban Design and Specifications (SUDAS) Program. Other relevant Iowa State University research, such as IHRB Project TR-640 *Optimizing Pavement Base, Subbase, and Subgrade Layers for Cost and Performance of Local Roads*, will be utilized in the comparison, in addition to a number of other sources. This will include analyzing all elements of the pavement system, including subgrade, subbase, subsurface drainage, pavement thickness, PCC mixtures, pavement jointing, and construction methods. Recommendations will be made to the City's guidelines to help achieve a 50-year design life of the City's pavements.

The comparison of the City's current PCC pavement design guidelines to recommended design standards will consist of the following for Pavement System Design for Urban Local Streets:

- PCC pavement foundation
- PCC pavement
- Current Bondurant design standards for PCC pavement systems
- Recommended Bondurant design standards for PCC pavement systems
- Recommended vs. Current standards cost/benefit comparison

2. PCC PAVEMENT SYSTEM DESIGN FOR URBAN LOCAL STREETS

For the purposes of this discussion, the pavement system consists of the elements shown in the following illustration from Iowa Statewide Urban Design and Specifications (SUDAS) Design Manual Section 6A-1:



Proper design, construction, and maintenance of the various components of the pavement system are critical to the performance of long-life pavements.

2.1 PCC PAVEMENT FOUNDATION

It is common for local street and highway pavements to be constructed from PCC supported on a natural subgrade without considering or using a subgrade stabilized treatment or support layer such as an aggregate subbase. When support layers are considered, they typically serve as a construction platform and improve the level of stability and uniformity for the pavement foundation which can result in increased performance and thus increased pavement life. An aggregate subbase can also improve the drainage under the pavement, minimizing the deterioration caused by water entrapment. The question is how much do they benefit the pavement and is the benefit worth the costs, particularly if the pavement is meeting the design life.[1]

The pavement design life for local roadways (not including heavily traveled arterials or trunk highways) is normally based on the pavement thickness and less concern is typically given to the support system. Unless there are material related distress failures in concrete pavement (ie. freeze-thaw damage, ASR, D-cracking) the normal mode of failure is the vertical distortions of the pavement surface from subgrade movement. The degradation is normally faulting, slab movement, joint failures, cracking, etc. and is represented by the dropping of the pavement condition index (PCI).[1]

2.1.1 SUBGRADE SOILS

Concrete pavement is relied upon for its durability and strength. In order for a concrete pavement to provide long term performance, its foundation needs to have uniform support. Typically in Iowa, the foundation includes the natural subgrade and in some instances, an aggregate subbase. If the pavement is placed directly on the natural subgrade, preparation is needed to provide uniformity. At a minimum this includes topsoil removal, scarification of the underlying subgrade to a depth of one foot and compaction to a specified depth, density and moisture content. For additional information, see SUDAS Design Manual Chapter 6.[1]

Typical soils found in the vicinity of Bondurant are moderate to high plasticity soils (fat clays and lean clays with liquid limits greater than 45 and/or plasticity indices greater than 23). These soil types can experience cycles of volume change as moisture contents vary, which can result in upward and downward movement of supported pavements that could cause distortion or structural damage. The soils encountered in Bondurant can be expected to have low k values of 50 to 100 psi/inch and corresponding low CBRs of 1 to 3, as shown in the following table from SUDAS Design Section 6E-1, which indicates subgrade suitability of various soils:

TABLE 1: SUITABILITY OF SOILS FOR SUBGRADE APPLICATIONS

Table 6E-1.01: Suitability of Soils for Subgrade Applications

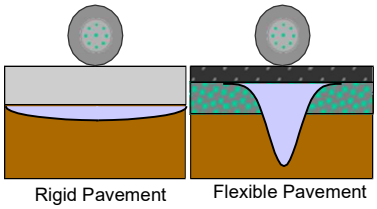
Subgrade Soils for Design	Unified Soil Classifications	Load Support and Drainage Characteristics	Modulus of Subgrade Reaction (k), psi/inch	Resilient Modulus (M_R), psi	CBR Range
Crushed Stone	GW, GP, and GU	Excellent support and drainage characteristics with no frost potential	220 to 250	Greater than 5,700	30 to 80
Gravel	GW, GP, and GU	Excellent support and drainage characteristics with very slight frost potential	200 to 220	4,500 to 5,700	30 to 80
Silty gravel	GW-GM, GP-GM, and GM	Good support and fair drainage, characteristics with moderate frost potential	150 to 200	4,000 to 5,700	20 to 60
Sand	SW, SP, GP-GM, and GM	Good support and excellent drainage characteristics with very slight frost potential	150 to 200	4,000 to 5,700	10 to 40
Silty sand	SM, non-plastic (NP), and >35% silt (minus #200)	Poor support and poor drainage with very high frost potential	100 to 150	2,700 to 4,000	5 to 30
Silty sand	SM, Plasticity Index (PI) <10, and <35 % silt	Poor support and fair to poor drainage with moderate to high frost potential	100 to 150	2,700 to 4,000	5 to 20
Silt	ML, >50% silt, liquid limit <40, and PI <10	Poor support and impervious drainage with very high frost value	50 to 100	1,000 to 2,700	1 to 15
Clay	CL, liquid limit >40 and PI >10	Very poor support and impervious drainage with high frost potential	50 to 100	1,000 to 2,700	1 to 15

Source: American Concrete Pavement Association; Asphalt Paving Association; State of Ohio; State of Iowa; Rollings and Rollings 1996.

When constructing any pavement (rigid or flexible) on natural subgrade that is subject to poor drainage and/or has poor soils, there will likely be measurable soil breakdown and movement due to freeze-thaw conditions and/or traffic loading.[1]

It should be noted that variability in the soil affects both rigid and flexible pavements. Rigid concrete pavements transfer the traffic load to the aggregate subbase and subgrade foundation at a smaller value then flexible asphalt pavements because they are able to distribute the load to a larger area. For example, a 100 psi tire load typically results in less than 5 psi to the aggregate subbase for concrete pavement and is approximately 20 psi for the aggregate subbase for asphalt pavement. Therefore, asphalt pavement requires a thicker aggregate subbase and/or a thicker pavement to provide additional support and strength as compared to a concrete pavement. Although concrete pavements can perform better than asphalt pavements when subjected to poor support characteristics, they are more rigid and are subject to more tensile cracking. Figure 1 illustrates the subgrade reactions for rigid and flexible pavements.[1]

FIGURE 1: SUBGRADE REACTION



2.2 Stabilized Subgrades

The need to stabilize subgrades is primarily due to excessive moisture in the subgrade itself. High moisture in soils may be encountered during construction for reasons ranging from a naturally high water table to seasonal rainfall and even to changes in drainage conditions during construction. Regardless of the cause, in situ wet soils must be addressed before constructing an aggregate subbase or placement of the pavement on the subgrade. Placing subdrains before construction or letting the soil dry out through a natural process is not normally a practical approach because of time constraints. The two most commonly used methods are chemical modification of the soils, particularly in high moisture conditions, and reinforcement/separation.[1]

2.3 Chemical Stabilized Subgrade

A stabilized subgrade, such as soil cement or fly ash stabilization, will help to dry out excessive moisture soils and develop the uniformity needed to provide a construction platform and reduce delays during construction. When using chemical stabilizers, the percent of the stabilizer needs to be stipulated when the water content, soil type and freeze- thaw performance are considered. [1]

Cement Modified Soils (CMS) are soils and/or manufactured aggregates mixed with a small portion of Portland cement. CMS are normally used to improve material properties in the subgrade. Also, CMS helps prevent migration of subgrade soil and water into the aggregate subbase and provides some additional strength to the subgrade. CMS are principally used to modify fine grained soils such as silts and clays having high plasticity content. Some specifications require enough cement content to reduce the Plastic Index (PI) within a range of 12 to 15. Typically a CMS amount equivalent to 3 to 5 percent of the soil's dry weight is incorporated into the mix to achieve the desired strength. This combination allows for the reduction of plasticity, minimization of moisture related volumetric changes, an increase in bearing strength and an improvement in stability. This also provides a weather resistant construction platform.

A successful chemical stabilization can be achieved by incorporating approximately 10 to 15 percent fly ash (measured by dry weight of the native soil) into the existing subgrade. Fly ash can improve the subgrade CBR from 2 to 3 to as much as 25 to 30. It can also improve the unconfined compressive strength from 50 psi to 400 psi. Fly ash stabilized subgrades can also reduce the shrink-swell potential of clay soils and upgrade the condition of marginal soils. It is also a good drying agent for wet soils and provides a working platform during construction.

2.4 Reinforced Stabilized Subgrade

Reinforced subgrade treatment is typically used when subgrades have an unstable (soft) but not extremely high moisture content. This may be accomplished through the use of geosynthetics, such as geogrids and woven geotextiles.[1]

2.5 Unstabilized Aggregate Subbases

Unstabilized aggregate subbases are appropriate when a stable and uniform construction platform will benefit construction. (ACPA 2007) An aggregate subbase support layer can provide a working platform during construction as well as provide uniformity as a support layer. A granular support layer will also serve as a drainage system to help drain surface water away from the pavement as well as provide a cutoff layer from

subsurface moisture. If an aggregate subbase is used, a subdrain and outlet will be needed to complete the drainage system due to the poor drainage properties of Iowa soils.[1]

Premature deterioration of PCC pavement joints may be attributed to poorly draining joints, and subsurface drainage will help alleviate the problem (Taylor et al. 2016).

Commonly used Iowa DOT and SUDAS aggregate subbase materials include modified subbase, granular subbase and special backfill. The Iowa DOT and SUDAS specifications for modified subbase and special backfill allow for crushed stone, gravels, and recycled pavement materials meeting material IM210 or uniformly blended combinations of these materials with a maximum of 50 percent RAP (Reclaimed Asphalt Pavement).[1]

The target permeability of approximately 150 feet per day provides the adequate drainage necessary for a pavement foundation layer. Although materials as coarse and open-graded as ASTM No. 57 stone have been used as draining layers, they are not recommended for concrete pavements due to their lack of adequate stability for construction operations and their susceptibility to long-term settlement under heavy truck traffic. It is better to design the gradation of the unstabilized aggregate subbase to include more fines for the sake of stability than to omit the fines for the sake of drainage (ACPA 2007).[1] Therefore, modified subbase is the preferred subbase material for local roadways in Iowa.

In summary, the benefits of aggregate subbases and a drainage system include the following[1]:

- Increases performance and service life
- Provides a construction platform
- Maintains uniform support
- Provides drainage from water infiltration
- Helps reduce shrink and swell of high volume-change soils
- Controls excessive or differential frost heave
- Minimizes mud-pumping of fine-grained soils
- Prevents consolidation of subgrade
- Provides capillary cut off for highwater table

2.6 Subdrains

It is known that drainage is also important to the long term performance of concrete pavement. Drainage can be achieved with the use of an aggregate subbase with subdrain outlets. It is important to prepare the natural subgrade prior to the placement of the aggregate subbase to achieve the best performance.[1]

2.7 Pavement Foundation Recommendations

The performance of a pavement depends on the quality of its subgrade and subbase layers. These foundational layers play a key role in mitigating the detrimental effects of climate and the static and dynamic stresses generated by traffic. Therefore, building a stable subgrade and a properly drained subbase is vital for constructing an effective and long lasting pavement system.[2]

In order to determine what soils are present and understand their characteristics, it is essential to complete a geotechnical investigation. It is very important that the conditions of the subgrade are known prior to design in order to select various treatments if necessary, and specify various materials and preparation to provide uniformity and support for the pavement section.[1]

The subgrade, the layer of soil on which the subbase or pavement is built, provides support to the remainder of the pavement system. It is crucial for highway engineers to develop a subgrade with a California Bearing Ratio (CBR) value of at least 10. Research has shown that if a subgrade has a CBR value less than 10, the subbase material will deflect under traffic loadings in the same manner as the subgrade and cause pavement

deterioration.[2] Manipulation, and possibly stabilization, of the on-site soils will be required to achieve this level of support.

The subbase, the layer of aggregate material immediately below the pavement, provides drainage and stability to the pavement. Undrained water in the pavement supporting layers can freeze and expand, creating high internal pressures on the pavement structure. Moreover, flowing water can carry soil particles that clog drains and, in combination with traffic, pump fines from the subbase or subgrade. It is therefore crucial that highway engineers develop a stable, permeable subbase with longitudinal subdrains.[2] According to the MEPDG analysis for low volume roads, PCC pavement systems with aggregate subbase thickness above 5 inches, do not show a significant benefit over thicker sections. Two thickness options to consider include 1) 6" or more to accommodate migration of soil into the aggregate, or 2) 4"-5" with a separation layer of geotextile or stabilized subgrade.[1]

Longitudinal subdrains are essential with subbases to provide positive subsurface drainage. Rigid or corrugated plastic pipe meeting SUDAS specifications, minimum 6" in diameter, with perforations, and sufficient outlets to storm sewer structures or daylighted are recommended. In areas, where parallel storm sewer is present, it may be possible to utilize the storm sewer piping, along with porous rock backfill and open joints covered with engineering fabric, to serve as longitudinal subdrains. Also, if sized adequately, the subdrains could also serve as a footing drain collector line for adjacent private properties.

Recommendation:

- Conduct geotechnical investigation in all new developments to determine the suitability of soils to be used for pavement subgrade
- Improve subgrade support to provide a CBR of 10, unless the geotechnical investigation determines subgrade soils are adequate
- Construct drainable subbase, using material meeting requirements of SUDAS modified subbase, and install longitudinal subdrains, unless the geotechnical investigation determines the subgrade soil is free draining

3. PCC PAVEMENT

3.1 PCC Pavement Thickness

- It is typical and current practice to use a pre-determined minimum pavement thickness for local roads. These minimum thicknesses are typically 6 or 7 inches.[1]
- Some current thickness design methodologies were developed for facilities with more traffic and may not be applicable for local roads with lower traffic volumes.[1]
- Because local roads do not carry significant levels of heavy traffic and because some thickness design methodologies revert to predetermined minimums, modifying the design parameters for improved foundations with geotextiles and aggregate subbases will not decrease the thickness design significantly.[1]
- It is common for PCC pavements to be designed for 40 to 50 years of service based on a pavement thickness design. Some older pavements were designed for only 20 years. Although pavements are reaching the specified design life, the last 15 to 20 percent of its design life may be at a low level of service including poor rideability. On a PCI scale this may include the lower end of the fair category and possibly the poor category.[1]

The SUDAS pavement thickness tables, SUDAS Design Section 5F-1, provide recommended pavement thicknesses for various calculated ESALs, subgrade conditions, roadway types, and pavement types. The calculated thicknesses are based on the AASHTO *Guide for the Design of Pavement Structures,* which is used throughout the industry for pavement thickness design. Due to established policies in many jurisdictions across the state, the minimum pavement thickness for streets on natural subgrade was set at 7 inches for rigid pavement

and 8 inches for flexible pavement. For pavements with a granular subbase, the minimum thickness was set at 6 inches for both pavement types. As noted in the thickness tables, whenever a thickness was calculated that was less than the minimum, the minimum was used.[3]

3.2 PCC Pavement Jointing

Proper jointing is critical to the performance of PCC pavements. A well designed jointing system will

- Control cracking
- Divide the pavement into practical construction increments
- Accommodate slab movement
- Provide load transfer

Load Transfer[4]

For jointed concrete pavements to perform adequately, traffic loadings must be transferred effectively from one side of the joint to the other. This is called load transfer. Adequate load transfer results in lower deflections, which reduces faulting, spalling, and corner breaks, thereby increasing pavement life. Load transfer across joints for street pavements is developed either by aggregate inter-lock or dowel bars.

Aggregate interlock is the interlocking action between aggregate particles at the face of the joint. It relies on the shear interaction between aggregate particles at the irregular crack faces that form below the saw cut. This form of load transfer has been found to be most effective on roadways with short spacings and low truck volumes. Studies have found that aggregate interlock load transfer provides acceptable pavement performance when truck semi-trailer volumes are fewer than 80 to 120 trucks per day per lane. Laboratory and field studies have shown that aggregate interlock load transfer is improved with subgrade strength; size, angularity, and durability of the aggregate; joint face roughness; and slab thickness. Furthermore, these studies found that shorter slabs increase aggregate interlock effectiveness by reducing the movement and opening at each joint.

Dowel Bars[4]

Dowel bars are round, smooth, steel bars placed across transverse joints to transfer loads without restricting horizontal joint movements due to thermal and moisture contractions and expansions. They also keep slabs in horizontal and vertical alignment. Dowels reduce deflections and stresses due to traffic loads. This in turn prevents or reduces faulting, pumping, and corner breaking on roadways that carry a large number of trucks and/or have longer joint spacings. The use of dowel bars for minimizing faulting and pumping should be considered when the slabs are longer than 20 ft (6.0 m), when truck semi-trailer traffic exceeds 80 to 120 per day per lane, or when the accumulated design traffic exceeds four to five million AASHTO ESAL's per lane. Typically, this truck traffic level requires an 8-in.-thick slab or greater. Since most residential city streets do not experience these truck traffic levels and recommended joint spacings are not greater than 15 ft., dowels are generally not necessary.

Transverse Contraction Joints[3]

Contraction joints constructed transversely across pavement lanes are spaced to control natural initial and mature cracking of the concrete pavement. The joint interval is designed so that intermediate (random) transverse cracks do not form.

Joint spacing for jointed plain (unreinforced) concrete pavements (JPCP) depends on slab thickness, concrete aggregate, subgrade/subbase support, and environmental conditions. Transverse joint spacing should be limited to 24T (T is slab thickness) for pavements on subgrades and granular subbases or 21T if the pavement is placed on stabilized subbases, existing concrete, or asphalt. Transverse joint spacing is12 feet for pavements 6 inches thick, 15 feet for pavements 7 to 9 inches thick, and 20 feet for pavements over 9 inches thick. Longitudinal joint spacing for two lane streets, where lane delineation is not necessary, should be limited to a maximum of 10 feet. Generally, transverse joint spacing should not exceed 150% of the longitudinal joint spacing. SUDAS Table 5G-2.01 provides transverse and longitudinal joint spacings for standard two lane streets.

TABLE 2: TRANSVERSE JOINT REQUIREMENTS

Table 5G-2.01: Transverse Joint Requirements

Pavement Thickness	Transverse Joint Type	Transverse Joint Spacing
6”	C	12’
7”	C	15’
8”	CD[1]	15’
9”	CD[1]	15’
≥ 10”	CD[1]	20’

[1] No dowels within 24” of the back of curb

Source: SUDAS Specifications Figure 7010.901

Longitudinal Contraction Joints[3]

Longitudinal contraction joints release stresses from restrained warping and dynamic loading. A longitudinal joint is usually placed at the center of the pavement to allow the pavement to hinge due to lane loading and help delineate separation of opposing traffic. Controlling cracking and proper constructability are the primary functions of longitudinal contraction joints. Lane delineation is a secondary function.

An important consideration when establishing the distance between longitudinal joints for jointed plain concrete pavements is the prevention of random longitudinal cracking at the quarter point, which is the midpoint between the centerline and the back of the curb. Pavements less than 9 inches thick may not crack through a longitudinal joint placed close to the gutter, which could cause longitudinal cracks at the quarter point. Quarter point jointing will address this concern. Gutterline jointing, with a longitudinal joint closer than five feet from the edge of pavement, is discouraged unless widening is imminent in the future and the pavement thickness is at least 9 inches.

The following are the longitudinal jointing options provided by SUDAS Design Section 5G-2 for 26’ B-B and 31’ B-B standard width pavements:

FIGURE 2: 26 FOOT B-B PAVEMENT

Figure 5G-2.04: 26 Foot B-B Pavement

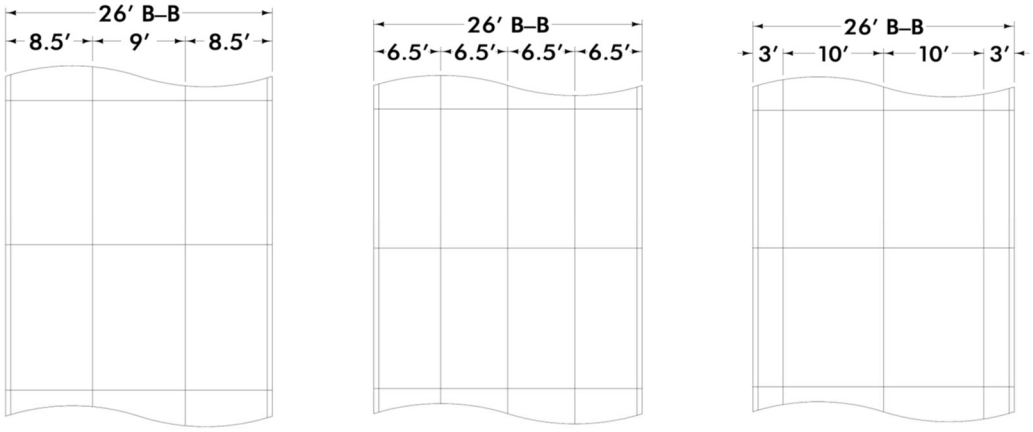
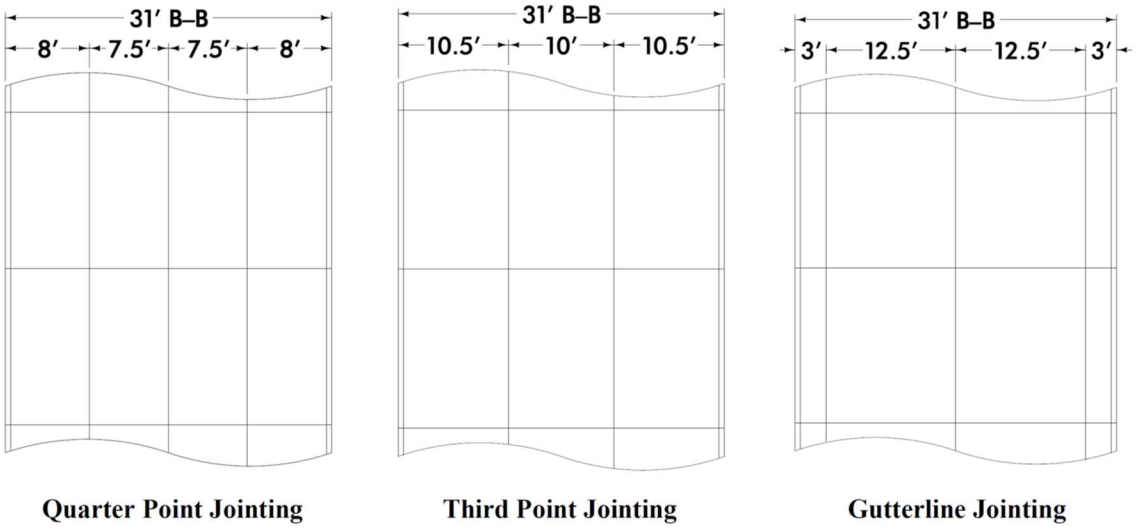


FIGURE 3: 31 FOOT B-B PAVEMENTS

Figure 5G-2.05: 31 Foot B-B Pavements



3.3 PCC Pavement Mix[5]

Municipalities in Iowa typically specify concrete mixes in the following way. If the city does not have joint deterioration concerns, then they often continue using their default Class C mix. SUDAS Section 7010 refers to Iowa DOT IM 529 and simply indicates that cities should use Iowa DOT Class C (or M) mix as described.

If the city has concerns with joint deterioration, then they should consider one of two high-durability mixes: C-SUD or CV-SUD. These mixes are identified in Iowa DOT IM 529. The C-SUD and CV-SUD mixes have the SUD designation for SUDAS. The "V" designation refers to the use of a Class V aggregate as specified in Iowa DOT Section 4117. While a conventional Class C concrete has a target w/c ratio of 0.43 and max of 0.488, the C-SUD mix has a target of 0.40 and max of 0.45. As a result, a C-SUD mix provides a more durable concrete pavement with lower permeability than conventional Class C mix due to its lower w/c ratio. With slip-form paving operations, however, the w/c ratio will typically be lower than the target w/c ratio during production with any mix design. The higher durability is desired to reduce joint deterioration due to the use of deicing chemicals. A joint saturated with de-icing salts limits the ability to allow the joint to dry out. To maintain the lower w/c ratio, a low- or mid-range water reducer may be necessary. For even greater durability, the use of ternary mixes should also be considered. Further references for mix proportioning in C-SUD and CV-SUD can be found in the Proportion Table 4 of Iowa DOT Materials IM 529. Note that these mixtures assume a basic w/c ratio of 0.40 and a maximum w/c ratio of 0.45.

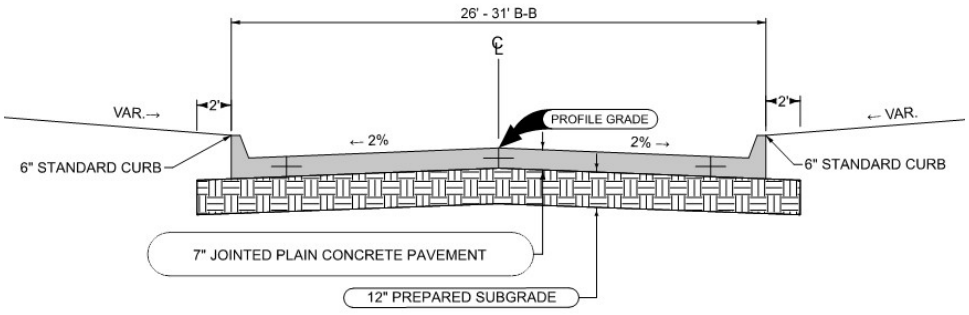
The above mixture is based on Type I or Type II cements (Sp. G. = 3.14). Mixes using blended cements (Type IP or IS) must be adjusted for cement gravities listed in IM 401. Use proportions listed above if not utilizing three aggregates. The above mixture is based on Type IP cements.

4. CURRENT BONDURANT DESIGN STANDARDS FOR PCC PAVEMENT SYSTEMS

The City of Bondurant does not have a formally adopted design standard for pavements. However, guidance provided to designers includes the following::

1. Jointed plain concrete pavement (JPCP), 7" thick
2. Standard Class C mix
3. Jointing is determined by designer
4. The required pavement foundation consists of prepared subgrade utilizing on-site soils

The typical cross-section of the current design standard is as follows:



5. RECOMMENDED BONDURANT DESIGN STANDARDS FOR PCC PAVEMENT SYSTEMS

5.1 Pavement Foundation Recommendations

Geotechnical Investigation: Conduct geotechnical investigations in all new developments to determine the suitability of soils to be used for pavement subgrade.

Subgrade: Improve subgrade support to provide a CBR of 10, unless the geotechnical investigation determines subgrade soils are adequate.

Subbase and Subdrain: Construct drainable subbases, using material meeting requirements of SUDAS modified subbase, and install longitudinal subdrains, unless the geotechnical investigation determines the subgrade soil is free draining. The depth of the subbase should be 6” on the prepared subgrade or 4” with an appropriate geotextile between the prepared subgrade and the subbase material.

5.2 Pavement Recommendations

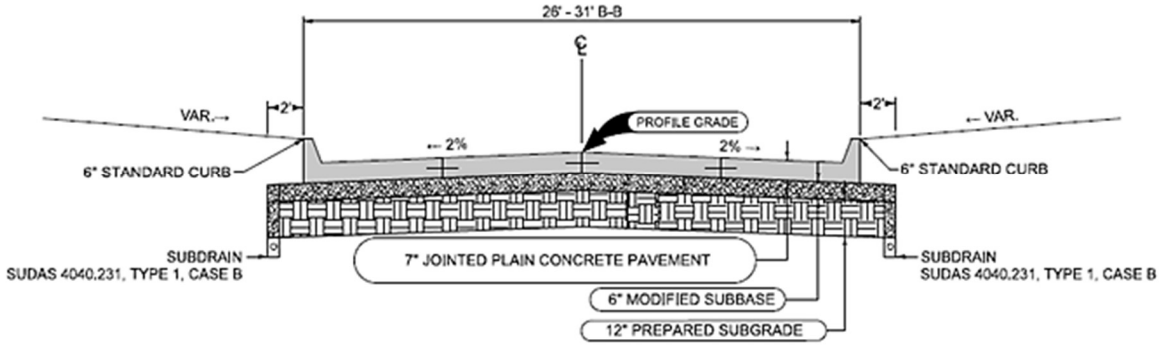
For the purposes of this discussion, the recommendations are for typical low-volume local streets, which have little truck traffic, not exceeding 85 trucks/day.

Pavement Thickness: The SUDAS pavement thickness design table for local low volume streets indicates a 6”-thick JPCP with an adequate foundation will perform satisfactorily and provide a 50-year life, according to the AASHTO design guide. However, experience across Iowa has shown 7” pavement will outperform the thinner pavement and is the standard thickness for most jurisdictions and is the recommended thickness of JPCP.

Pavement Jointing: Transverse joint spacing for 7”-thick JPCP paving should not exceed 15 feet, and ‘C’ joints, without dowels, is recommended because of the low truck volumes expected. Either quarter-point or third-point longitudinal jointing is recommended for 26’-wide pavements. Quarter-point jointing is recommended for 31’-wide pavements.

Pavement Mix: A Class C-SUD concrete mix is recommended. To help prevent early pavement joint deterioration, special attention should be given to maintaining adequate air content in the pavement after placement, in the range of 6% to 8%. Also, a water to cement ratio (w/c) of 0.40, with 0.45 maximum, is required. Supplementary cementitious materials (SCMs) are encouraged, and cement replacement rates of 20-25% Class F fly ash or 30-35% Class C fly ash or a combination of 20% slag and 20% Class C fly ash should be considered.

The typical cross-section of the recommended design standard is:



6. RECOMMENDED VS. CURRENT STANDARDS BENEFIT/COST COMPARISON

The following cost comparison and the benefits of the recommended higher standard of design will focus only on the costs associated with the pavement system, as previously defined, and will not include all other development infrastructure costs, such as site grading, storm sewer, water main, sanitary sewer, etc. In addition, no cost benefit has been determined for other benefits of long-lasting pavements, such as prolonged higher service level and less inconvenience to the adjoining properties and traveling public.

The additional costs from the recommendations are for the drainable subbase and the subdrain. Other recommendations, such as the geotechnical investigation, subgrade CBR of 10, and the Class C-SUD concrete mix are either required or recommended by SUDAS and should not add cost to the paving system.

6.1 Additional Costs Due to Recommended Pavement System Standards

To determine the relative costs of the pavement system using the current Bondurant pavement design standards and the recommended standards, two representative residential street segments were used.

- A two-block segment of 26'-wide street paving, 900'-long from center of intersection to center of intersection
- A one-block segment of 26'-wide street paving, 870'-long from center of intersection to center of intersection

As previously mentioned, only pavement system costs were compared, which included excavation (for the pavement only), subgrade preparation, subbase and subdrains (for the recommended standard), and pavement. The following tables determine the estimated cost per square yard of the pavement system, including pavement and pavement foundation.

TABLE 3: RECOMMENDED VS. CURRENT STANDARD COST – TWO-BLOCK 900' SEGMENT

Current Pavement Standards

Item No.	Item	Unit	Unit Price	Quantity	Total Cost
1	Excavation, Class 10	CY	$10.00	1136	$11,360.00
2	Subgrade Preparation	SY	$4.00	3408	$13,632.00
3	PCC Pavement, 7"	SY	$74.00	3009	$222,666.00
				Total	$247,658.00
				Cost/SY	**$82.31**

Recommended Pavement Standards

Item No.	Item	Unit	Unit Price	Quantity	Total Cost
1	Excavation, Class 10	CY	$10.00	1704	$17,040.00
2	Subgrade Preparation	SY	$4.00	3408	$13,632.00
3	Subbase, Modified, 6"	SY	$10.00	3408	$34,080.00
4	PCC Pavement, 7"	SY	$74.00	3009	$222,666.00
5	Subdrains, PVC, 6" *	LF	$20.00	1112	$22,240.00
6	Subdrain Cleanout	EA	$800.00	3	$2,400.00
7	Subdrain Outlets and Connections	EA	$500.00	3	$1,500.00
				Total	$313,558.00
				Cost/SY	**$104.21**

* Assumed 25% provided by storm sewer

TABLE 4: RECOMMENDED VS. CURRENT STANDARD COST – ONE-BLOCK 870' SEGMENT

Current Pavement Standards

Item No.	Item	Unit	Unit Price	Quantity	Total Cost
1	Excavation, Class 10	CY	$10.00	1035	$10,350.00
2	Subgrade Preparation	SY	$4.00	3104	$12,416.00
3	PCC Pavement, 7"	SY	$74.00	2718	$201,132.00
				Total	$223,898.00
				Cost/SY	**$82.38**

Recommended Pavement Standards

Item No.	Item	Unit	Unit Price	Quantity	Total Cost
1	Excavation, Class 10	CY	$10.00	1552	$15,520.00
2	Subgrade Preparation	SY	$4.00	3104	$12,416.00
3	Subbase, Modified, 6"	SY	$10.00	3104	$31,040.00
4	PCC Pavement, 7"	SY	$74.00	2718	$201,132.00
5	Subdrains, PVC, 6" *	LF	$20.00	1187	$23,740.00
6	Subdrain Cleanout	EA	$800.00	2	$1,600.00
7	Subdrain Outlets and Connections	EA	$500.00	4	$2,000.00
				Total	$287,448.00
				Cost/SY	**$105.76**

* Assumed 25% provided by storm sewer

6.2 Cost Comparison

Cost of Pavement Systems

The following is a comparison of the costs of the current design standards and the recommended design standards for two similar sections of pavement in a residential area, as previously described:

Example 1: Two-block 900' Segment
Additional pavement system cost due to recommended design standards
$104.21 - $82.31 = +$21.90/SY
Percent increase in pavement system cost due to recommended design standards
$21.90 / $82.31 = +26.6%

Example 2: One-block 870' Segment
Additional pavement system cost due to recommended design standards
$105.76 - $82.38 = +$23.38/SY
Percent increase in pavement cost due to recommended design standards
$23.38 / $82.38 = +28.4%

Averages of the two examples yield the following results due to the recommended design standards:
Additional pavement system cost +$22.64
Percent increase in pavement system cost +27.5%

Cost of Residential Lots

Another way to look at this additional cost is how it might affect the cost of each residential development lot. As an illustration, a normal residential lot is presumed to be 70'± wide and 140'± deep and corner lots are 90' wide. Using the two street pavement examples illustrated in Section 6.1, the following costs are calculated:

Example 1: Two-block 900' segment
As many as 20 lots or as few as 12 lots could front on the street segment, depending on orientation. Assuming an average of 16 lots, the additional cost per lot for the improved standards would be $65,900 / 16 lots = $4,118.75/lot.

Example 2: One-block 870' segment
As many as 22 lots or as few as 18 lots could front on the street segment, depending on orientation. Assuming an average of 20 lots, the additional cost per lot for the improved standards would be $63,550 / 20 lots = $3,177.50/lot.

An estimated per lot additional cost due to the recommended standards ranges from $3,177.50 to $4,118.75, or an average of $3,648.13.

6.3 Life Benefit of Recommended Standards

As indicated in previous discussions, improved pavement foundations and subsurface drainage will substantially increase the expected life of a pavement. It is also expected that improved jointing and concrete mixtures with provide additional longevity and improved service. Properly designed and maintained PCC pavements should be expected to provide at least 50 years of good service, as opposed to the expected life of 30 to 35 years for the current design standards. Therefore, a conservative estimate of the additional pavement life for the recommended pavement system standards is 15 years.

Additional pavement life due to recommended design standards
50 years – 35 years = +15 years
Percent increase in pavement life due to recommended design standards
15 years / 35 years = +42.8%

Benefit/Cost Ratio
Life Benefit Increase % / Additional Cost % = 42.8% / 27.5% = 1.56:1

6.4 Future Reconstruction

As would be anticipated with additional expected life, pavements constructed at the higher recommended design standards should require reconstruction less frequently. As an illustration, over a period of 100 years, it would be expected that pavement constructed with the recommended design standards would require only one pavement reconstruction to last that period of time. On the other hand, pavement constructed at the current design standard would require two reconstructions to serve for a similar length of time.

Based on present costs and the cost of removing and replacing only the pavement in the future, and not including other associated work, such as excavation, intakes, drives, design, and other associated costs, the following assumptions using an average of the two previous pavement examples of similar length are made:

- Number of residential lots: 18
- Total area of pavement: 2,864 SY
- Area of pavement per lot: 159 SY
- Initial cost of pavement with current design: $82.35/SY
- Initial cost of pavement with recommended design: $104.99/SY
- Cost to remove and replace pavement = $12 + $74 = $86/SY

the following conservative costs could be expected:

Costs for pavement constructed with <u>current</u> design standards to serve for 100 years

Initial pavement system cost:
2,864 SY @ $82.35 = $235,850
Initial pavement system cost per residential lot:
$235,850 / 18 lots = $13,103

Pavement reconstruction cost at 35 years:
2,864 SY @ $86.00 = $246,304
Pavement reconstruction cost per residential lot at 35 years:
$246,304 / 18 lots = $13,684

Pavement reconstruction cost at 70 years:
2,864 SY @ $86.00 = $246,304
Pavement reconstruction cost per residential lot at 70 years:
$246,304 / 18 lots = $13,684

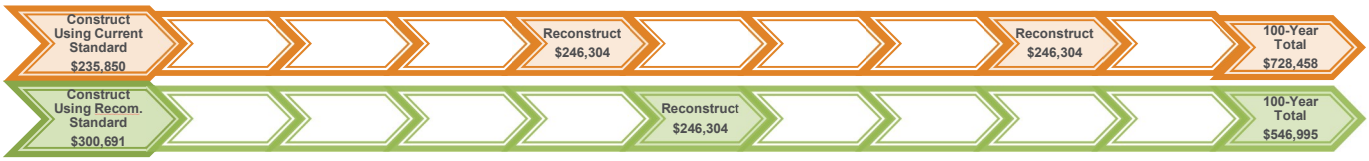
Total pavement costs with current design standards for 100 years:
Pavement system initial cost and pavement reconstruction costs $728,458
Pavement system initial cost and pavement reconstruction costs per lot $40,470

Cost for pavement constructed with <u>recommended</u> design standards to serve for 100 years

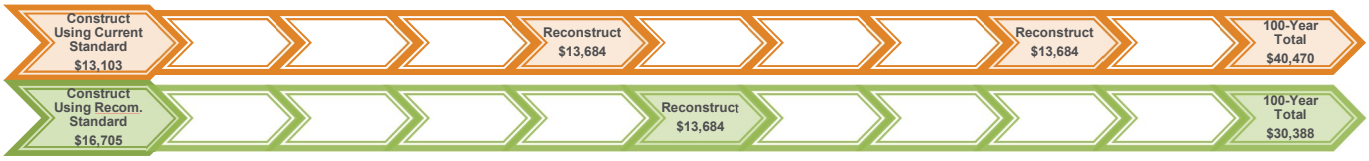
Initial pavement system cost:	
2,864 SY @ $104.99 =	$300,691
Initial pavement system cost per residential lot:	
$300,691 / 18 lots =	$16,705
Pavement reconstruction cost at 50 years:	
2,864 SY @ $86.00 =	$246,304
Pavement reconstruction cost per residential lot at 35 years:	
$246,304 / 18 lots =	$13,684
Total pavement costs with recommended design standards for 100 years:	
Pavement system initial cost and pavement reconstruction costs	$546,995
Pavement system initial cost and pavement reconstruction costs per lot	$30,388

For each residential lot, an initial investment of approximately $3,602 more for longer lasting pavement using the recommended design standards will reduce future reconstruction costs by an estimated $10,082 in present day dollars.

Projected Pavement Construction & Reconstruction Timeline -100-Year Cycle (Average Street Segment)



PROJECTED PAVEMENT CONSTRUCTION & RECONSTRUCTION TIMELINE -100-YEAR CYCLE (PER LOT)



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REFERENCES

[1] Gross, J., Harrington, D., Wiegand, P., and Cackler, T. *Guidance for Improving Foundation Layers to Increase Pavement Performance on Local Roads,* Iowa : Report No. TR-640, Iowa Department of Transportation. 2014.

[2] Schaefer, V., Stevens, L., White, D., Ceylan, H. *Design Guide for Improved Quality of Roadway Subgrades and Subbases,* Iowa: Report No. TR-525, Iowa Department of Transportation, 2008.

[3] Iowa Statewide Urban Design and Specifications Program (SUDAS), *Design Manual,* 2023.

Taylor, P., Zhang, J., Wang, X. *Conclusions from the Investigation of Deterioration of Joints in Concrete Pavement,* Report No. TPF-5(224), Federal Highway Administration, 2016.

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[5] Weiss, J., Ley, M.T., Sutter, L. Harrington, D., Gross, J. Guide to the Prevention and Restoration of Early Joint Deterioration in Concrete Pavements, Iowa: Report No. TR-697, Iowa Department of Transportation, 2016.

[6] HDR and CH2M Hill, Memo to Lucia Ramirez of Oregon department of Transportation; Discounting Recommendations for Least Cost Planning in Oregon, March 15, 2011. Retrieved from https://www.oregon.gov/ODOT/TD/TP/docs/lcp/discount.pdf, February 2017

[7] Office of Management and Budget. (November 2016). Advisory Circular A-94. *DISCOUNT RATES FOR COST-EFFECTIVENESS, LEASE PURCHASE, AND RELATED ANALYSES Appendix C*, retrieved from https://obamawhitehouse.archives.gov/omb/circulars_a094/a94_appx-c, February 2017

[8] Mack, J. W. Accounting for Inflation in Life Cycle Cost Analysis for Pavement Type Selection . Transportation Research Board, Vol. 12, No. 2686, 2011. Retrieved from http://docs.trb.org/prp/12-2686.pdf, February 2017

BUSINESS OF THE CITY COUNCIL
BONDURANT, IOWA
AGENDA STATEMENT

Item No. 8.a.
For Meeting of 6/17/2024
Resolution

TITLE: - Resolution approving the amended Featherstone Townhomes Plat 1 Final Plat

CONTACT PERSON:
Maggie Murray, Planning & Community Development Director
Isaac Pezley, City Planner

BRIEF HISTORY & ANALYSIS: For review by City Council is approval of the Featherstone Townhomes Plat 1 Final Plat. The developer is HRC Bondurant LLC. The plat was submitted by Civil Design Advantage (CDA). The Featherstone (Top Farms Property) Preliminary Plat, which encompassed this current Featherstone Townhomes Plat 1 Final Plat area, was reviewed and approved by City Council on December 20, 2021. This current Plat 1 Final Plat area contains 74 units for townhome development. This Plat 1 Final Plat area is located along 13th Street NE just west of the western edge of Hubbell Avenue/Highway 65. The Featherstone Townhomes Plat 1 Final Plat was originally approved by City Council on November 7, 2022.

The applicant, HRC Bondurant LLC, is requesting an amendment to the approved Final Plat to adjust the square footage of the four-unit townhome parcels. The original Final Plat showed the outer townhome unit parcels as being 2,320 square feet and the interior unit parcels being 1,600 square feet. The amended Final Plat shows the outer townhome unit parcels as being 1,686 square feet and the interior unit parcels being 1,747 square feet. The applicant is not proposing to alter the foot print of the bi-plex parcels. The applicant is not requesting any other amendments to the Final Plat at this time.

FUNDING SOURCE: NA

STAFF RECOMMENDATION: Staff recommends approval of the Featherstone Townhome Plat 1 Final Plat.

APPROVED FOR SUBMITTAL:

ATTACHMENTS:
1. RESOLUTION NO. 240617-134
2. Featherstone Townhomes Plat 1 Final Plat

CITY OF BONDURANT
RESOLUTION NO. 240617-134

RESOLUTION APPROVING THE AMENDED FEATHERSTONE TOWNHOMES PLAT 1 FINAL PLAT

WHEREAS Civil Design Advantage submitted the amended Featherstone Townhomes Plat 1 Final Plat; AND

WHEREAS the Owner/Developer is HRC Bondurant LLC; AND

WHEREAS this is a subdivision within Bondurant's city limits described as follows:

OUTLOT "W", FEATHERSTONE PLAT 1, AN OFFICIAL PLAT IN THE CITY OF BONDURANT, POLK COUNTY, IOWA AND CONTAINING 7.97 ACRES (347,253 SQUARE FEET).

THE PROPERTY IS SUBJECT TO ANY AND ALL EASEMENTS OF RECORD.

WHEREAS, the Featherstone Townhomes Plat 1 Final Plat area was included as part of the Featherstone (Top Farms) Preliminary Plat approved by City Council on December 20, 2021; AND

WHEREAS, the Featherstone Townhomes Plat 1 Final Plat area was included as part of the Featherstone Townhomes Preliminary Plat/Site Plan approved by City Council on June 6, 2022; AND

WHEREAS, the Featherstone Townhomes Plat 1 Final Plat was approved by City Council on November 7, 2022. The amended submitted Final Plat includes amended square footage areas for the four-unit townhome lots; AND

WHEREAS the Featherstone Townhomes Plat 1 Final Plat area is zoned Planned Unit Development (R-5).

NOW, THEREFORE, BE IT RESOLVED, by the City Council of the City of Bondurant, Iowa, that the Featherstone Townhomes Plat 1 Final Plat is hereby approved subject to the following Code items being addressed and that such items shall be addressed prior to the City releasing this resolution for recording:

1. That the developer and the City of Bondurant enter into a development agreement regarding the following topics – cost share the 16th Street NE public street improvements and water main upsizing
2. That as noted on the resolution approving the Featherstone Townhomes Preliminary Plat/Site Plan, that all units within the Featherstone Townhomes Plat 1 development area shall include basements unless granted an accessibility waiver by Council, as authorized by Section 178.06.4.P of the Zoning Code.

Passed this 17th day of June 2024

By: _____
Doug Elrod, Mayor

ATTEST: I, Shelby Hagan, City Clerk of Bondurant, hereby certify that at a meeting of the City Council held on the above date, among other proceedings the above was adopted.

IN WITNESS WHEREOF, I have hereunto set my hand the day and year above written.

_____
Shelby Hagan, City Clerk

Council Action	Ayes	Nays	Abstain	Absent
Cox				
Driscoll				
McKenzie				
Peffer				
Sillanpaa				

FEATHERSTONE TOWNHOMES PLAT 2

FINAL PLAT

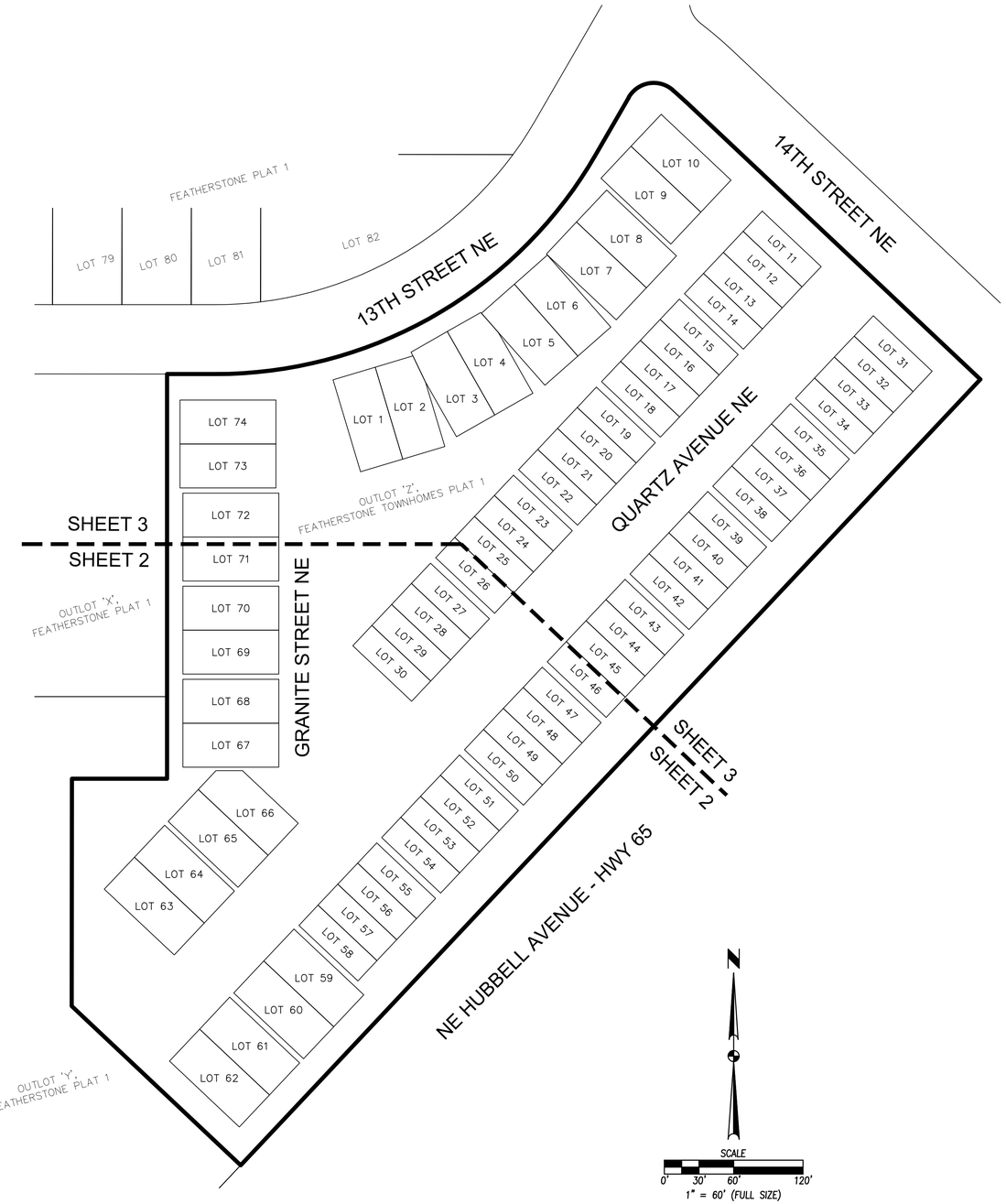
INDEX LEGEND

LOCATION: LOTS 1 THROUGH 74 AND OUTLOT 'Z'
FEATHERSTONE TOWNHOMES PLAT 1
BONDURANT, POLK COUNTY, IOWA

REQUESTOR BY PROPRIETOR: HRC BONDURANT LLC
6900 WESTOWN PARKWAY
WEST DES MOINES, IA 50266

SURVEYOR: MATTHEW J. THOMAS, PLS

PREPARED BY & RETURN TO: CIVIL DESIGN ADVANTAGE, LLC
4121 NW URBANDALE DRIVE
URBANDALE, IA 50322
PH: 515-369-4400



OWNER / DEVELOPER

HRC BONDURANT LLC
CONTACT: STEVE MOSELEY
6900 WESTOWN PARKWAY
WEST DES MOINES, IA 50266

ENGINEER / SURVEYOR

CIVIL DESIGN ADVANTAGE
4121 NW URBANDALE DRIVE
URBANDALE, IA 50322

DATE OF SURVEY

SEPTEMBER 20, 2022

PLAT DESCRIPTION

LOTS 1 THROUGH 74 AND OUTLOT 'Z', FEATHERSTONE TOWNHOMES PLAT 1, AN OFFICIAL PLAT, NOW INCLUDED IN AND FORMING A PART OF THE CITY OF BONDURANT, POLK COUNTY, IOWA AND CONTAINING 7.97 ACRES (347,253 SQUARE FEET).

THE PROPERTY IS SUBJECT TO ALL EASEMENTS, RESTRICTIONS AND COVENANTS OF RECORD.

ZONING

R-5 PLANNED UNIT DEVELOPMENT (PUD) DISTRICT

NOTES

1. ANY SET MONUMENTATION SHOWN ON THIS PLAT WILL BE COMPLETED WITHIN ONE YEAR FROM THE DATE THIS PLAT WAS RECORDED.
2. LOTS MAY BE SUBJECT TO MINIMUM PROTECTION ELEVATIONS AND OTHER ELEVATION RESTRICTIONS NOT SHOWN ON THIS PLAT. REFER TO THE SEPARATELY-RECORDED MPE TABLE.
3. ANY USE OF A PUBLIC UTILITY EASEMENT IN AN AREA OVERLAPPING A DESIGNATED CITY OF BONDURANT EASEMENT IS SUBORDINATE TO THE CITY'S USE OF THAT EASEMENT AND ANY USER OF THE PUBLIC UTILITY EASEMENT MUST RELOCATE AT NO COST TO THE CITY IF THE USE OF THE EASEMENT IS IN CONFLICT WITH THE CITY'S USE OF ITS DESIGNATED EASEMENT AT ANY TIME.
4. LOTS 1 THROUGH 74 AND OUTLOT 'Z', FEATHERSTONE TOWNHOMES PLAT 1 ARE TO BE REPLACED BY LOTS 1 THROUGH 74 AND OUTLOT 'Z' OF THIS PLAT.
5. LOTS 11 THROUGH 60 OF THIS PLAT ARE IN A DIFFERENT LOCATION THAN LOTS 11 THROUGH 60 OF FEATHERSTONE TOWNHOMES PLAT 1.
6. THE LOCATION OF LOTS 1 THROUGH 10 AND 61 THROUGH 74 ON THIS PLAT ARE UNCHANGED FROM THE LOCATION OF LOTS 1 THROUGH 10 AND 61 THROUGH 74 OF FEATHERSTONE TOWNHOMES PLAT 1.
7. EXISTING LOT LINES AND MONUMENTS FROM FEATHERSTONE TOWNHOMES PLAT 1 ARE NOT SHOWN FOR CLARITY.

LEGEND

	FOUND	SET
SECTION CORNER AS NOTED	▲	△
1/2" REBAR, RED PLASTIC CAP#19968 (UNLESS OTHERWISE NOTED)	●	○
MEASURED BEARING & DISTANCE	(M)	
RECORDED BEARING & DISTANCE	(R)	
DEEDED BEARING & DISTANCE	(D)	
PUBLIC UTILITY EASEMENT	P.U.E.	
CURVE ARC LENGTH	AL	
LOT ADDRESS	(1234)	
CENTERLINE		
SECTION LINE		
EASEMENT LINE		
BUILDING SETBACK LINE		
PLAT BOUNDARY		

BULK REGULATIONS

MULTI-FAMILY: TOWNHOMES OR APARTMENTS

TOWNHOMES (MAX. 12 DU/AC.):
SETBACKS
FRONT YARD = 25 FT
REAR YARD = 25 FT
UNCOVERED DECKS MAY ENCROACH INTO THE REAR SETBACK UP TO 10 FT FROM REAR PROPERTY LINE. COVERED DECKS MUST MEET REAR YARD SETBACK.
MIN. DISTANCE BETWEEN BUILDINGS = 10 FT
MAXIMUM HEIGHT = 45 FT
TWO PARKING STALLS SHALL BE PROVIDED FOR EACH UNIT.

APARTMENTS (MAX. 20 DU/AC.):
SETBACKS
FRONT YARD = 30 FT
REAR YARD = 35 FT PRINCIPAL STRUCTURE
= 5 FT ACCESSORY BUILDING
SIDE YARD = 10 FT PRINCIPAL STRUCTURE
= 3 FT ACCESSORY BUILDING
UNCOVERED DECKS MAY ENCROACH INTO THE REAR SETBACK UP TO 10 FT FROM REAR PROPERTY LINE. COVERED DECKS MUST MEET REAR YARD SETBACK.
MIN. DISTANCE BETWEEN BUILDINGS = 15 FT
MAXIMUM HEIGHT = 45 FT
1.5 PARKING STALLS SHALL BE PROVIDED FOR EACH 1 BEDROOM UNIT, AND 2 PARKING STALLS FOR EACH 2 BEDROOM OR LARGER UNIT.

PARKING PROVIDED = 316 SPACES
(INCLUDES GARAGES AND DRIVEWAYS)

I HEREBY CERTIFY THAT THIS LAND SURVEYING DOCUMENT WAS PREPARED AND THE RELATED SURVEY WORK WAS PERFORMED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF IOWA.

LICENSED PROFESSIONAL LAND SURVEYOR
MATTHEW J. THOMAS
19968
IOWA

MATTHEW J. THOMAS, P.L.S. DATE

LICENSE NUMBER 19968
MY LICENSE RENEWAL DATE IS DECEMBER 31, 2023
PAGES OR SHEETS COVERED BY THIS SEAL:
SHEETS 1 THROUGH 3

FILE: H:\2021\2204276\DWG\2204276_FINAL PLAT 2.DWG
FILE DATE: 3/22/2024 DATE PLOTTED: 3/25/2024 11:04 AM
PLOTTED BY: JON ERDAHL TECH:
COMMENT:
END:

CIVIL DESIGN ADVANTAGE
4121 NW URBANDALE DRIVE
URBANDALE, IA 50322
PHONE: (515) 369-4400

ENGINEER: TECH: REVIEW:

REVISIONS	DATE
PREPARED	03/22/24

BONDURANT, IOWA

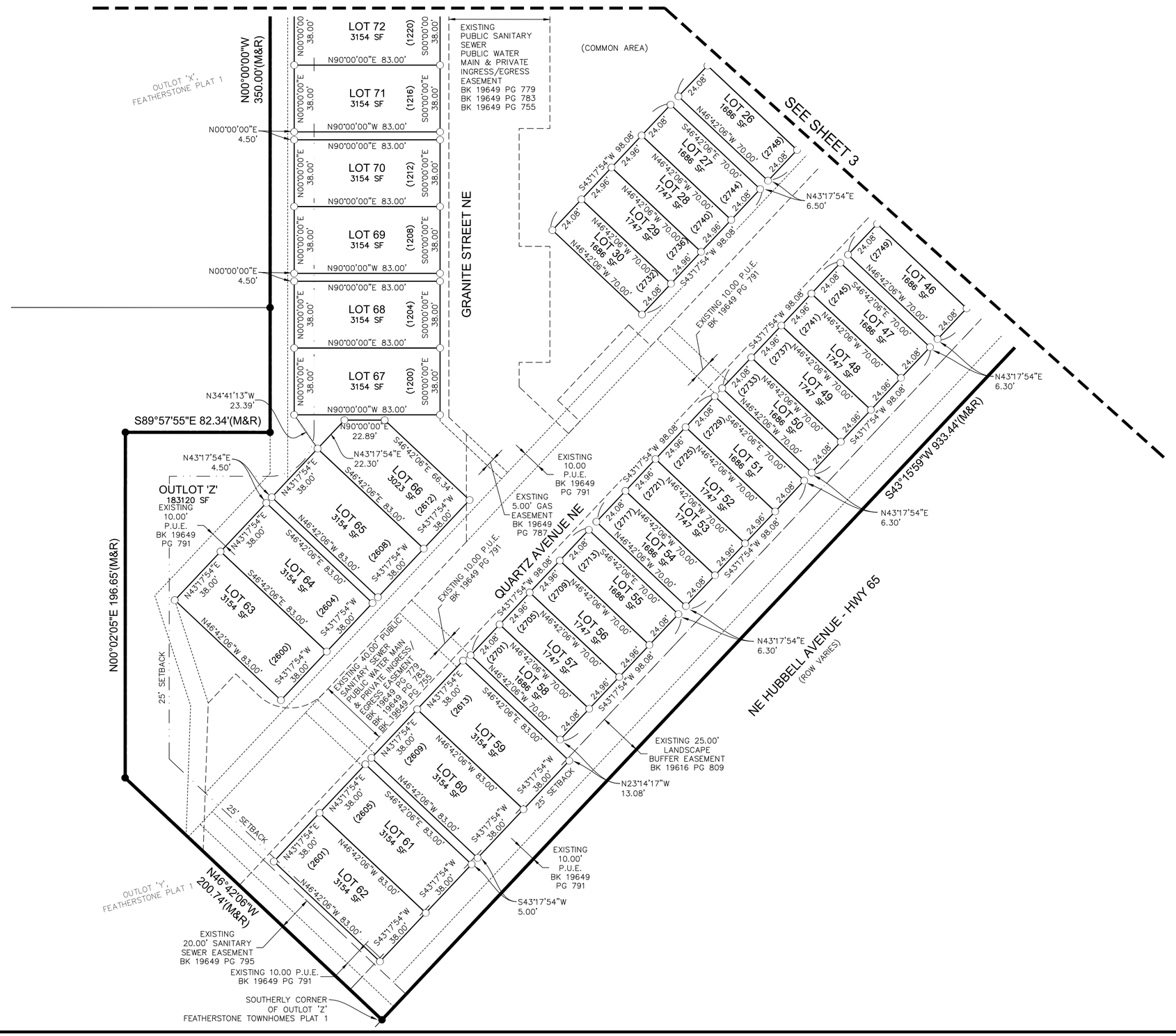
FEATHERSTONE TOWNHOMES PLAT 2
FINAL PLAT

1/3

2204.276

FEATHERSTONE TOWNHOMES PLAT 2

FINAL PLAT



4121 NW URBANDALE DRIVE
URBANDALE, IA 50322
PHONE: (515) 369-4400

REVISIONS	DATE
	03/22/24

PREPARED

ENGINEER: TECH: REVIEW:

CIVIL DESIGN ADVANTAGE

BONDURANT, IOWA

FEATHERSTONE TOWNHOMES PLAT 2
FINAL PLAT

SCALE
0' 15' 30' 60'
1" = 30' (FULL SIZE)

2 / 3

2204.276

FILE: I:\2022\2204276\DWG\2204276_FINAL PLAT 2.DWG
FILE DATE: 3/25/24
PLOTTED BY: JON EBOHAL
DATE PLOTTED: 3/25/2024 11:04 AM
TECH:
COMMENT:
ENG:

FEATHERSTONE TOWNHOMES PLAT 2

FINAL PLAT

Δ=100°27'25"
L=43.83'
R=25.00'
CH=38.43'
CHB=N80°13'42"E
(M&R)

N30°00'00"E
56.85'(M&R)

Δ=2°50'29"
L=15.37'
R=310.00'
CH=15.37'
CHB=S48°07'20"E
(M&R)

EXISTING 10.00' P.U.E.
BK 19616 PG 821

S45°11'41"E 38.03'

EXISTING 5.00'
GAS EASEMENT
BK 19616 PG 817

14TH STREET NE

S46°42'06"E
350.01'(M&R)

S43°17'54"W 23.50'

60.00' ROW

167.04'

25' SETBACK

EXISTING
10.00' P.U.E.
BK 19649
PG 791

EASTERLY CORNER
OF OUTLOT 'Z'
FEATHERSTONE
TOWNHOMES
PLAT 1

24.09'

S45°44'02"E
35.05'

N43°17'54"E
6.50'

N43°17'54"E
6.30'

EXISTING
10.00'
P.U.E.
BK 19649
PG 791

EXISTING 25.00'
LANDSCAPE
BUFFER EASEMENT
BK 19616 PG 809

25.00' SETBACK

N43°17'54"E
6.30'

QUARTZ AVENUE NE

EXISTING 40.00' PUBLIC
SANITARY SEWER
PUBLIC WATER MAIN
& PRIVATE INGRESS/
EGRESS EASEMENT
BK 19649 PG 783

EXISTING
10.00' P.U.E.
BK 19649
PG 791

S43°15'59"W 933.44'(M&R)

NE HUBBELL AVENUE - HWY 65
(ROW VARIES)

SEE SHEET 2

FEATHERSTONE PLAT 1

LOT 80

LOT 81

LOT 82

13TH STREET NE

Δ=60°02'05"
L=398.17'
R=380.00'
CH=380.20'
CHB=N60°01'03"E
(M&R)

60.00' ROW

N25°57'14"W
11.29'

N40°10'02"W
1.27'

S41°24'13"E
0.84'

EXISTING
10.00' P.U.E.
BK 19616 PG 821

EXISTING 5.00'
GAS EASEMENT

NW CORNER
OF OUTLOT 'Z'
FEATHERSTONE
TOWNHOMES
PLAT 1

S89°57'55"E
41.61'(M&R)

22.52'

N90°00'00"E
11.20'

EXISTING
10.00'
P.U.E.
BK 19649
PG 791

EXISTING
5.00' GAS
EASEMENT
BK 19649
PG 787

N29°02'41"W
5.15'

N00°00'00"W
350.00'(M&R)

N00°00'00"E
4.50'

25' SETBACK

EXISTING
PUBLIC SANITARY
SEWER
PUBLIC WATER
MAIN & PRIVATE
INGRESS/EGRESS
EASEMENT
BK 19649 PG 779
BK 19649 PG 783
BK 19649 PG 755

(COMMON AREA)

N70°26'33"E
52.43'

N73°20'22"E
38.00'
(2705)

N73°20'22"E
34.02'
(2709)

N60°23'24"E
36.06'
(2713)

N60°23'24"E
33.33'
(2717)

N48°35'47"E
38.00'
(2721)

S41°24'13"E
21.99'

N25°44'55"W
3.63'

S25°44'55"E
25.20'

S29°36'36"E 83.00'

N41°24'13"W 61.01'

S29°36'36"E 60.65'

S60°23'24"W
38.00'

S73°20'22"W
38.00'

N16°39'38"W 83.00'

S16°39'38"E 83.00'

S16°39'38"E 58.12'

LOT 74
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(1228)

LOT 73
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LOT 72
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LOT 71
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LOT 2
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LOT 3
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LOT 4
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LOT 5
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LOT 6
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LOT 9
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LOT 10
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N43°17'54"E
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(2737)

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S43°17'54"W
38.00'

N46°42'06"W 83.00'

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(2733)
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(2725)

S48°35'47"W
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LOT 26
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N46°42'06"W 70.00'

S46°42'06"E 70.00'

24.08'

24.96'

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(2757)
(2753)
(2749)

SCALE
0' 15' 30' 60'
1" = 30' (FULL SIZE)

4121 NW URBANDALE DRIVE
URBANDALE, IA 50322
PHONE: (515) 369-4400

DATE	REVISIONS	PREPARED
03/22/24		

ENGINEER: | TECH: | REVIEW:

CIVIL DESIGN ADVANTAGE

BONDURANT, IOWA

FEATHERSTONE TOWNHOMES PLAT 2 FINAL PLAT

3 / 3

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BUSINESS OF THE CITY COUNCIL
BONDURANT, IOWA
AGENDA STATEMENT

Item No. 8.b.
For Meeting of 6/17/2024
Resolution

TITLE: - Resolution adopting the City of Bondurant Pavement Management Program

CONTACT PERSON:
John Horton, Public Works Director

BRIEF HISTORY & ANALYSIS: The Bondurant City Council approved a professional services agreement on July 10, 2023 for HR Green to prepare this Pavement Management Program Plan.

Pavement Management is a program that carries out an important City policy. The policy objective is to improve overall street conditions in an efficient manner that maximizes public benefits. This proactive approach is important for a municipality tasked with maintaining infrastructure for approximately 10,000 residents.

The City of Bondurant has an average road condition score of 78.0, based on estimates from the Iowa Pavement Management Program. This score places the Bondurant pavement network slightly above average condition when compared to similar-sized municipalities in Iowa. This score can easily be attributed to the addition of new paved streets to the network. When looking at trends based on functional classification, the plan shows that most of the street network in Bondurant had been stable or on the decline until 2017-2019 when both arterial and local roads saw significant improvements, likely due to a large influx of new street systems in Bondurant. While Bondurant has many reasons to be proud of its 78.0 pavement condition score, this doesn't mean that there is no work to be done.

This attached plan, prepared by HR Green, includes the following topics/processes:

- Review the City's standards for street pavement design and construction/maintenance practices.
- Develop an inventory of the City's Streets system.
- Evaluate the system's current roadway conditions using data provided by the Iowa Pavement Management Program.
- Determine major rehabilitation and reconstruction alternatives and trigger thresholds for use in the data analysis and projections.

- Create a comprehensive pavement management model using the IPMP data and the Pavement Management Sofetware dTIMS BA.
- Develop a 15-year rehabilitation/reconstruction analysis schedule with annualized costs for various budget and performance-based scenarios to make recommended annual budget and performance recommendations.
- Develop a 10-year capital improvement plan based on the agreed upon recommendations.

The findings of this Pavement Management Program Plan process include the following:

- Maintain a Hybrid CityPCI goal of 70 for Local Streets and 75 for Collectors and Arterials.
- Clearly establish a dedicated budget for Pavement Management activities.
- Steadily increase average annual spending on roadway improvements to approximately $1.2 million per year.
- Maintain an ideal Rehabilitation budget share of about 80%, Reconstruction budget share of around 10%, and Restoration share of at least 10%.
- Implement the 10-year capital Improvement Plan included as part of the Pavement Management Program Plan.

Included as an attachment to this agenda statement is also HR Green's PCC Pavement Design Standards Review and Recommendations Report. This report was created in conjunction with this Pavement Management Program process and will be utilized when the City adopts the recommendations provided in the report as a formal policy and/or ordinance.

The purpose of this item is to adopt the pavement management program plan.

FUNDING SOURCE: NA - this should save the City money in the future.

STAFF RECOMMENDATION: Approve resolution on a roll call vote.

APPROVED FOR SUBMITTAL:

ATTACHMENTS:
1. RESOLUTION NO. 240617-135
2. Bondurant PMP
3. Bondurant PMP Design Standards

CITY OF BONDURANT
RESOLUTION NO. 240617-135

RESOLUTION ADOPTING THE PAVEMENT MANAGEMENT PROGRAM

WHEREAS in May 2023 the Bondurant City Council hired HR Green to create a Pavement Management Program Plan; AND

WHEREAS Pavement Management is a program that carries out an important policy, with the policy being to improve overall street conditions in an efficient manner that maximizes public benefits; AND

WHEREAS this proactive approach is important for a municipality tasked with maintaining infrastructure for approximately 10,000 residents; AND

WHEREAS included as part of the plan is a 15-year rehabilitation/reconstruction analysis schedule with annualized costs for various budget and performance-based scenarios to make recommended annual budget and performance recommendation; AND

WHEREAS included as part of HR Green's Pavement Management Program scope of work was a PCC Pavement Design Standards Review & Recommendation Memo; AND

WHEREAS it is anticipated the Bondurant City Council will consider formally adopting the recommendations of the PCC Pavement Design Standards Review & Recommendation Memo through a policy and/or ordinance.

NOW, THEREFORE, BE IT RESOLVED, by the City Council of the City of Bondurant, Iowa, that the Pavement Management Program is hereby adopted.

Passed this 17th day of June 2024,

By: _____
Doug Elrod, Mayor

ATTEST: I, Shelby Hagan, City Clerk of Bondurant, hereby certify that at a meeting of the City Council held on the above date, among other proceedings the above was adopted.

IN WITNESS WHEREOF, I have hereunto set my hand the day and year above written.

_____
Shelby Hagan, City Clerk

Name	Yay	Nay	Abstain	Absent
Cox				
Driscoll				
McKenzie				
Peffer				
Sillanpaa				

City of Bondurant

Pavement Management Program

FY 2026-2035

Bondurant

HRGreen®

Building Communities. Improving Lives.

ACKNOWLEDGEMENTS

MAYOR

Doug Elrod, Mayor

CITY COUNCIL

Bob Peffer, Council Member/ Mayor Pro Tem

Chad Driscoll, Council Member

Tara Cox, Council Member

Angela McKenzie, Council Member

Matt Sillanpaa, Council Member

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John Bergeson, Public Works Operations Coordinator

HR GREEN

Larry Stevens, PE, Project Manager

Caleb Jansen, EIT, Engineer

Holly Manternach, PE, Engineer

IOWA PAVEMENT MANAGEMENT PROGRAM

Inya Nlenanya, PhD; Technical Support and Data Delivery

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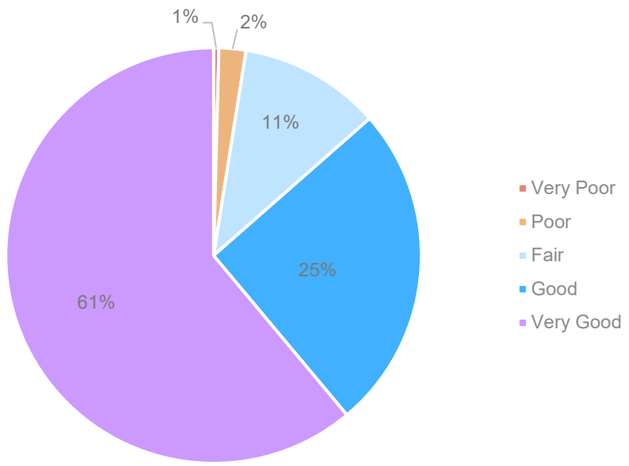
EXECUTIVE SUMMARY

The City of Bondurant is a city of approximately 8,035 residents located in Polk County, Iowa. Part of the Des Moines metropolitan area, the city currently maintains approximately 50 miles of paved roads.

The City of Bondurant has an average condition rating of **78.0**, based on estimates from the Iowa Pavement Management Program's (IPMP) condition assessment. This score places the Bondurant pavement network slightly above average condition when compared to similar sized municipalities in Iowa. It is a desire to ensure streets are maintained efficiently and effectively that led Bondurant to contract with **HR Green, Inc.** to improve their pavement management program.

Pavement management is a *program* that carries out an important City *policy*. The policy objective is to maintain overall street conditions in an efficient manner that maximizes public benefits. This proactive approach is important for municipalities with a growing pavement network such as Bondurant.

2021 PCI (Pavement Condition Index) Distribution



The goals of this pavement management program are to:

- Review the City's standards for street pavement design and construction/maintenance practices
- Develop an inventory of the City's Street system
- Evaluate the system's current roadway conditions using data provided by the Iowa Pavement Management Program (IPMP)
- Determine major rehabilitation and reconstruction alternatives and trigger thresholds for use in the data analysis and projections.
- Create a comprehensive pavement management model using the IPMP data and the Pavement Management Software dTIMS BA™
- Develop 15-Year rehabilitation/reconstruction analysis schedules with annualized costs for various budget and performance-based scenarios to make recommended annual budget and performance recommendations
- Develop a 10-year capital improvement plan based on the agreed upon recommendations

The City's current pavement rehabilitation treatment alternatives and project determination process were reviewed. A set of preferred treatment alternatives and appropriate selection criteria were developed to create a toolbox of potential treatments available for the city to use.

Pavement Condition Data has been collected statewide for all public roads in Iowa since 2013. This is done through the **Iowa Pavement Management Program**, which is funded by the Iowa Department of Transportation and is operated by the Institute for Transportation at Iowa State University. The data collection consultant for the IPMP uses a specialized van outfitted with an array of sensors and drives every paved road in the state to collect information about the pavement distresses visible on the surface. Prior to 2020, this data was collected every two years, but beginning in 2020, collections were reduced to once every four years, with the option given to municipalities to opt in to every two year collections.

The most recent data collection for Bondurant was in 2021 and was very useful for assessing conditions in Bondurant and developing a comprehensive inventory in GIS. Pavement distresses were collected for each roadway segment, which was used compute a City Pavement Condition Index (CityPCI) score. This index assigns each road segment a score from 1-100 based on observed distresses.

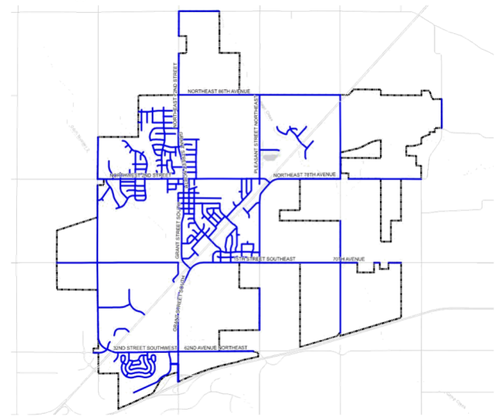
Based on the 2021 CityPCI results, Bondurant has an **average score of 78.0/100**, which places the average road at the top end of the "Good" category. For Bondurant, most of the poorer-conditioned streets appear to be concentrated to primarily local streets, as these make up the vast majority of the city's roads.

Using the IPMP data, existing City resources, and input from City staff, a pavement management model was created using the **dTIMS Business Analytics™ software**. This model was then used to analyze various funding and performance-based scenarios for the Bondurant capital improvement program. The findings of the investigation determined the following target performance metrics:

- Maintain a Hybrid CityPCI goal of 70 for Local Streets and 75 for Collectors and Arterials.
- Clearly establish a dedicated budget for Pavement Management activities
- Steadily Increase average annual spending on roadway improvements to approximately $1.2 million per year.
- Maintain an ideal Rehabilitation budget share of about 80%, Reconstruction budget share of around 10%, and Restoration share of at least 10%.
- Finally, the results of the scenario modeling exploration were incorporated into the pavement management model which was used to generate an objective 10-Year Capital Improvement Plan (CIP). The project list is optimized for the most effective use of available funds, based on the pavement condition data. The complete list of recommended projects and maps can be found in **the Appendix A:** Capital Improvement plan on **page 35**

These lists and maps will serve as a useful tool to assist City staff during the project planning process, but they do not replace engineering judgement. Project types may change from what is in the CIP, and projects will likely move between phases or leave the plan for various reasons, such as changes including field conditions not captured by the IPMP data or required utility improvements.

This document is not the end of the Pavement Management Program, however. Not only do the projects need to be constructed, but this should be considered a **"Living Document"** because it needs to shift and change with the conditions of the streets as well as the needs of its citizens. The City has the option to receive new IPMP data every 2 years, which provides a regular opportunity for renewing the pavement management model and adjusting the plan based on new information.



BACKGROUND

The City of Bondurant, located in Polk County, Iowa, maintains a roadway network consisting of just over 50 centerline miles of streets and is a part of the Des Moines metro area, the largest metropolitan area in the state.

A limited streets program budget, primarily funded through Road Use Tax funds, requires city staff and elected officials to make difficult decisions when determining annual maintenance and reconstruction expenditures. There is not a fixed annual budget for roadway improvements in Bondurant, though over the past 5 years the city has historically spent between $200,000 and $300,000. Other funds, in the form of grants, TIF Funds or special bonds may also be used for large construction projects on an as needed basis.

Until now, the City's framework for determining which streets to repair has been normally governed by the professional judgement of City staff. Staff knowledge is critical to identifying projects and determining the appropriate treatments, but, at a systematic planning level, there are better techniques and powerful software tools to help optimize the process.

INTRODUCTION

The City contracted HR Green, Inc. (HRG) to complete a Pavement Management Plan. This project will help the City develop an objective, data driven, and sustainable approach to managing its roadway assets as well as to budget for future needs. HRG's effort involved the following actions:

- Review the City's standards for street pavement design and construction/maintenance practices
- Develop an inventory of the City's street system
- Evaluate the system's current roadway conditions using data provided by the Iowa Pavement Management Program (IPMP)
- Determine major rehabilitation and reconstruction alternatives and trigger thresholds for use in the data analysis and projections.
- Create a comprehensive pavement management model using the IPMP data and the Pavement Management Software dTIMS BA™
- Develop 15-Year rehabilitation/ reconstruction analysis schedules with annualized costs for various budget and performance-based scenarios to make recommended annual budget and performance recommendations
- Develop a 10-year capital improvement plan based on the agreed upon recommendations

Data evaluation was restricted to the previous 10 years based on the typical duration of the City's Capital Improvement Program (CIP), as well as data availability from IPMP, which began providing statewide coverage in 2013.

WHAT IS PAVEMENT MANAGEMENT?

Pavement Management is a *program* that carries out an important City *policy*. The policy objective is to improve overall street conditions in an efficient manner that maximizes public benefits. This proactive approach is important for a municipality tasked with maintaining roadway infrastructure for approximately 8,000 residents.

Using Pavement Management methodology, HR Green developed recommendations using the right pavement treatment, at the right time, on the right road. Large amounts of pavement condition data were collected and analyzed with complex computer models (further described in **Methodology Section**) to determine the best use of funds to maintain the overall condition of the City's road network. This report is the culmination of those efforts and includes a 10-year plan of recommended projects based on optimal annual expenditures on maintenance, rehabilitation, and reconstruction of public streets.

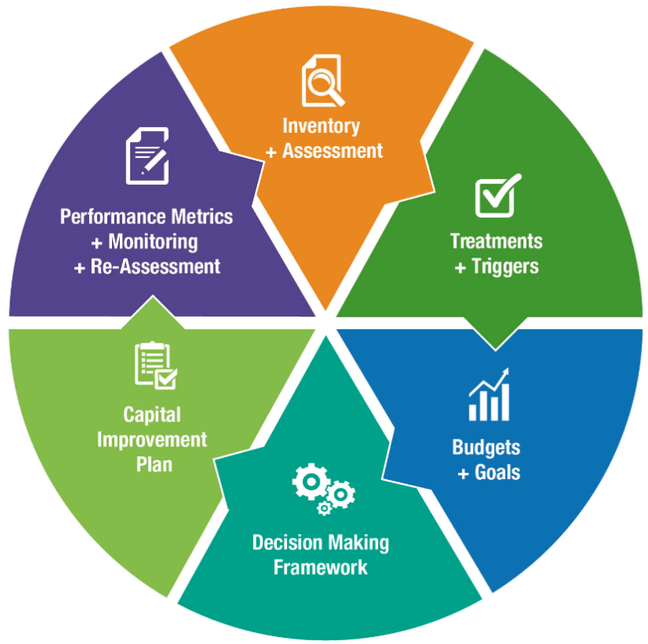


FIGURE 1: PRIMARY COMPONENTS OF PAVEMENT MANAGEMENT

The diagram above illustrates the six primary components of pavement management. Details of the components can be found in the methodology section

PAVEMENT LIFE CYCLES

Pavement management techniques are important as pavements do not decay at a constant rate over time. Time is a crucial factor in how much investment it takes to repair a road back to a serviceable condition. New pavement will not change drastically over the early years of its life; however, sharp declines can occur quickly with older pavements. Without intervention, pavements will eventually reach a failing status.

Small investments at appropriately-designated times can drastically improve and extend pavement life. Rehabilitating a pavement in “Fair” condition, for example, will usually cost less than 25% of reconstructing a failing pavement while extending pavement life significantly. As a result, it is important to invest wisely and early. This plan sets the City of Bondurant on a course towards this practice.

Before an ideally-maintained roadway network can be addressed, however, many of the worst roadways will require reconstruction or rehabilitation. Pavements within the “Poor” condition category will, in most cases, be deferred or given light maintenance with the intent of reconstructing before reaching “Very Poor” condition. This effectively saves money and squeezes the most life out of the network while still giving the opportunity to practice ideal Pavement Management elsewhere in the community.

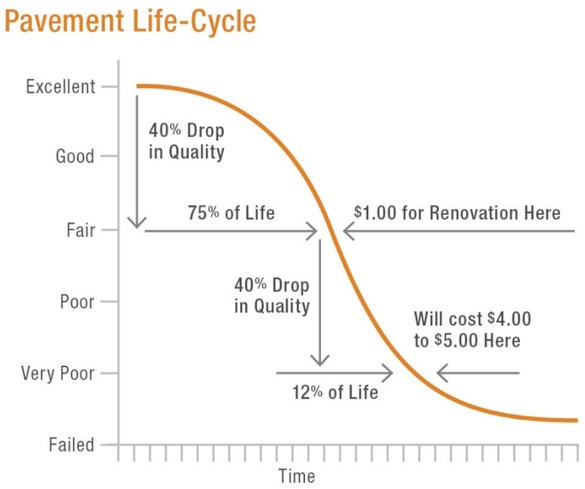


FIGURE 2:PERFORMANCE CURVE

Renovating a pavement in “Fair” condition will usually cost less than 25% of reconstructing a failing pavement.

METHODOLOGY

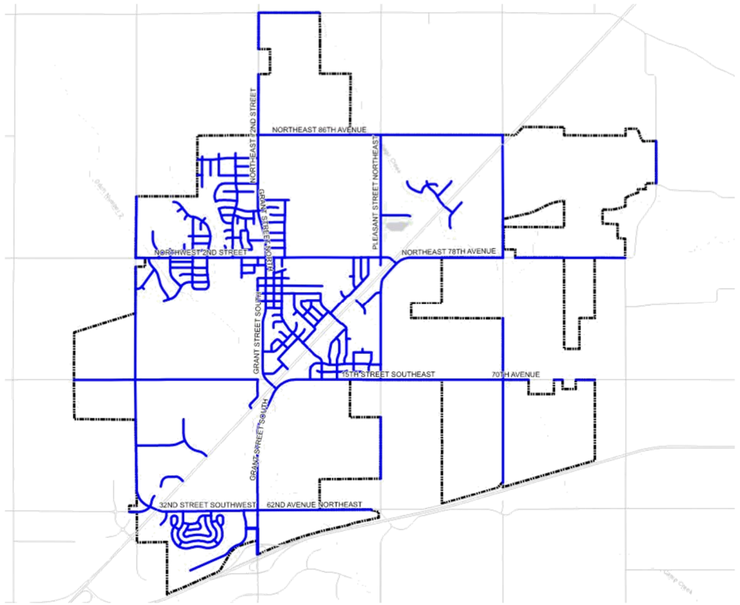
DATA COLLECTION

BASE INVENTORY

The first step in any Pavement Management Program is to develop an accurate inventory of streets. HR Green collected detailed GIS information and various historical reference material outlining its current network.

The majority of this baseline inventory data came from the Iowa DOT's Roadway Asset Management System (RAMS). This database resource was substantially complete and offered a reasonable level of detail for creating this program.

Some spatial manipulation and data filtering was required to make better use of the base files for modelling purposes. This included eliminating or combining short segments, ensuring accurate intersection contiguity, and developing a linear reference model.



PAVEMENT DISTRESS DATA

After the inventory was established, the condition was then determined for each asset. This assists with prioritizing roadways by their current level of serviceability as well as helping estimate their respective remaining life spans.

Roadway pavement condition data were collected by an automated data collection vehicle, like the "Pathrunner" used by Pathways Services Inc., the Iowa DOT's data vendor. This is a van outfitted with an array of sensors and cameras that automatically collect data on and around the road. The data that is collected primarily includes information on cracking, potholes, faulting, spalling, rutting, etc. Examples of specific pavement distresses can be found in the **Example Pavement Distresses Section.**

The pavement condition data was then processed and aggregated using the existing RAMS roadway segmentation for use in ESRI ArcGIS™ (a mapping and data analytics software) by the Iowa Pavement Management Program (IPMP). IPMP's services are provided through Iowa State University's Institute for Transportation, which is the agency currently supporting Iowa DOT's pavement management data collection.

FIGURE 3: A "PATHRUNNER" AUTOMATED DATA COLLECTION VEHICLE (PATHWAYS)

This is one of the van's that a previous data collection vendor used to collect pavement condition in Iowa.

The collected pavement distress data were then combined into a Pavement Condition Index (PCI) for each street. A PCI is used to help more concisely communicate a road's pavement condition by rating it on a scale from 0 to 100, with 0 representing a failed pavement that has essentially turned completely to rubble and 100 representing an excellent pavement from a freshly paved street that is only a few days old. This plan uses the CityPCI method for calculating condition indices for urban areas in Iowa, as developed by the IPMP technical subcommittee.

Using this index as a guide, each of the roads was then placed into a condition category ranging from "Very Poor" to "Very Good." All the data was then appended with additional information regarding traffic, functional class, number of lanes and the like, then stored within both GIS and dTIMS BA databases so that it could be analyzed in the pavement management models.

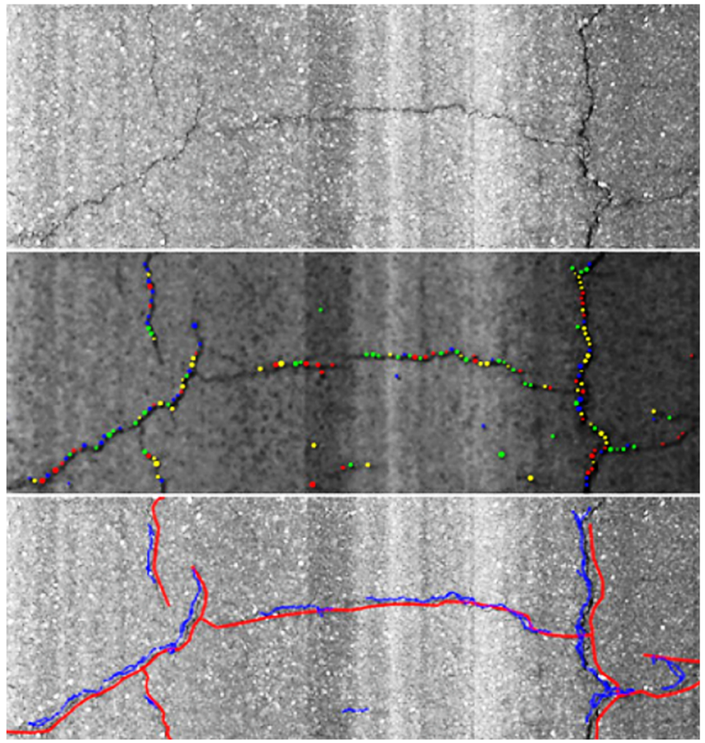


FIGURE 4: AUTOMATED CRACK ANALYSIS SOFTWARE

This picture is a screenshot of an automated crack detection software that uses elevation information and photogrammetry to identify distresses and categorize their severity

EXAMPLE PAVEMENT DISTRESSES

FIGURE 5: EXAMPLE OF ALLIGATOR CRACKING (ASTM)

This image is from the ASTM D6433 "Standard Practice for Roads and Parking Lots Pavement Condition Index Surveys." Alligator Cracks are when pavement breaks into a "scaly" pattern typically caused by fatigue, either from repeated heavy loads, lack of sufficient subgrade support, or weakened material due to drainage issues.

FIGURE 6: EXAMPLE OF BLOCK CRACKING (ASTM)

This image is from the ASTM D6433 "Standard Practice for Roads and Parking Lots Pavement Condition Index Surveys." Block cracks are when pavement breaks into "chunks" or "blocks" that are roughly rectangular, caused by internal stress from temperature or lack of lateral support.

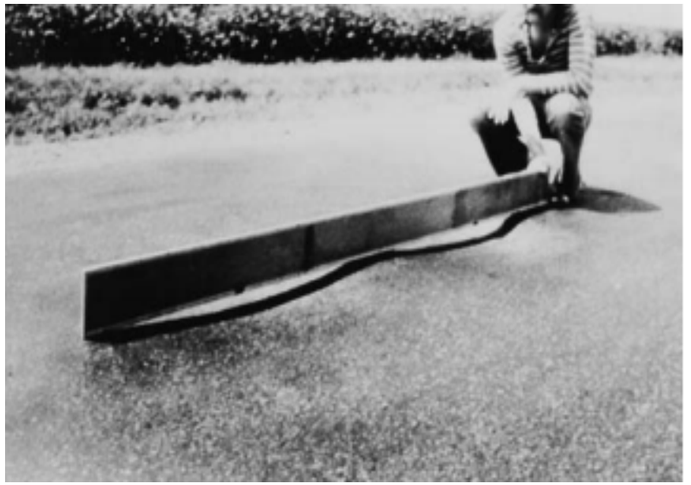


FIGURE 7: EXAMPLE OF DISTORTION (ASTM)

This image is from the ASTM D6433 "Standard Practice for Roads and Parking Lots Pavement Condition Index Surveys." Distortions are when the pavement warps its shape without much cracking. Typically caused by shifting or displaced underlying material.

FIGURE 8: EXAMPLE OF TRANSVERSE CRACK (ASTM)

This image is from the ASTM D6433 "Standard Practice for Roads and Parking Lots Pavement Condition Index Surveys." A common distress caused by a wide variety of issues.

FIGURE 9: EXAMPLE OF PATCHING (ASTM)

This image is from the ASTM D6433 "Standard Practice for Roads and Parking Lots Pavement Condition Index Surveys." Patching is the result of corrective actions already taken and is indicative of underlying issues as well as a common point of failure.

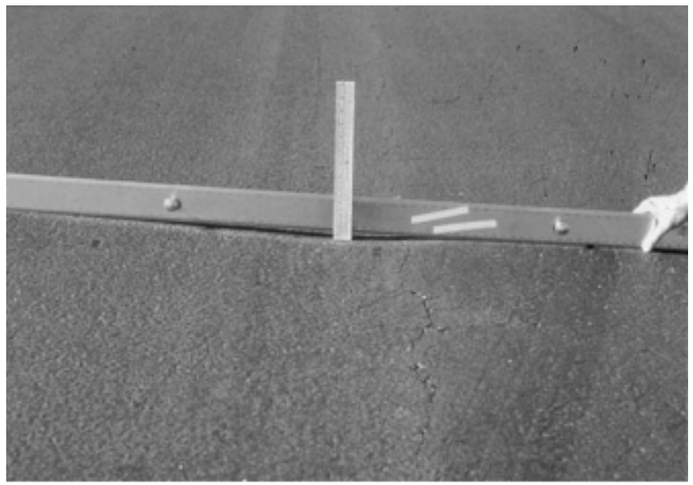


FIGURE 10: EXAMPLE OF RUTTING (ASTM)

This image is from the ASTM D6433 "Standard Practice for Roads and Parking Lots Pavement Condition Index Surveys." Rutting is a depression along the wheel-path caused by traffic loads.

CONDITION THRESHOLDS

The Pavement Condition Index (CityPCI) used in this plan helps differentiate and prioritize between individual streets, but due to the sampling methodology used by the data collection vendor **it should not be interpreted as a 100% accurate,** infallible rating. The difference between a 52/100 rating and a 55/100 could be only a few cracks. Since the data collection vehicle typically only drives one side of the street it may occasionally miss a few distresses near the middle, or the other side could be in slightly better/worse condition. A difference of a few points one way or the other should not be interpreted as a definitive ruling on one street being better than the other. **Changes in PCI less than 10 points are, in most cases, imperceptible to the naked eye.**

Instead of using CityPCI literally, condition categories were assigned to each street based on where the value fell on the 0 to 100 scale. For example, pavements with CityPCI ratings below 20 are considered to be “Very Poor” while those above 80 would be “Very Good.” This was done to help with understanding and assessment of the ratings, as well as to allow them to be used in a practical sense

FIGURE 11: CONDITION THRESHOLDS

This chart shows the proposed relationship between CityPCI, and the condition categories used in this plan.

FIGURE 12: EXAMPLE OF “VERY GOOD” CONDITION (PCC) – ALEXANDER DR.

This picture of Alexander Drive was rated a very high PCI of 90 /100 because it demonstrates no visible pavement distresses.

FIGURE 13: EXAMPLE OF “VERY GOOD” CONDITION (PCC) – EVERGREEN DR.

This image of Evergreen Dr shows an example of a “Very Good” PCC pavement, and it was rated as a perfect 100/100.

A score of 80/100 or greater is considered “Very Good.” Roads with pavement in “Very Good” condition exhibit very few surface distresses, if any, and those that are apparent will be very low in severity. Most often, these pavements will be relatively new. The average age of “Very Good” pavements in Bondurant is likely less than 15 years, meaning they were either recently constructed or rehabilitated with an overlay in the past few years. As such, it is not feasible to expect every street in a city to be “Very Good” because it would be prohibitively expensive to resurface every street in only 15 years’ time.

Pavements with CityPCI scores between 61 and 80 are considered to be in “Good” condition. The distresses on these streets are more noticeable but do not cause much concern because they are minor and infrequent. Most drivers will not even notice the few cracks and distortions. Regular maintenance activities like crack sealing can help prevent the spread of these deficiencies and preserve these pavements for quite some time for low costs. The average Bondurant streets would be classified in this category.

FIGURE 14: EXAMPLE OF “GOOD” CONDITION (HMA) – 2ND STREET SE

This picture of 2nd St between Blaine St and Deer Ridge Dr was rated as 66/100, which would be considered Good for an HMA pavement. Small transverse cracking and rutting is noticeable on this pavement.

FIGURE 15: EXAMPLE OF “GOOD” CONDITION (PCC) – 5TH STREET SE

This image shows an example of a PCC pavement in “Good” condition. 5th St SE was rated as 73/100, because some roughness and minor cracking.

“Fair” streets (CityPCI 41-60) have quite noticeable distresses. Either many low severity distresses, or a few high severity distresses. These will still not impact drivers very much, however.

FIGURE 16: EXAMPLE OF “FAIR” CONDITION (PCC) –ALPHA STREET

This image of Alphas St is an example of PCC pavement in “Fair” condition, with a PCI of 59/100. There are very noticeable distresses but only on a handful of panels.

FIGURE 17: EXAMPLE OF “FAIR” CONDITION (ACC) – 2ND STREET

This picture of 2nd St near Snyder St is an example of an ACC pavement that was rated as 45/100 which would be considered “Fair.” It has some transverse and alligator cracking.

At this point in a pavement’s life, it is about 75% of the way through its expected serviceability. It will begin deteriorating much more quickly and fall into “Poor” (21-40) or “Very Poor” (1-20) in only a few years, if neglected. However, because the distresses on “Fair” streets are still minor, this is often the ideal time to Rehabilitate them affordably. On the other hand, pavements that deteriorate further, into the “Poor” and “Very Poor” categories, will likely require Reconstruction, which is very costly.

FIGURE 18: EXAMPLE OF “POOR” CONDITION (PCC) – 4TH STREET NE

This image shows a PCC street whose pavement is rated as 33/100. 4th St is considered to be in “Poor” condition due to rideability issues caused by settlement and cracking.

FIGURE 19: EXAMPLE OF “POOR” CONDITION (PCC) – 11TH STREET SE

This image shows a PCC street whose pavement is rated 25/100 and considered “Poor” due to a large number of failures and cracking.

FIGURE 20: EXAMPLE OF “VERY POOR” CONDITION (PCC) – BRICK STREET SE

This image is an example of a PCC pavement in “Very Poor” condition. Brick Street SE is considered one of the worst condition roads in the system due to widespread joint failure and many cracked panels.

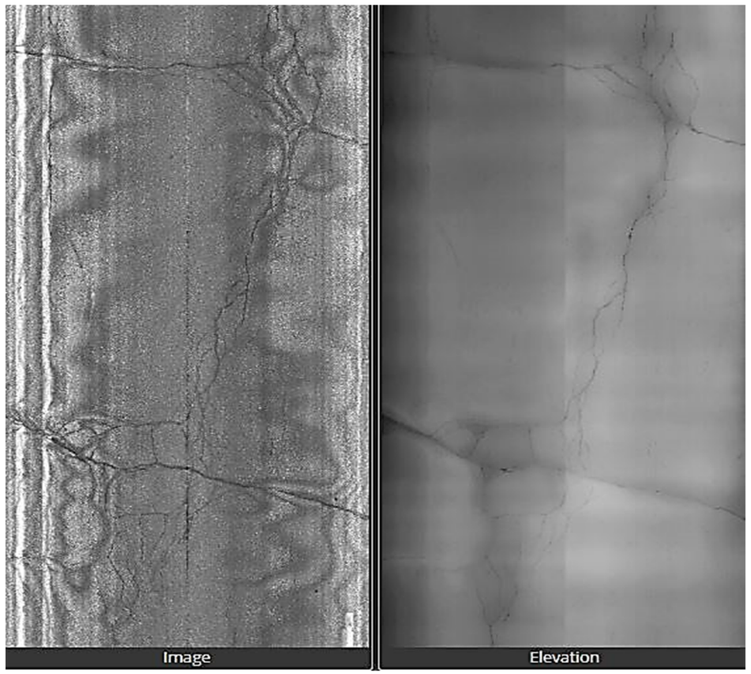


FIGURE 21: ROADWAY IMAGERY OF A “FAIR” ACC PAVEMENT

THIS IMAGERY IS FROM THE SECTION OF 2ND STREET SHOWN. THESE WERE CAPTURED BY THE DATA COLLECTION VEHICLE’S DOWNWARD FACING CAMERA (LEFT) AND LIDAR ARRAY (RIGHT). THESE ARE ONE OF THE KEY RESOURCES USED IN EVALUATING PAVEMENT CONDITION.

FIGURE 22: EXAMPLE OF “VERY POOR” CONDITION (PCC) – 10TH STREET SE

This image shows a PCC street whose pavement is rated as 11/100 and considered to be in “Very Poor” condition. 10th St east of Lincoln Ct has point failures and significant cracking.

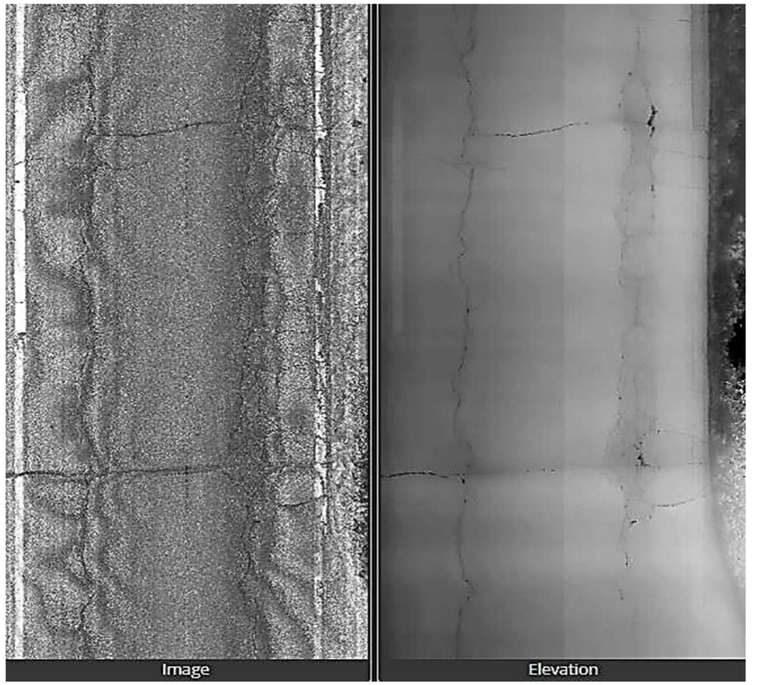


FIGURE 23: ROADWAY IMAGERY OF A “FAIR” ACC PAVEMENT

This imagery is from the section of 2nd Street. These were captured by the data collection vehicle’s downward facing camera (left) and LIDAR array (right). These are one of the key resources used in evaluating pavement condition

DTIMS BUSINESS ANALYTICS (PMS)

A Pavement Management Software (PMS) is a decision-making tool that assists a city in making cost-effective decisions related to the maintenance and rehabilitation of roadway pavements. It provides a process or system for rating pavement condition, establishing a consistent maintenance and repair schedule, and evaluating the effectiveness of maintenance treatment strategies.

The PMS used by the City of Bondurant is called “Deighton Total Infrastructure Management System: Business Analytics” or dTIMS BA. This software was developed by Deighton Limited as an asset management software capable of storing all sorts of physical infrastructure assets and specializes in how it uses heuristic algorithms to optimize spending patterns. For the purpose of this analysis, dTIMS BA utilized the Federal classification of pavement for consistency.

Each road is separated into pavement management sections, typically broken up by city block or by other physical features like bridges and railroads. Segments are associated to the road, as a whole, using a “Linear Reference System” where each segment would appear in sequence based on its distance from the start of the road. The pavement distress data, including the CityPCI ratings, are then imported into the web-based software and were used to develop a customized pavement management model for the City of Bondurant

The dTIMS BA model is a collection of the raw distress data, equations, variables, and rules for treatment applications as well as their effects. Some of the most important equations used are the performance curves which dictate the behavior of pavements over time.

PERFORMANCE CURVES

Different types of pavements behave differently, and different classes of road have different stressors. To accommodate these factors, a pavement life cycle curve was developed for asphalt and concrete pavement types. separated further by the type of road, either Arterial, Collector, or Local/Residential.

These curves were calibrated to follow the general assumption that a pavement reaches “Fair” condition at 75% of its design life and “Very Poor” condition at the end of its design life. These curves do not necessarily represent the traditional design life-cycle curve; instead, they address the performance of the pavement and how much longer we can realistically expect it to last without having to determine the structural characteristics and history for every street in the City.

Each pavement management section has an effective “performance age” that determines its behavior. This performance age is determined based on previous data collections. Using that data, a rate of deterioration can be determined for each street individually and then fit to the appropriate family curve. The CityPCI rating is then projected along the curve and tested to see if various treatments would be appropriate at each point along the individual performance curve.

Other curves were similarly created for specific distresses, such as Alligator Cracking, Spalling/D-Cracking, and Rutting. These distresses progress in predictable ways and occasionally preclude certain types of treatments from being applied. For example, a street with severe rutting (> 0.5”) would not be a good candidate for a slurry seal or thin overlay. Conversely, if these distresses progress past a certain allowable threshold, more expensive treatments, like reconstruction, will be selected as the only reasonable option even if the CityPCI would not necessarily indicate that on its own.

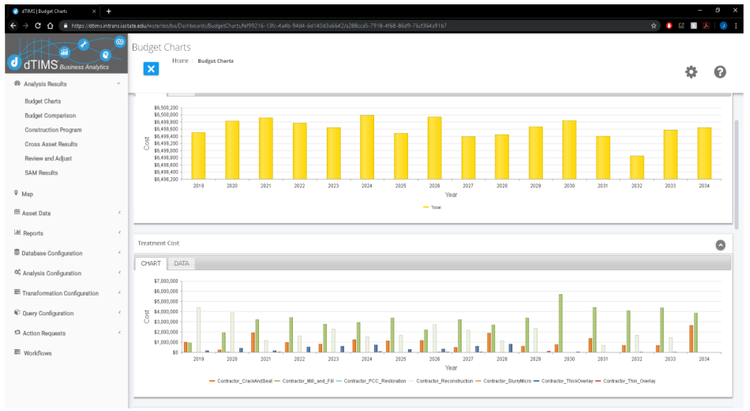
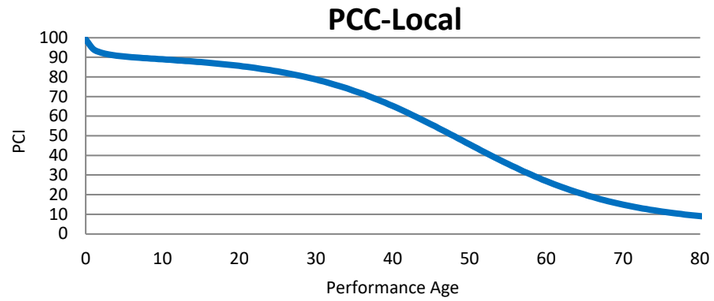
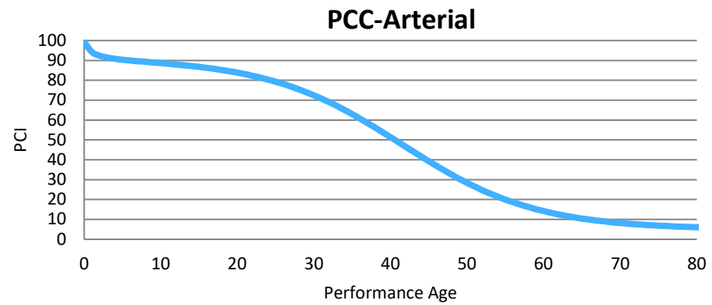
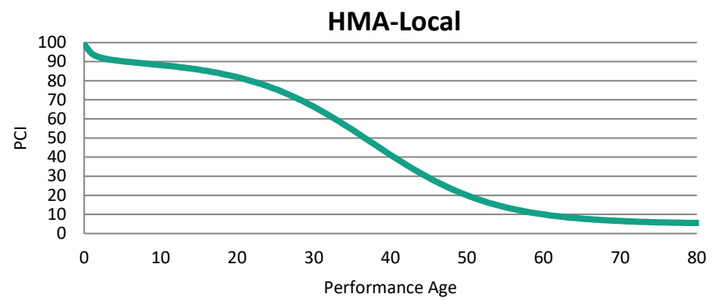


FIGURE 24: DTIMS BA INTERFACE

The dTIMS BA software is accessed through normal computer browsers and operates over cloud-based technology. Calculations are performed on remote servers, meaning any computer can use it, regardless of hardware capabilities!







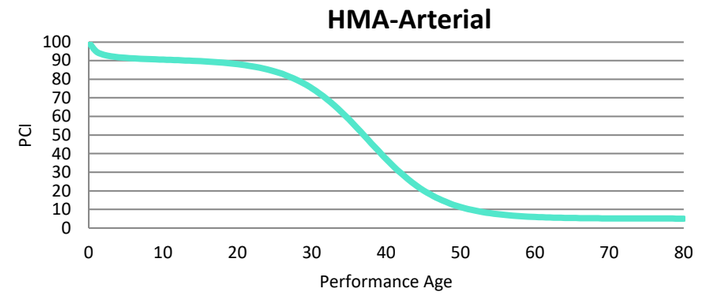


FIGURE 25: PAVEMENT PERFORMANCE CURVES

These 4 curves are the pavement performance curves utilized in the Bondurant dTIMS BA model.

TREATMENT ALTERNATIVES

> **"The success of a pavement-preservation program is based on selecting the right treatment for the right pavement at the right time" (FHWA).**

A single pavement treatment, when properly applied, can extend the life of a roadway by as much 15 years. Before a decision on when and where a treatment can be applied, an agency must know what treatments it will consider. Dozens of potential products and techniques are available; however, not all treatment options are feasible, affordable, or effective. Climate, cost, and capability considerations must be made ahead of time.

The group of treatments available for a given municipality can be thought of as a "toolbox" filled with options appropriate for the tasks they would expect to encounter. The toolbox recommended for the City of Bondurant consists of three primary types of treatments often referred to as the 3 R's of Pavement Management: **Reconstruction, Rehabilitation, and Restoration.**

Every pavement will eventually deteriorate to a point that it cannot effectively be repaired in an economical fashion, leaving reconstruction as the only viable option. Reconstructing a road from the base up is always an appropriate and effective treatment, but it is also typically the most expensive solution. As such, rehabilitation fills an important role in a pavement's life-cycle.

Rehabilitation treatments usually cost significantly less than full reconstruction and can extend a pavement's life substantially. Rehabilitation treatments in this section are split into major and minor variations. The former provides structural improvements to help a deteriorated pavement recover, whereas the latter provide relatively smaller improvements and are typically more preventative in nature.

Restoration treatments, sometimes referred to as "preservation" or "maintenance", are those applied regularly to prevent issues from developing or to prevent existing problems from spreading.

Construction standards and specifications for the following treatment alternatives should follow the Iowa **Statewide Urban Design and Specification (SUDAS)** manual, where applicable. These research-backed approaches to construction and pavement management techniques will extend pavement life beyond traditional methods. Often costing more, the increased performance life still makes it the cost-efficient and sustainable approach, long-term.

RECONSTRUCTION

Reconstruction of pavements is often the only way to save a deteriorated roadway. Unfortunately, these needs usually outstrip available funding. This treatment type should be reserved for pavements that cannot be salvaged through rehabilitation or on high-profile corridors where safety and capacity needs are paramount.

When reconstructing a pavement, the City can use any material they wish. Most commonly for Bondurant, Full-depth PCC is used. However, full-depth HMA may be considered when design constraints warrant. To provide for this option the City may want to consider using "bid-alternates," where contractors can bid based on the equivalent design of their choice.

FIGURE 26: RECONSTRUCTION OF I-94 (NDDOT)

This photo shows the Construction of a brand-new asphalt cement concrete pavement

FIGURE 27: RECONSTRUCTION OF DIVISION STREET

This photo shows a road during a PCC reconstruction project located in Swisher, IA.

MAJOR REHABILITATION

- Thick Overlay
- Mill and Overlay
- Overlay with Crack and Seat
- Major PCC Restoration

There are few substitutes for adding new concrete on top of old to help keep it functioning and healthy. HMA is the most commonly applied material (black-topping), but PCC (white-topping) is gaining acceptance in Iowa and is being applied in many locations as appropriate. HR Green recommends the use of HMA by default but also encourages the exploration of white-topping as a secondary option, where conditions allow and costs are comparable.

Major rehabilitations suggested herein are all variants of overlays where moderately-thick layers of HMA are placed upon existing pavements, sometimes with special preparations. **"Thick Overlays"** requiring a minimum of 3 inches of HMA is preferable for each treatment as any less will not provide significant structural benefit. However, amounts greater than 3 inches can become costly and sometimes may cause logistical difficulties. Overly thick HMA overlays can affect side street elevations, drainage patterns, driveways, and fill up curbs leaving little remaining to control storm water and delineate the edge of the roadway. A thick overlay is the most common rehab used in most agencies and, for the purposes of this report, is recommended to be placed near the end of a pavement's life.

FIGURE 28: HMA OVERLAY PLACED ON MILLED PAVEMENT (FAMARTIN)

This is a picture of an asphalt overlay placed on I-80 after part of the original pavement was milled off.

For full-depth HMA pavement, or one overlaid previously, milling off 2-3 inches of the top can provide significant benefits. It can help smooth the underlying pavement for the final surface, remove harmful defects, help create a more stable bond between pavements, and prevent the overlay from causing the referenced logistical difficulties with side streets, drainage, driveways, and curbs. **"Mill and Overlay"** treatments are a very useful tool that can help extend the life of a pavement. This is a common treatment for streets in Bondurant and will be play an important role in pavement rehabilitation moving forward.

Another major rehab treatment to consider on fairly stable and older PCC roads is called an **"Overlay with Crack and Seat."** This treatment uses the existing PCC roadway as a suitable base for what is effectively a new HMA pavement on top of it. The existing PCC is cracked using a drop-hammer apparatus, or other devices, to create a flexible base of concrete before placing 3 or more inches of HMA on top of it. This process may require the reconstruction of curbs if the depth of asphalt to be placed would be problematic; however, a milled edge notch may be utilized in some cases to eliminate the need for curb replacement. The new crack and seat pavement is typically a long-lived rehabilitation treatment as it is effectively a new road altogether.

FIGURE 29: PCC RESTORATION (CITY OF CEDAR RAPIDS)
This is a picture of a city maintenance crew in Cedar Rapids performing a panel replacement as part of a larger concrete restoration project.

The final major rehabilitation treatment recommended is **Major PCC Restoration.** This treatment is a holistic repair to a PCC pavement street, including any or all of the following actions: panel replacement, profiling, repairing utility cuts, full depth patching, and joint repair. PCC Restoration is more than simply pavement patching, it is strategic repair to existing deficiencies and can help save an otherwise stable road. A typical application removes and replaces around 20% of the existing pavement, to address specific localized issues. This type of repair could be performed by either city forces or outside contractors.

MINOR REHABILITATION

- Thin Overlay
- Minor PCC Restoration

Minor Rehabilitations fill a different role than Major Rehabilitations. They usually are placed to prevent moisture and seasonal weather effects like rain and heat from causing too much damage. These treatments typically provide a new "wearing surface" for vehicles to drive on instead of repairing the underlying pavement.

Thin Overlays are essentially the same treatment as a Thick Overlay; except they are 1-2 inches of HMA, instead of 3+ inches used for Thick Overlays. 1 ½ inches is the recommended thickness for Thin Overlay because, if it was thinner, it may be susceptible to cracking or rutting very quickly due to vehicle loads. Thin Overlays are also not appropriate on roadways with significant deformities (such as severe rutting) or structural distresses (such as severe alligator cracking or warping). It is also common to see the use of recycled asphalt and rubber materials in Thin Overlays which can reduce costs and possibly increase durability.

The other minor rehabilitation treatment recommended is **Minor PCC Restoration.** This treatment is essentially the same as Major PCC Restoration, which includes actions such as panel replacement, full depth patching, and joint repair. However, minor PCC Restoration only replaces around 10% of the existing pavement, which means it should only be used on PCC streets with limited distresses. This makes it a cheaper alternative to Major PCC restoration.

FIGURE 30: CRACK SEALING PERFORMED W/ ROUTING (USAF/KENNA JACKSON)
This is an example of crack sealing being performed with special preparation in the form of using a router to clean up the crack profile, as being performed by 35th Civil Engineer Squadron.

PRESERVATION

- Crack Sealing
- Diamond Grinding
- Microsurfacing
- Pavement Patching

Restoration treatments use simple techniques to seal defects from moisture infiltration and prevent them from spreading. Some of these treatments can also give streets a new wearing surface but provide no structural changes to the pavement. **Crack Sealing**, for example, is a standard maintenance practice, recommended to be performed by city forces every 3-5 years on a road. This treatment plays an important role in extending the life of pavements in good condition by preventing damage that could be caused by water over time.

> **Crack Sealing in a timely manner, and on a regular basis, is the most important tool in any pavement management program because will keep a pavement in good or fair condition much longer than it would without attention.**

Diamond Grinding is not a commonly applicable treatment, but due to its low cost should be considered when the conditions are appropriate. Diamond Grinding is best used when a weathered pavement is beginning to show signs of aggregate polishing to add texture back to it for cars, or when settling or warping caused minor faulting. Diamond Grinding can smooth those faults and leave an otherwise stable pavement intact with its ride significantly improved. It would not, however, be appropriate for pavements with substantial cracking or signs of structural deficiencies such as severe alligator cracking, spalling, or D-cracking.

FIGURE 31: PAVEMENT AFTER DIAMOND GRINDING (JOHN ROBERTS).
This picture shows the texture of PCC pavement after diamond grinding was used on it. The image was taken on a project near Chicago, Illinois.

Microsurfacing consists of a thin application like a slurry seal but uses a polymerized binder with finer aggregate. It can smooth over minor deformities while still adding a small amount of structural durability. It also creates a seal against water and wear. It is a versatile and relatively cheap treatment that can address a wide variety of distresses. A relatively new technique, it is not very common in the state of Iowa, yet. However, a few other larger municipalities in Iowa such as the City of Des Moines has recently invested heavily into this treatment method and begun incorporating it into their regular pavement management practices.

FIGURE 32: MICROSURFACING CREW AT WORK. (ERIC PULLEY).
This picture shows a crew using a Microsurfacing machine to lay a new surface on this street.

Pavement Patching is different from some of the other preservation treatments in that it is typically done by city forces after a pavement distress has already deteriorated to the point of becoming a more substantial issue. Patching is typically done with HMA, sometimes with partial removal of the area around the defect or distress. Patching is not intended to serve as a long-term fix, but serves mostly as a way to maintain service, and act as a stopgap until a more appropriate rehabilitation treatment can be applied.

FIGURE 33: HMA PATCHING WITH LOCALIZED PAVEMENT REMOVAL (KOMU)
This is an example of an asphalt patch applied with appropriate localized removals and some base repair.

PREFERRED TREATMENT ALTERNATIVES

TABLE 1: PRIMARY CAPABILITIES & FUNCTIONS OF HMA PAVEMENT PRESERVATION TREATMENTS

Source: Adapted from Johnson, Best Practices Handbook on Asphalt Pavement Maintenance, 2000.

Treatment	Reasons for Use						
	Friction	Raveling	Rutting	Potholes	Cracking		
					Low	Med	High
Crack Treatments							
Crack Repair with Sealing							
Clean and Seal					X	X	
Saw and Seal							
Rout and Seal					X	X	
Crack Filling						X	X
Full Depth Crack Repair							X
Surface Treatments							
Fog Seal		X					
Seal Coat	X	X					
Double Chip Seal	X	X					
Slurry Seal	X	X					
Microsurfacing	X	X	X				
Thin Overlay		X	X				
Pothole and Patching Repair							
Cold Mix Asphalt				X			
Spray Injection Patching				X			
Hot Mix Asphalt				X			X
Patching with Slurring or Microsurfacing Material				X			X

TABLE 2: GENERAL EXPECTED PERFORMANCE OF MAINTENANCE TREATMENTS

Source: Adapted from Iowa Statewide Urban Design and Specification guide.

Treatment	Expected Performance (Treatment Life), Years
PCC	
Crack Sealing	4 to 8
Joint Resealing	4 to 8
Partial Depth Patches	5 to 15
Full Depth Patches	10 to 15
Diamond Grinding	5 to 15
Pavement Undersealing/Stabilization	5 to 10
HMA	
Crack Filling	2 to 4
Crack Sealing	2 to 8
Pothole Patching	1 to 3
Full/Partial Depth Patches	3 to 15
Fog Seals	1 to 3
Slurry Seals	3 to 6
Microsurfacing	4 to 7
Bituminous Seal Coats	4 to 6
Double Chip Seal	7 to 10
Thin Overlays	7 to 10

All the treatments in this section may be considered for projects in Bondurant, although some are more preferred than others. The recommended CIP will not differentiate between types of projects within the same treatment category, as the actual treatment selection should be performed on a project-by-project basis and reviewed by a Professional Engineer. **Table 1** provides some simple guidance on which types of treatments are appropriate based on the distresses that a pavement presents and **Table 2** helps compare the effectiveness of each treatment over time.

The treatments used in the dTIMS model represent those expected to be the most common given certain conditions. These “preferred treatments” will likely comprise the majority of pavement preservation work performed in Bondurant. This list, however, is merely a tool to aid in budgeting and planning and not a prescriptive result. Rather, the results from dTIMS are categorical recommendations based on severity and types of surface distresses. These recommendations will then need to be individually assessed for appropriateness against similar treatment alternatives before it is designed and constructed.

ESTIMATED TREATMENT COSTS

One of the critical components in any financial planning endeavor is accurately predicting costs that will be incurred. In this case, the primary costs of concern are the design, construction, and ancillary costs associated with executing a roadway improvement project. Bondurant has historical information about its expenditures on roadway projects throughout the years showing significant increases in project costs. Future growth was accounted for via a 2.1% inflation[1,2,] factor applied to all project costs in dTIMS BA.

Treatment types were assigned planning-level costs by analyzing local cost information and tabulations of contractor bids for past projects, which were supplied by the City and from additional sources. Assumptions were made regarding mobilization rates, design fees, traffic control, and other ancillary costs based on percentages of the overall costs. Since the costs used in this report are planning-level, it is recommended that each project be reviewed during the annual capital improvement budgeting process. The City may elect to move projects around into different years or change the treatment type.

For most practical purposes, treatments within the same category are interchangeable because they will likely be appropriate for a project of a certain condition category. Regardless, the actual treatment applied should be based on comprehensive review and engineering judgement. When selecting the specific treatment to use on a given roadway segment, it may be useful to perform Life-Cycle Cost Analysis to evaluate the various treatment alternatives within the same category against each other, or even when considering leaving it to be reconstructed at a later time.

TREATMENT SELECTION CRITERIA

With the treatment alternatives selected for the toolbox, the criteria for selecting one treatment over another needed to be determined. Cost and funding availability are regularly the deciding factors for local agencies, getting the most benefit for the least amount of investment possible. Therefore, cost estimates for each treatment were developed using bid tabulations and project histories from various cities’ pavement management programs.

The other main factors in treatment selection are condition and distresses. The overall condition of a pavement should determine when it needs work and what type of work.

The types of distresses should then be considered when evaluating equivalent treatments based on appropriateness. **Table 3** includes a full overview of the treatment toolbox with descriptions, cost estimates, triggers, and the expected effects of each individual treatment alternative. This information is what will be used in the dTIMS BA scenario modelling process, to be performed as part of the Bondurant Pavement Management Program.

TABLE 3: TREATMENT ALTERNATIVE DETAILS

Category	Treatment	Description	Cost	Trigger
Reconstruction	Reconstruction	The complete reconstruction of a roadway and all associated improvements. This assumes new HMA pavement, but full-depth PCC or COM may be considered based on relevant design criteria.	$230/sy	PCI =Poor OR Very Poor
Major Rehabilitation	Crack and Seat Overlay	Asphalt Overlay, of at least 3 inches thick, with preparation including breaking up existing pavement and setting it up as a good structural base for the new asphalt surface. Effectively creates a new pavement.	$60/sy	PCI =Poor, Surface = PCC, Low D Crack
	Mill and Overlay	1.5 to 3 inches of asphalt pavement is milled off and then replaced with 3 inches of asphalt. Repairs surface issues and improves structural character.	$54/sy	PCI =Poor, Surface = HMA, IRI > 250, Moderate Alligator Cracking
	Thick Overlay with Interlayer	Asphalt Interlayer is an asphalt mix design growing in usage. This highly flexible, polymer modified asphalt can be used to add strength to traditional overlays. The usage of interlayer in thick overlays can further extend the life of a traditional thick overlay. ($150/tn)	$54/sy	PCI =Poor, Low D Crack, Low Spalling, Moderate Alligator Cracking, Moderate Patching
	Thick Overlay	Sometimes called a “Structural Overlay.” 3 inches of Asphalt that adds enough thickness to increase the durability of the roadway and provides a new wearing surface. Can be done with asphalt or PCC (black-topping/white topping) May require replacing curb and gutter.	$47/sy	PCI =Poor, Low D Crack, Low Spalling, Moderate Alligator Cracking, Moderate Patching
	Major PCC Restoration	Portions of the street in bad repair are torn out and replaced (approximately 20% of a street). This may include patching, full panel replacement, and full depth repairs at joints. Slightly improves overall condition and helps extend life by addressing problem areas before they spread	$45/sy	PCI = Fair, Surface=PCC
Minor Rehabilitation	Thin Overlay	A “non-structural overlay.” Laid on top of existing pavement; typically, 1-2 inches of asphalt. Improves smoothness and extends the life of roads in good to fair condition.	$35/sy	PCI =Poor or Fair, Low D Crack, Low Spalling, Low Alligator Cracking, Low Patching, Low Rutting
	Minor PCC Restoration	Portions of the street in bad repair are torn out and replaced (approximately 10% of a street). This may include patching, full panel replacement, and full depth repairs at joints. Slightly improves overall condition and helps extend life by addressing problem areas before they spread	$25/sy	PCI = Good, Surface=PCC
Restoration/ Preservation	Crack Sealing	Sealant on cracks and joints is used to prevent spreading and moisture from getting into the pavement structure. Deteriorated cracks may be routed or sawed out to provide better seal and bond.	$12,000/ Mile/Lane	Applied every time Last Work Done counter reaches a multiple of 4 years
	Diamond Grinding	Top ¼ inch to a ½ inch of PCC pavement is ground off and textured. This is only done on rough pavements with good structure to improve ride smoothness and increase vehicle traction for safety purposes.	$10/sy	PCI=Good, IRI>250, Low D Crack, Low Spalling, Low Alligator Cracking, Low Patching, Low Rutting
	Microsurfacing	Thin asphalt polymer that seals the pavement from weather effects and corrects for minor irregularities. Typically used as a preventative measure, rather than a corrective one.	$10/sy	PCI = Fair or Good, Low D Crack, Low Alligator Cracking, Low Patching, Moderate Rutting
	Pavement Patching	Asphalt placed at spot locations. Used only on good pavements with minor failures, or as a stopgap on poor pavements until a better, more permanent, solution is applied.	$5/sy	No trigger assigned

[1] Office of Management and Budget. (December 2022). Advisory Circular A-94. DISCOUNT RATES FOR COST-EFFECTIVENESS, LEASE PURCHASE, AND RELATED ANALYSES Appendix C

[2] Mack, J. W. Accounting for Inflation in Life Cycle Cost Analysis for Pavement Type Selection. Transportation Research Board, Vol. 12, No. 2686, 2011.

The treatment costs listed in **Table 3** are considered "all-in" numbers. These costs represent not only the materials to perform the construction of the project but all the expected costs that would be associated with the given treatment type. For example, the Reconstruction treatment includes costs related to storm sewer as that will be needed as part of the new pavement system. **Table 4** through **Table 15** provide example calculations for each of the treatment types. Note that these are **planning-level costs** only, however. While based on engineering judgement and historical bid tabulations, they are not a replacement for an engineering opinion of probable cost.

TABLE 4: RECONSTRUCTION COST CALCULATION

Reconstruction ($/SY)	
Excavation	$ 18.00
Subgrade	$ 3.00
Subbase	$ 14.00
Subdrain	$ 6.00
Storm Sewer*	$ 30.00
Pavement Removal	$ 9.00
Pavement (PCC)	$ 76.00
Driveways/Sidewalks	$ 17.00
Seeding/Paint Markings, etc.	$ 8.00
Mobilization, Traffic Control, Survey (15%)	$ 29.00
Contingency (10%)	$ 20.00
Total (Rounded Up)	**$ 230.00**

TABLE 5: CRACK AND SEAT COST CALCULATION

Crack and Seat w/ Overlay ($/SY)	
Crack and Seat	$ 5.00
Milling	$ 2.00
3" HMA Overlay @ $120/Ton	$ 20.00
Tack and Patch @ $250/Ton	$ 5.00
Curb and Gutter/Patching	$ 7.00
Driveways/Sidewalks	$ 6.00
Mobilization, Traffic Control, Survey (15%)	$ 8.00
Contingency (10%)	$ 7.00
Total (Rounded Up)	**$ 60.00**

TABLE 6: MILL AND OVERLAY COST CALCULATION

Mill and Overlay ($/SY)	
3" HMA Overlay @ $120/Ton	$ 20.00
Tack and Patch @ $250/Ton	$ 3.00
Milling	$ 3.00
Curb and Gutter/Patching	$ 7.00
Driveways/Sidewalks	$ 6.00
Mobilization, Traffic control, survey (15%)	$ 8.00
Contingency (10%)	$ 7.00
Total (Rounded Up)	**$ 54.00**

TABLE 7: THICK OVERLAY WITH INTERLAYER COST CALCULATION

Thick (3 In.) Overlay with Interlayer ($/SY)	
3" HMA Overlay @ $120/Ton	$ 20.00
HMA Interlayer	$ 7.00
Tack and Patch @ $250/Ton	$ 3.00
Curb and Gutter/PCC Patching	$ 7.00
Driveways/Sidewalks	$ 6.00
Mobilization, Traffic control, survey (15%)	$ 6.00
Contingency (10%)	$ 5.00
Total (Rounded Up)	**$ 54.00**

TABLE 8: THICK OVERLAY COST CALCULATION

Thick (3 In.) Overlay ($/SY)	
3" HMA Overlay @ $120/Ton	$ 20.00
Tack and Patch @ $250/Ton	$ 3.00
Curb and Gutter/PCC Patching	$ 7.00
Driveways/Sidewalks	$ 6.00
Mobilization, Traffic control, survey (15%)	$ 6.00
Contingency (10%)	$ 5.00
Total (Rounded Up)	**$ 47.00**

TABLE 9: MAJOR PCCR COST CALCULATION

Major PCC Restoration ($/SY)		
20% Remove and Replace	$	30.00
Crack Fill/Seal	$	3.00
Profiling	$	5.00
Mobilization, Traffic control, survey (15%)	$	3.00
Contingency (10%)	$	2.00
Total (Rounded Up)	**$**	**45.00**

TABLE 10: THIN OVERLAY COST CALCULATION

Thin (1.5 In.) Overlay ($/SY)		
1.5" HMA Overlay @ $120/Ton	$	10.00
Tack and Patch @ 250/Ton	$	3.00
Curb and Gutter/PCC Patching	$	7.00
Driveways/Sidewalks	$	6.00
Mobilization, Traffic control, survey (25%)	$	5.00
Contingency (10%)	$	4.00
Total (Rounded Up)	**$**	**35.00**

TABLE 11: MINOR PCCR COST CALCULATION

PCC Restoration ($/SY)		
10% Remove and Replace	$	14.00
Crack Fill/Seal	$	2.00
Profiling	$	4.00
Mobilization, Traffic control, survey (15%)	$	3.00
Contingency (10%)	$	2.00
Total (Rounded Up)	**$**	**25.00**

TABLE 12: MICROSURFACING COST CALCULATION

Microsurfacing ($/SY)		
Polymerized Surface Treatment	$	5.00
Tack and Patch @ 250/Ton	$	3.00
Mobilization, Traffic control, survey (25%)	$	1.00
Contingency (10%)	$	1.00
Total (Rounded Up)	**$**	**10.00**

TABLE 13: DIAMOND GRINDING COST CALCULATION

Diamond Grinding ($/SY)		
Grinding and Mobilization	$	10.00
Total (Rounded Up)	**$**	**10.00**

TABLE 14: CRACK SEALING/FILLING COST CALCULATION

Crack Sealing/Filling ($/Lane-Mile)		
Crack Sealing (per Mile per Lane)	$	12,000
Total (Rounded Up)	**$**	**12,000**

TABLE 15: PATCHING COST CALCULATION

Patching ($/SY)		
Patch @ 250/Ton	$	5.00
Total (Rounded Up)	**$**	**5.00**

EXISTING CONDITION ANALYSIS

The City of Bondurant maintains approximately **50 Miles of roads** and the transportation infrastructure network, not including bridges, is valued at approximately **$140 Million.**

Network Value = $140 Million

As is the case for nearly all municipalities, capital assets are the most valuable thing a city owns. As a major part of these assets, it is important that streets are managed properly to ensure the value of these resources are preserved

Pavement condition information from the 2021 automated data collection vehicle run by IPMP's sub-consultant Pathways was joined to the processed baseline information from the City of Bondurant using the ESRI ArcGIS software. That data was analyzed to create overview statistics and investigate various trends, both over time and spatially. Detailed maps were created to illustrate the pavement characteristics and the collected condition data, which can be found starting on **Page 22.**

FUNCTIONAL CLASSIFICATION

Roads in Bondurant are separated into three broad categories to help differentiate their use: **Local Streets, Collector Streets, and Arterial Streets**.

Local Streets, also referred to as "residential", serve low levels of traffic at the beginning or ending of vehicle trips. These streets often have many points of direct access from driveways, have lower speed limits, and sometimes have on-street parking. Local Streets make up the majority of any transportation network.

Collector Streets are those that connect Local Streets and concentrate traffic to help move vehicles efficiently between adjoining neighborhoods or provide access to the primary street network, namely Arterial Streets. These Collector Streets are generally wider and have slightly higher speed limits than Locals.

Arterial Streets carry the most traffic. These trunk roads travel at higher speeds and efficiently move traffic from one end of town to the other. They are also the gateway routes into and out of the City.

The reason for this distinction is that Arterial and Collectors are designed for higher volumes of traffic and heavier vehicles such as semi-trucks. As such, they are designed differently, costing more per square yard of pavement than Local streets. They also perform differently, by comparison. The higher traffic loads cause Arterials and Collectors to wear out faster on average than Locals, and motorists are more sensitive to surface distresses due to the higher speeds. That said, because Arterials/Collectors carry most of the vehicle-miles travelled in cities, they are more valuable to maintain in good condition. As such, for the purposes of modelling and planning using dTIMS BA, Arterial and Collector streets are considered separately from Local Streets.

Overall, Bondurant's transportation system has a fairly standard distribution of roadway Functional Classification. Most urban systems contain 60%-75% local streets with Arterial and Collectors being split roughly even in the remainder. Bondurant falls within this average, with around 70% of the network being local streets. Bondurant is responsible for just 2 main Arterial routes that cross through the city (Grant Street and 15th Street), which make up 12% of the network by length. US Highway 65 also crosses through Bondurant, but this route is maintained by the Iowa DOT.

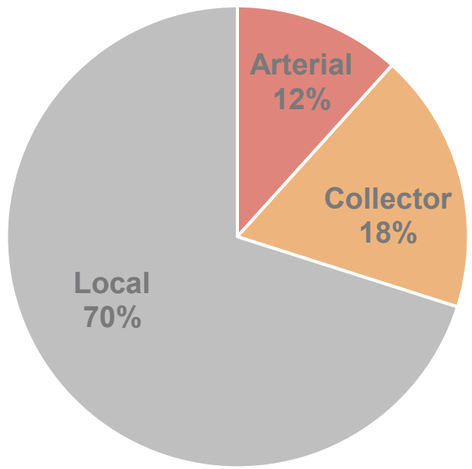


FIGURE 34: FUNCTIONAL CLASS DISTRIBUTION (BY CENTERLINE MILES)

This figure shows the breakdown of the various street classifications in Bondurant, based on the official Federal Functional Classification used by Iowa DOT.

PAVEMENT TYPE

Roads can also be separated by their surfacing type. Different pavement surfaces perform differently, have different types of treatment alternatives, and have different initial construction costs. Each type of road was considered separately in the dTIMS BA model for the City of Bondurant.

The three main categories considered by this plan are Portland Cement Concrete (**PCC**), Asphalt Cement Concrete (**ACC**), and Composite Pavements with HMA over the top of PCC (**COM**). Some agencies also refer to ACC as Hot-Mix Asphalt or HMA.

Most local streets, especially those in newly developed areas, are paved with PCC, which heavily contributes to the large proportion of PCC streets in the Bondurant network. Most occurrences of ACC are located on older collector and arterial streets.

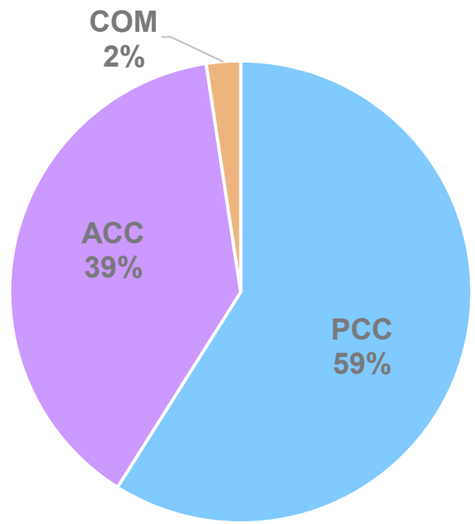


FIGURE 35: PAVEMENT TYPE DISTRIBUTION

This figure shows the distribution of pavement types in Bondurant. Of note is the high proportion PCC, and the relatively small proportion of ACC & COM surfaces.

PAVEMENT CONDITION

Bondurant's expansion in the last couple of decades and heavily residential nature has led to a somewhat "young" pavement network. As such, pavement conditions in the City are above average for an urban area in Iowa. The majority of urban areas in Iowa have average CityPCI scores around 60 which is considered "Fair" bordering on "Good." Bondurant, on the other hand, is a unique case where its streets are, on average, near the top end of the "Good" condition. The most recent Network-wide CityPCI evaluation for Bondurant resulted in a score of 78/100.

CityPCI = 78.0

(Good)

A notable fact about the current pavement conditions is that the average PCI scores for different pavement types are very similar. As is the case for most municipalities in Iowa, PCC makes up the majority of pavements and is generally newer pavement due to recent construction. However, the ACC pavements are performing just as well as the PCC pavements in Bondurant, with ACC only averaging 1 point less than PCC. Composite pavements are also all listed in the "Good" and "Very Good" categories. However, it is important to note that there is only approximately 1 mile of composite roads in the city, so this number may be artificially inflated.

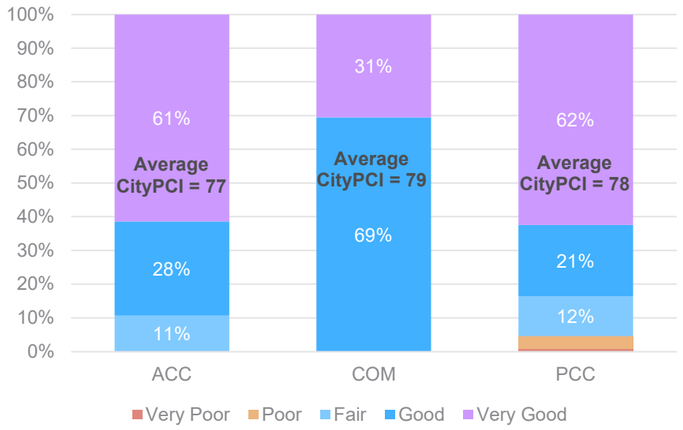


FIGURE 36: CONDITION DISTRIBUTION BY PAVEMENT TYPE

This figure shows the distribution of pavement conditions for each of the four pavement types.

When looking at functional classification, however, there is a perceptible difference between collector roads and the rest of the network. Overall, the arterial and local roads are performing noticeably better than the collector roads with high proportions of "Very Good" pavements. The mid-volume streets can often be problem areas for communities with rapid growth. Arterials tend to receive the majority of funding and new pavements with low traffic make up the bulk of the network. Conversely, collector streets still see moderate amounts of traffic but will often be left alone for long periods of time until the need is identified. Many of these collector streets in moderate condition will likely be good candidates for a lower cost rehabilitation. Treatments to roads such as these, before they deteriorate further, are a very cost-effective way to maintain the city's above average CityPCI score.

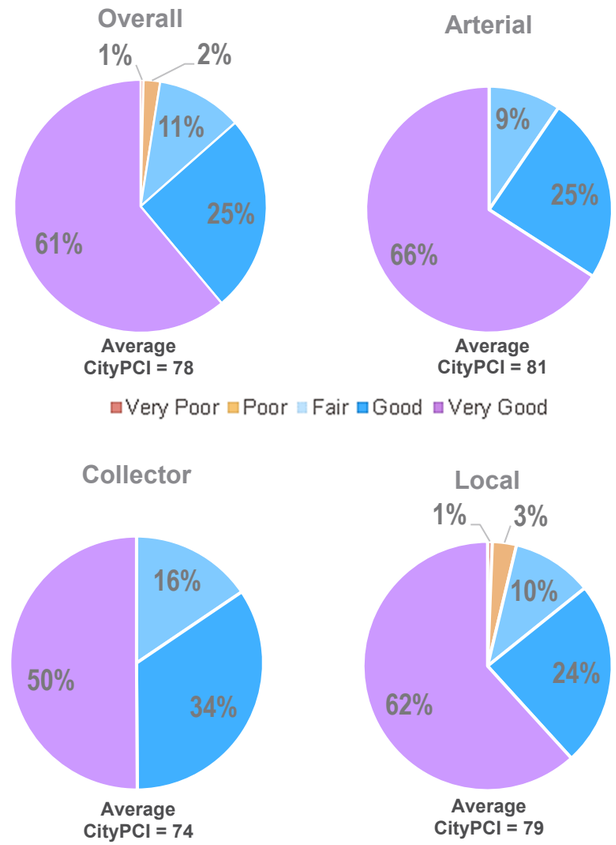


FIGURE 37: CONDITION DISTRIBUTION BY FUNCTIONAL CLASS

This figure shows the distribution of pavement conditions for each functional classification, as well as the network overall.

PAVEMENT CONDITION TRENDS

One of the biggest values of the IPMP Program and the data it provides is the fact that there are multiple years of data to work with. This allows for better trend predictions, due to having an 8-year period to work with, and it increases the statistical relevance of the data due to the higher volume of data points. This volume helps refine the precision of the modelling processes and identify specific conditions that may warrant further investigation.

Every other year IPMP receives over 4,000 raw data points from the automated collection vendor, just for the city of Bondurant. Approximately 20,000 data points go into this analysis section.

Looking at the network over time reveals a somewhat variable condition trend since 2013. Over the past 8 years of collection, average condition scores have typically been in the 70s, except for 2017. Over the past few collections, however, the scores have been on the incline. This is a positive sign for the network, but effort will need to be made to prevent future deterioration. Future decline in scores for Bondurant could have multiple potential causes such as the inflation of construction costs, aging infrastructure, or inconsistent roadway expenditures.

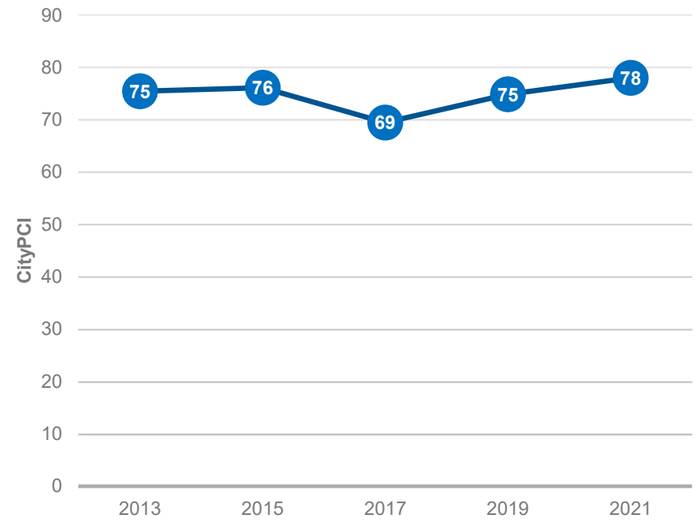


FIGURE 38: NETWORK-LEVEL PAVEMENT CONDITION TREND

This figure demonstrates the fluctuations the overall network has experienced since 2013.

The recent increase in overall PCI can most easily be attributed to the addition of new PCC pavement into the network. New development in the City's road network over the past 2 collection cycles has caused a notable increase in miles of new pavement. Since the majority of these new roads are local PCC roadways, it has increased the average PCI for both PCC and local roadways. It should also be noted that the decrease in roadway miles in the network seen in 2017 can be attributed to some street data that was not collected in that year, as opposed to actual decrease in roadway miles.

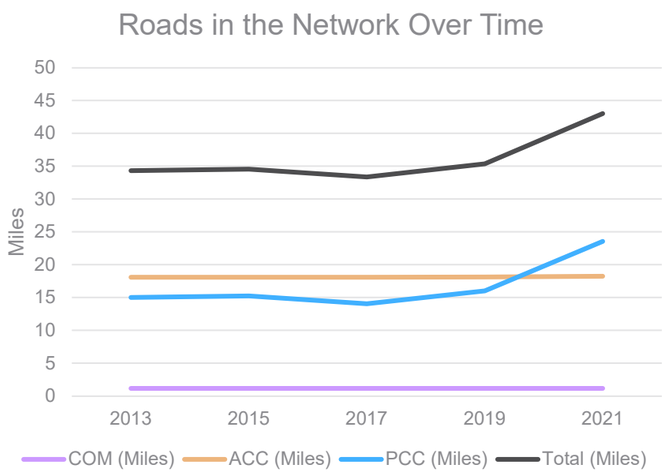


FIGURE 39: TOTAL LENGTH OF ROADS IN THE NETWORK

This figure demonstrates the amount of roadway miles in Bondurant by Pavement Type.

When looking at trends based on functional classification, we see that most of the network had been stable or on the decline until 2017 – 2019 when both arterial and local road saw significant improvement. This is again likely due to the influx of new pavements into the system in the local road category and the City's focus on maintaining arterials for new development in the area. Unsurprisingly, the average PCI score for Collectors has been steadily declining. Overall, the trends match the shape we expect based on **Figure 38.**

Comparing the pavement types revealed similar trends. All types had largely been on the decline until 2017 when improvements were made due to new roads in the network.

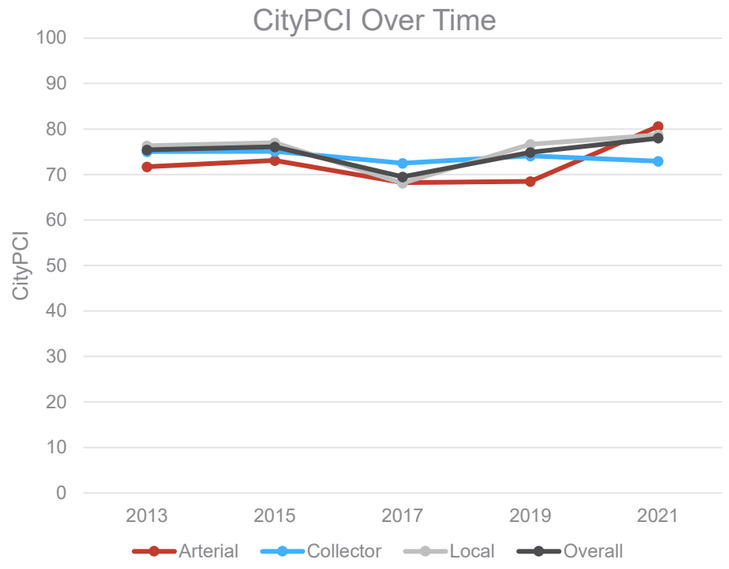


FIGURE 40: CONDITION TREND BY FUNCTIONAL CLASS

This figure demonstrates the fluctuations across Bondurant by Pavement Type

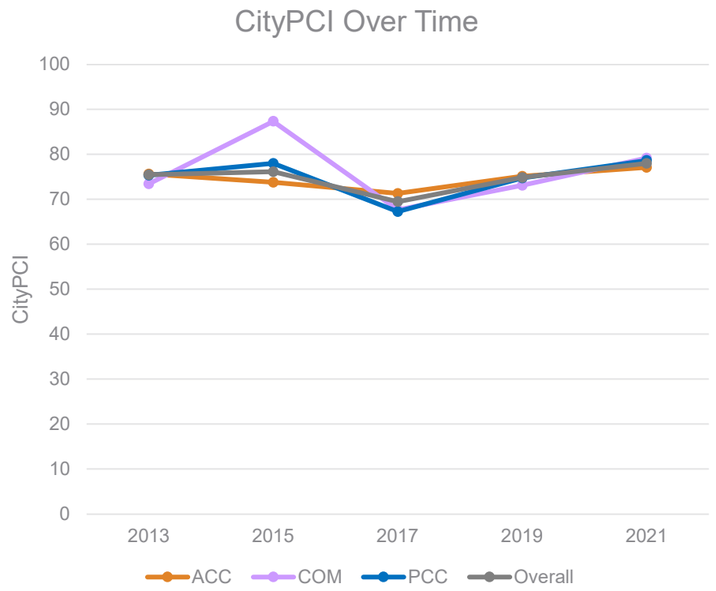


FIGURE 41: CONDITION TREND BY PAVEMENT TYPE

This figure demonstrates the fluctuations across Bondurant by Pavement Type

SUCCESS IN BONDURANT & CAUTIONS

Bondurant has many reasons to be proud:

- High CityPCI compared to cities of similar size in Iowa
- High proportion of "Very Good" and "Good" condition pavement
- Only small portions of pavement in need of repair, with most of the City representative of the high average.

This does not mean, however, that there is no work to be done. In fact, there are some specific weaknesses in the IPMP data that may superficially hide the true conditions of the streets in Bondurant. Some of those data gaps are caused by the way the data is collected, the types of data collected, and completeness of information.

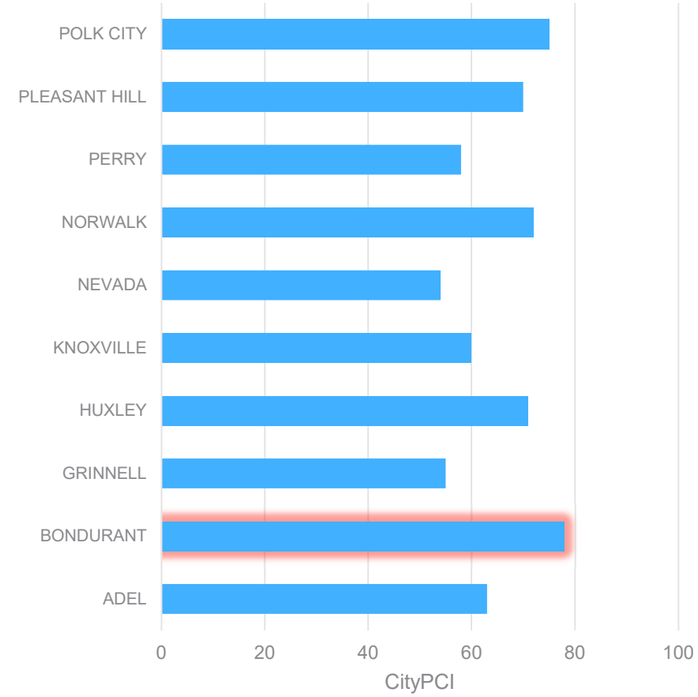


FIGURE 42: COMPARISON OF 9 JURISDICTIONS

This figure compares Bondurant's average CityPCI score with other similar sized communities in Iowa

The **sampling methodology** used by the IPMP data vendor consultant only addresses one direction of travel for a road and has certain restrictions. That means the data set, while extensive and significantly better than subjective manual rating, is not fully comprehensive. In 2017, undivided roads with fewer than 5 lanes were only driven in one direction, meaning that up to 75% of pavement area may not be covered on wide streets. Similarly, on-street parking can limit the vehicle's ability to read a continuous section of road accurately due to weaving maneuvers resulting in readings based on skewed angles and in areas outside the normal driving lane.

Roughness data can only be collected when travelling at 20 mph or more and requires a steady speed for at least 200 feet. Short street segments, dead-end roads, on-street parking, pedestrian crossings, and stop sign–controlled intersections can be very disruptive to the roughness measuring equipment, meaning that an urban area with many local streets will likely have low coverage for roughness data. For example, over 3.6 miles of streets in Bondurant did not collect any roughness data in 2015, and the data that was collected may not be reliable. Each collection cycle, 1%-5% do not have roughness data available. For those roads, roughness needs to be assumed based on other distress data. Luckily, the effect of roughness on CityPCI scores is minor.

FIGURE 43: ROUGHNESS PROFILE AFFECTED BY LOCAL DRIVING CONDITIONS

This Image was taken from Iowa DOT Pathweb showing a road where the collection vehicle was trailing a delivery van and weaving around parked cars causing a sudden change in roughness.

Other distresses, even though they were collected, may not factor at all into the CityPCI rating. Prime examples include punch-outs and failures. **Failures** are potholes and potholes that have been filled, identified as irregularly shaped asphalt patches. Failures are a critical distress both in pavement performance as well as driver perception of road quality. Unfortunately, these distresses are treated the same as other patches, if included at all. The CityPCI rating system for full-depth asphalt does not formally include failure as a distress and is inconsistent in whether it should be considered at all, because the failure is not always indicative of the rest of the roadway conditions.

Punch-outs are another failure ignored by the CityPCI rating. Punch-outs are when the edge of road breaks off, typically in conditions where there is no curb, or the curb was constructed separately. Pavement edges may continue sinking due to erosion of the base material. The condition is commonly caused by poor bank stability on roads with ditches, and erosion prone subbase materials in urban areas where subsurface drainage issues are not addressed. Punch-outs were only captured by the data collection services a handful of times in Bondurant since collection started, but where it was present, it was not included as a contributing distress.

FIGURE 44: UNACCOUNTED FOR PUNCHOUT

These images are of a punch-out that was not included in the pavement rating for the section

The final caveat to this data collection system is that it can only address **surface** distresses. Underlying problems such as voiding, eroding subgrade/subbase, and structural deficiencies cannot be identified, only the symptoms. High priority is paid to alligator cracking, spalling, and patching because of their associations with these problems, but evidence of these major deficiencies is not possible to collect directly without ground penetrating radar or pavement cores (both of which are comparatively expensive).

Underlying pavement ages are similarly important from a deterioration standpoint. Older, more distressed, bases mean new surfaces will deteriorate faster, due to a lack of stable support. Construction history is not as readily available so base age was assumed, in many cases. This report's methodology uses a "performance age" to group pavements that are deteriorating at similar rates, in order to estimate future behaviors.

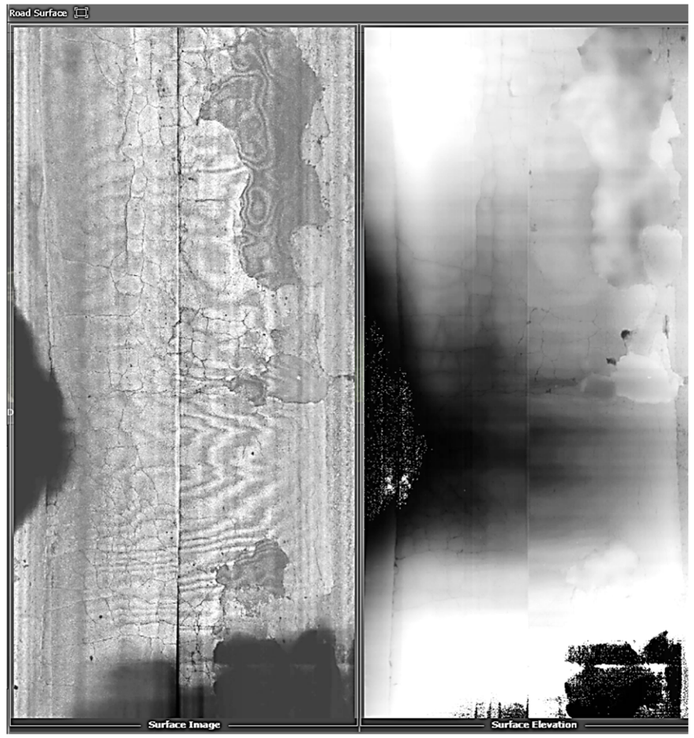


FIGURE 45: UNACCOUNTED FOR FAILURE

These are images of a failure not included in the pavement rating for the associated road.

Map *1: Federal Functional Class Overview*

Map *2: Pavement Condition Overview*

Map *3: Surface Type Overview*

Map *4: Ride Quality Overview*

Map *5: Pavement Deterioration Overview*

Map *6: PCC Joint Health Overview*

Map 7: *Pavement Distresses Overview*

SCENARIOS/RECOMMENDATIONS

In order to create recommendations on spending strategies and setting performance goals, a number of budget-based scenarios were created. These scenarios were designed to address “what-if?” type questions. Each scenario used a set budget and projected the effects on the overall condition of the network. The projections were performed using Deighton Limited’s dTIMS BA, for a 15-year period, from 2024 to 2038.

Once all the data was processed, it was put into a dTIMS model to develop long term performance projections and to run a number of scenarios to determine optimal budgeting and assess the impact of using the recommended standards herein.

MODELLING

dTIMS BA (Deighton’s Total Infrastructure Asset Management Software – Business Analytics) is a computer program developed by Deighton Associates Limited in storing infrastructure asset data, developing projections of infrastructure asset performance, estimating remaining life in various infrastructure assets, determining when they need to be replaced or repaired, and estimating how much the treatment will cost. It allows for any and all asset data to be entered, there is no limit to what information can be stored within the program and considered during the modelling process. However, the user must manually program how all the data relates to each other, assign costs, develop the treatment triggers and effects, create funding pools that each treatment will pull from, and develop their own life-cycle curves for the infrastructure assets. Once this is accomplished, dTIMS’ primary feature goes to work; it runs a heuristic algorithm (a series of tests using general rules and guessing approaches for determining optimal solutions) to identify an optimal “Strategy” for maintenance and replacement of the infrastructure assets in question, given the budget, treatments, and life-cycle information supplied by the user.

Some manipulation through GIS was required to combine the IPMP data with outside data sources from the City and State before it could be imported into dTIMS. After the data were compiled in GIS, it was imported to dTIMS, and the models were run.

DETERMINING NEED

DEFINING NEED

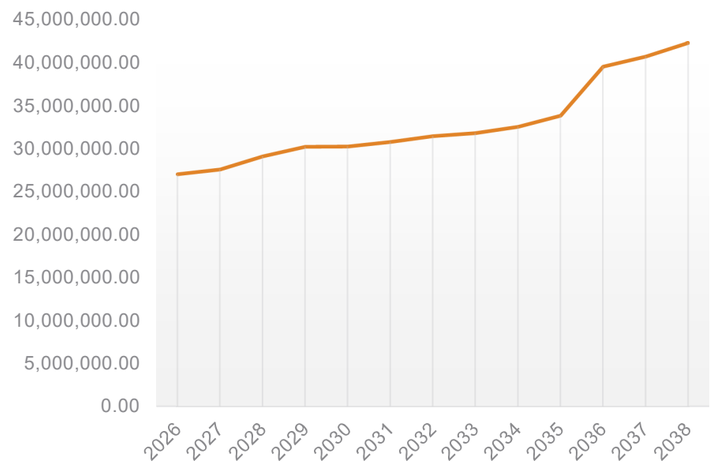
The first step in running various scenarios in dTIMS BA is to determine the “Need.” Need is defined as all outstanding work and forthcoming work in the analysis period. Some agencies may consider this as a “Backlog” projection.

Essentially, dTIMS BA analyzes the current conditions and creates condition projections for every pavement section in the database, after which it chooses a default treatment alternative for each segment, in every year, regardless of budget. This acts as a baseline scenario which could be considered as a Pavement Management Program operating at 100% efficiency with complete funding.

NEEDS IN BONDURANT

Using the pavement condition data collected by Pathways and distributed by IPMP, dTIMS BA analyzed the existing conditions of the roadway network in Bondurant, and an overall Need was determined.

The current Need for pavement repairs in 2026, or the total cost to address every single roadway distress in the City bringing the network to “Very Good” condition, is approximately $27 Million. That Need is projected to grow to $42 Million by 2038.



CURRENT NEED (2026) = $27 MILLION

PROJECTED NEED BY 2038 = $42 MILLION

FIGURE 46: PROJECTED “NEED”

This figure displays the existing funding required to bring every pavement up to “Very Good” condition, i.e., “Need” as well as its projected Growth over the next 15 Years.

SCENARIOS

To address the existing backlog (Need), the City will need to commit a steady amount of funding to maintain its roadways. A number of budget options were tested to determine a theoretical budget for the City of Bondurant.

Fiscally Constrained, or Budget-based Scenarios, take a fixed annual budget and attempt to optimize pavement management spending using the treatments shown in **Table 3** on page 15.

The funding comparisons keep all the proposed work within the assigned budget, while maximizing the “Benefit” provided to the public. Benefit was determined as the difference between the conditions of the road network if nothing was done and the selected treatment effect (measured by difference in CityPCI scores). This method is standard practice when determining optimal treatments. The model used in this plan also factored in the amount of traffic (based on annual average daily traffic or AADT) on the affected roads. The final result represents both the magnitude/duration of the improvement and the number of people who will receive the benefit of driving on a newly reconstructed road. This benefit calculation was how the model determined how the overall condition of Bondurant would perform over a 15-year period.

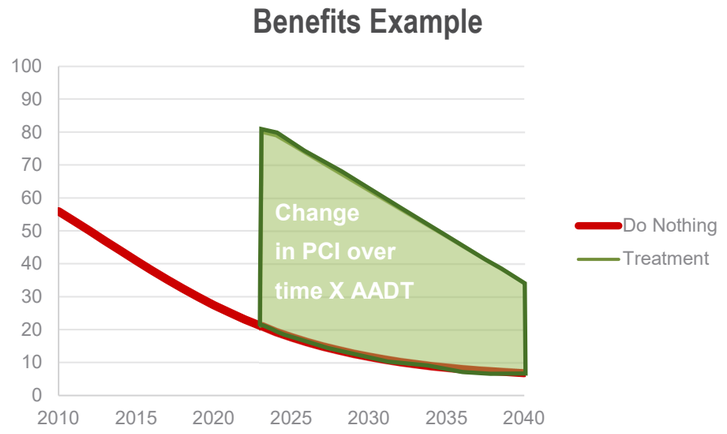


FIGURE 47: WHAT THE BENEFITS CALCULATION LOOKS LIKE

The red line is the “baseline” scenario, the green area is the “Benefit” the public experiences, calculated as the difference between the baseline and the new improved condition, factored by the number of people who drive on that road (Annual average daily traffic, AADT)

dTIMS BA checks each individual roadway segment to see if it triggers a specific treatment type, then calculates the “Benefit” of performing that treatment. Afterwards, dTIMS BA will then compare each treatment option and determine the one that gives the best ratio of benefit to cost. It then goes out further and sees if any treatments would trigger in future years that would give better benefit-cost returns (such as waiting to reconstruct a pavement rather than overlaying it). After comparing all the initial treatment selections across all the years, the program also considers subsequent treatments and their effects. Complex dTIMS models might look at dozens of treatments in sequence before picking the best choices, which are called “treatment strategies”.

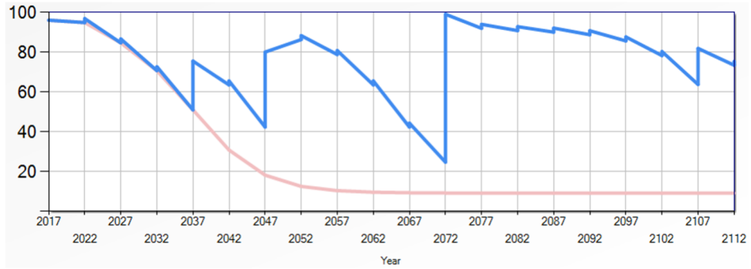


FIGURE 48: EXAMPLE OF A TREATMENT STRATEGY EXECUTED BY DTIMS.

The blue line is the effect, pink is what would happen if nothing were done. The jaggedness is from regular maintenance activities, the first peak is a PCC restoration, the second is a crack and seat overlay, the jump in 2072 is a reconstruction, and the final peak is another PCC restoration.

Of course, the best choice of treatment may not always be the one that can be afforded within the City's budget. The program then ranks each treatment strategy based on their benefit-cost ratio and picks those that it can afford, deferring those it cannot, and occasionally picking less optimal treatments because it would allow the program to use more of its budget in a timely manner.

The funding scenarios used were designed to hone in results that enable actionable changes in the existing pavement management program in Bondurant. Questions were asked at a high level, and the dTIMS BA model was adjusted to address those questions. The results were then interpreted to clarify what the numbers truly mean.

The funding scenarios performed looked at following questions:

- What happens if the City does nothing?
- What happens if funding increases?
- What happens if funding decreases?
- How much money to maintain a network average PCI of 60?
- How much money to maintain a network average PCI of 70?
- How much money to maintain a network average PCI of 80?
- What is the proper distribution of funds across Reconstruction/ Rehabilitation/ Restoration?

RESULTS

BUDGET PROJECTIONS

The City of Bondurant is currently in "Good" condition, and it is easier to maintain a network than it is to improve a network. As such, the City is well positioned to keep operations going on a limited budget while still ensuring a high quality of infrastructure.

The "Do Nothing" scenario option points out the value of Pavement Management. Network condition would drop below 60 in 10 years without it. It also shows the general trend the City can expect. **Figure 49** shows how quickly pavements would deteriorate if no work was completed. The proportion of pavements in very good condition starts to drop immediately, and the amount of roads in very poor condition starts to steadily increase.

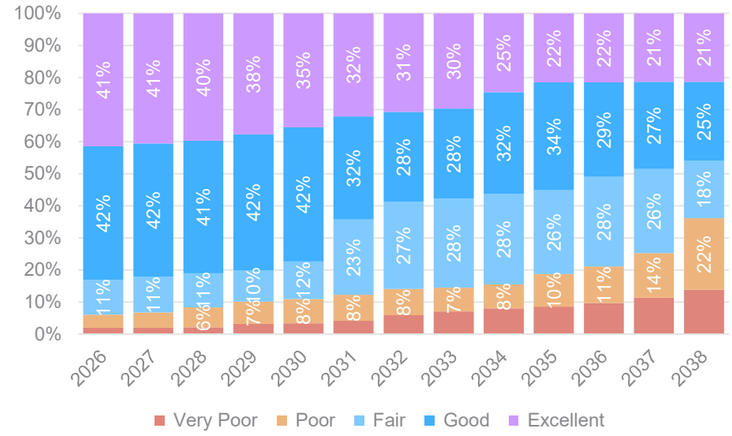


FIGURE 49: CONDITION DISTRIBUTION PROJECTION – DO NOTHING ($0)

This graph is from the dTIMS BA results for the Do-Nothing Scenario over the next 13 years. Compared to the preferred budget the difference is pronounced

In order to determine an ideal budget for the City, budget scenarios were first explored ranging from $250,000 all the way up to $3 Million annual funding, with various intervals. **Figure 52 on page 31** shows these scenarios. The results showed that there are only marginal benefits to budgets over $2 Million per year; any expenditures over that level are mostly wasted and are just done to use up the budget, not out of need and budgets under $1.2 Million per year showed a decline. This indicated that the optimal budget would likely be one between $1.2 Million and $2 Million and would maintain the network average PCI score above 70/100 or "Good" on average.

Additional scenarios were developed to refine the results and establish a preferred expenditure strategy. In the end, it was determined that the recommended budget would be approximately $1,200,000 per year. This budget allowed the City to maintain a PCI level around 75/100 with little variance over the 15-year analysis period. It neither wasted money nor short-changed the program. It also maintained the current pavement condition distribution, as seen in **Figure 50,** so that it did not just sink money into increasing the amount of "Very Good" while ignoring "Poor" and "Very Poor" roads.

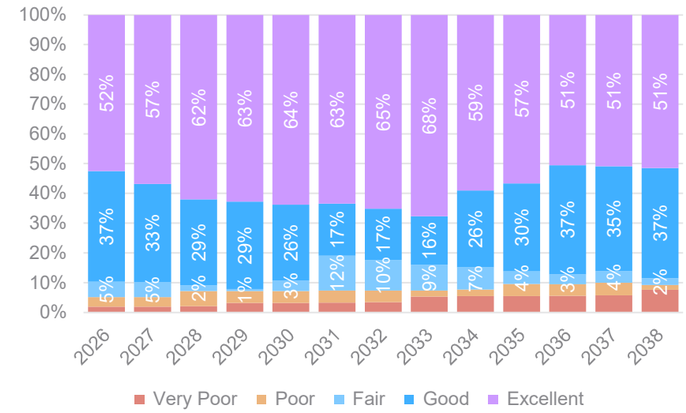


FIGURE 50: CONDITION DISTRIBUTION PROJECTION – PREFERRED BUDGET ($1.2M)

This graph is from the dTIMS BA results for the preferred budget over the next 13 years.

Given the City's current streets maintenance budget, it is understood that a $1.2 million budget may not be a realistic goal within the next year. **Figure 51** shows what happens if Bondurant gradually increases their budget over the next few years in order to reach a $1.2 million budget by 2032.

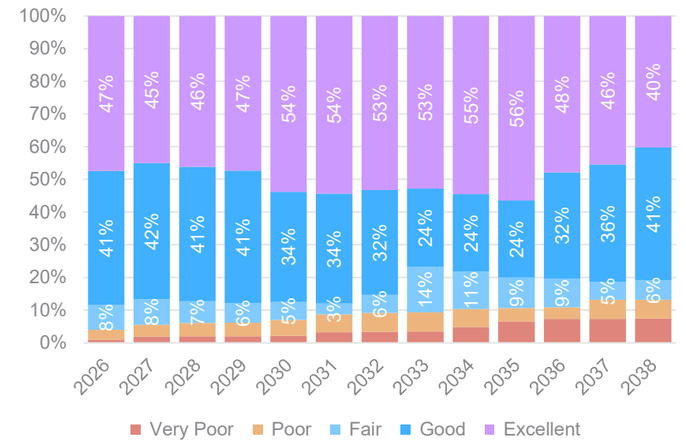
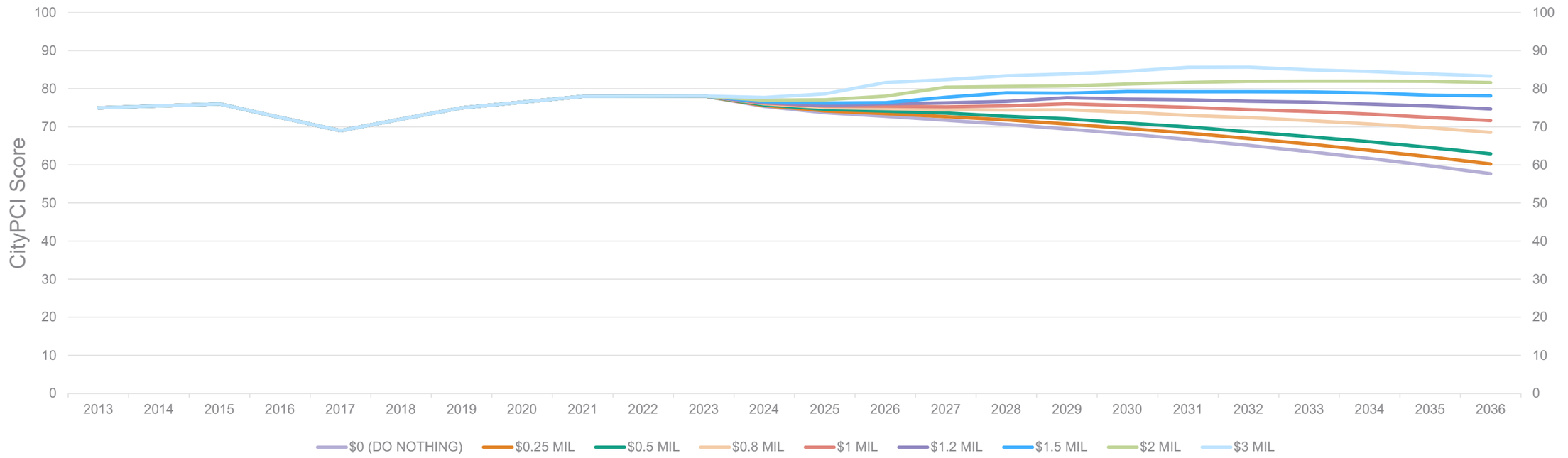


FIGURE 51: CONDITION DISTRIBUTION PROJECTION (VARYING BUDGETS)

This graph is from the dTIMS BA results for a $650,000 budget for the next 3 years, $1.0 Million budget for the following 3 years, and $1.2 Million thereafter This graph is from the dTIMS BA results for the preferred budget over the next 13 years.



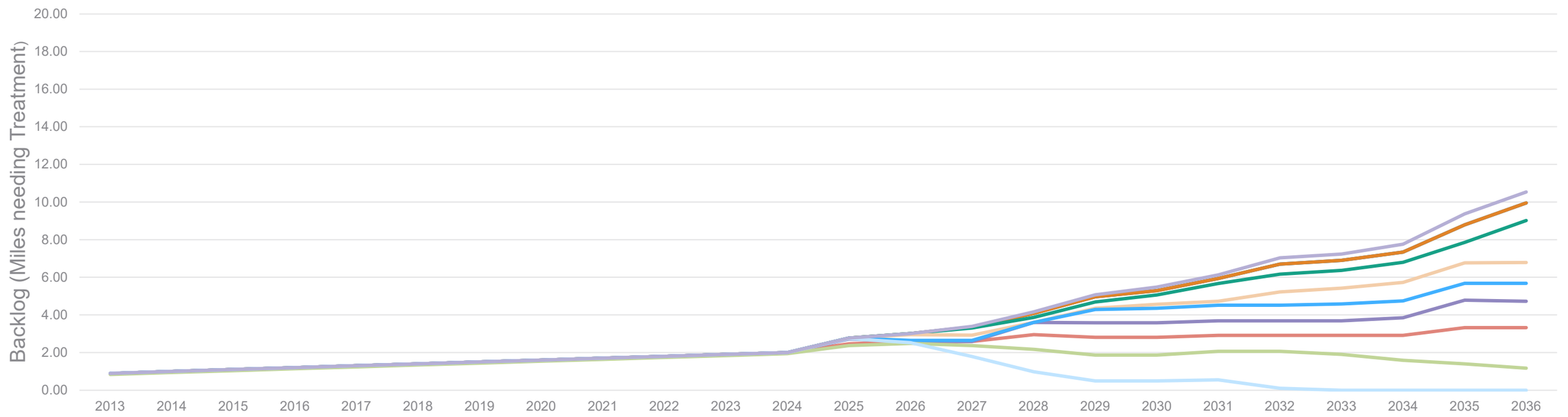


FIGURE 52: CITYPCI AND BACKLOG PROJECTIONS BY BUDGET

The results of the dTIMS BA modelling. These graphs represent the effects of adopting various budgets and what happens over the next 12 years. Changes to the network level Pavement Condition Index is on top and the bottom represents the miles of road that will need to be deferred for future treatment

TARGET-DRIVEN SCENARIOS

If the City wants to consider the cost implications of maintaining a level of service other than the one they currently have, a range of options was explored within dTIMS BA. This was done using the "Strategic Analysis Module" or SAM. A range of budgets was programmed to test which ones would result with a given average PCI at the end of the analysis period. This approach is more realistic than immediately jumping to the target and holding it, and actually reduces costs for both the higher and the lower goals.

PCI targets were tested ranging from 60 to 80 in 5 PCI increments and the average annual costs were rounded to the nearest $100,000 for simplicity. Each jump in 5 PCI points yielded about a $0.3 Million cost difference, with the preferred budget falling between the Targets for PCI=70 and PCI=75. Each of these goals falls within the "Good" category, though 80 is on the threshold for "Very Good." This means that the difference in performance of the network may not be noticeable during the analysis period. That said, these costs are only the average for the analysis period. For lower targets it takes nearly the whole 15 years to drop to 60 so the model was only putting forth minimal maintenance. Beyond the immediate future that budget may end up rising higher than the projected budget of $1 Million.

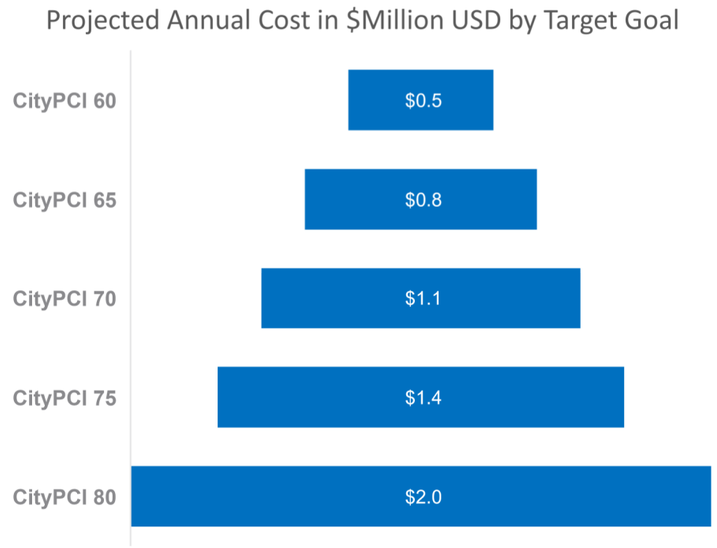


FIGURE 53: EST. COSTS TO MAINTAIN AVERAGE CONDITION LEVELS

This figure shows the dTIMS cost results in rounded to the nearest $100k in order to maintain a certain average condition level. To determine total cost.

"HYBRID" GOAL SCENARIO

Different functional classifications typically are used by vastly different amounts of traffic and are traveled at different speeds, meaning that the effects of pavement distresses on drivers may not be equal. As such, setting a "hybrid" goal where local streets are held to a different standard than arterials may present a cost savings opportunity. In addition, this approach puts emphasis on spending more on higher volume streets to get more "band for the buck."

Local roads make up the majority of Bondurant's pavement network and the target performance level of the local roads are driving the majority of costs to maintain the overall network PCI. As such, exploring alternatives for local road performance will give the City more tools to optimize their budget.

If the target goal for local roads were to be set at 70, still considered quite good, the City would save approximately $600,000 annually compared to what would be required to maintain the local roads at their current condition of 78/100.

Arterials and Collectors are the most important streets, so maintaining a higher goal of "Good" (75/100) might be more suitable. Bondurant's arterials and collectors are in exceptional condition already so only minimal maintenance over the next 15 years is necessary.

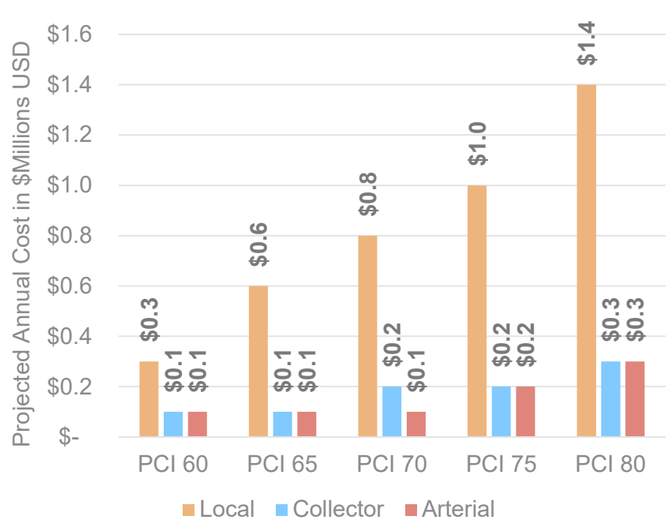


FIGURE 54: EST. COSTS TO MAINTAIN CERTAIN CONDITION LEVELS BY CLASS

This figure shows the dTIMS cost results rounded to the nearest $100k in order to maintain a certain average condition level based on the functional class. To determine total cost, add 3 different class options together.

IDEAL SPENDING PROPORTIONS

When looking at the types of treatments applied there is an optimal balance, unique to each city. Too much reconstruction can eat up your budget quickly and not leave anything to maintain older pavements, meaning more early failures. Too much rehabilitation means maintaining the ideal candidates really well but end up ignoring the "lost-causes" for extended periods while you try to carve out funds for reconstruction only occasionally. Both cases can result in a lopsided distribution of pavement conditions that is heavy on the two extremes.

Research performed by HR Green has indicated that most cities in Iowa tend to perform best with a 60/40 split between rehabilitation and reconstruction or 55/35 with the remaining 10% focused on restoration treatments like crack sealing and patching.

However, for Bondurant, The dTIMS BA model provided insight for splitting the funding and indicated an **ideal funding distribution of 80/10/10** between Rehabilitation, Restoration, and Reconstruction. This result is slightly atypical but is a clear result of Bondurant's current pavement distributions. There are a small number of roads that need major work, but a large amount of relatively newer, low-risk, pavements that do not yet need rehabilitation. The budget therefore is focused more towards preserving the "Good" pavements with restoration treatments and addressing the few existing pavements that are in "Poor" or "Very Poor" condition. Over time, however, this may need to shift more towards Reconstruction.

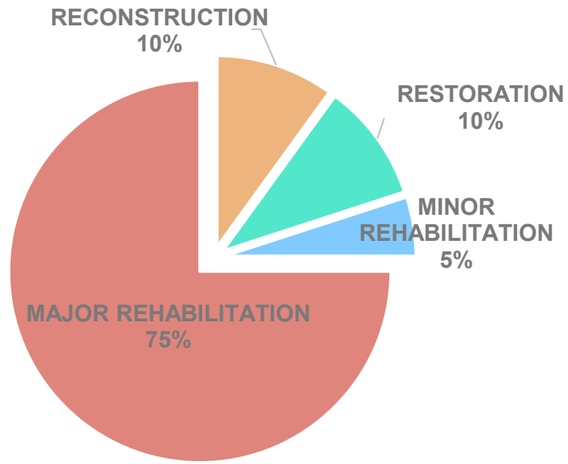


FIGURE 55: DTIMS BA RECOMMENDED BUDGET PROPORTIONS

This figure shows the results returned by dTIMS BA when developing the construction program.

LAND DEVELOPMENT AND INCREASING LIABILITIES

The recommended budget solutions assume that the amount of maintenance, rehabilitation, and reconstruction needs in Bondurant will be static and unchanging. The size of the network and its characteristics are fixed in time. However, the reality is that Bondurant is still a growing City.

In 2010, Bondurant's population was 3,930. Since then, the population of Bondurant has grown to 8,035 in 2021, a nearly 105% increase in population in just 10 years. This kind of population change is driven by new development and housing opportunities.

Along with the expansion of housing and population comes increased demand for infrastructure. In order to provide for the future needs, either the City or Developers will need to ensure they are providing adequate funding for road reconstruction.

Expanding the street network also means increasing the City's maintenance liabilities. More roads require more money. HRG estimates that for each mile of new roadway built, the City will need to spend approximately **$103,000 more each year** on maintenance and rehabilitation, not accounting for inflation.

FIGURE 56: 2010 AERIAL IMAGERY (USDA)

Aerial imagery from 2010 shows the historical core of the community's infrastructure and serves as a reference for how much it has expanded in the past 10 years.

Looked at another way, using the assumptions from **Cost Comparison Section** on **page 52**, the cost increase is approximately **$880 to $945 per lot.**

TABLE 16: ADDITIONAL COSTS OF MAINTAINING 1 MILE OF NEW ROAD

Year	Action	Cost (PV)	Annual Cost (PV)
1	Construction	By Developer	By Developer
5	Seal	$24,000	$4,800
9	Seal	$24,000	$2,667
12	Seal & Patch	$82,135	$6,845
15	Rehab (PCC Restoration)	$ 410,675	$27,378
18	Seal	$24,000	$1,333
21	Seal	$24,000	$1,143
24	Seal & Patch	$82,135	$3,422
27	Seal & Patch	$82,135	$3,042
30	Rehab (Overlay)	$ 772,069	$25,736
33	Seal	$24,000	$727
36	Seal	$24,000	$667
39	Seal & Patch	$82,135	$2,106
42	Seal & Patch	$82,135	$1,956
45	Rehab (Mill & Overlay)	$887,058	$19,712
48	Seal	$24,000	$500
51	Seal	$24,000	$471
54	Seal & Patch	$82,135	$1,521
57	Seal & Patch	$82,135	$1,441
60	Seal & Patch	$82,135	$1,369
65	Reconstruct	$3,778,210	$58,126
	Total	**$6,697,092**	**$103,032**

FIGURE 57: 2022 AERIAL IMAGERY (USDA)

Aerial imagery from 2022 can show the extent of growth that has taken place over the past 10 years.

PERFORMANCE METRICS AND GOAL SETTING

Pavement Management Programs are ongoing processes. Adopting a plan and analyzing potential budgets are not enough. They need to be actionable and have clear, measurable performance goals.

The first steps in moving forward are to approve the findings of this pavement management plan, identify a funding strategy, and then develop an objective, data-driven Capital Improvement Plan. The Capital Improvement Plan will assist decision makers in determining the most cost-effective actions are to use the funding they have available to improve or maintain conditions in Bondurant.

With the Scenario results in mind, Bondurant needs to set some measurable performance goals for the near future, that will be addressed by said Capital Improvement Program. This allows a City to track its performance, ensuring that it remains on track and is actually effective.

RECOMMENDED PERFORMANCE METRICS

- Maintain a Hybrid CityPCI goal of 70 for Local Streets and 75 for Collectors and Arterials.
- Clearly establish a dedicated budget for Pavement Management activities
- Steadily Increase average annual spending on roadway improvements to approximately $1.2 million per year.
- Maintain an ideal Rehabilitation budget share of about 80%, Reconstruction budget share of around 10%, and Restoration share of at least 10%.

"LIVING DOCUMENTS"

Another important part of this performance tracking and goal-setting is to renew this plan as physical, fiscal, and political conditions change. HRG recommends that Pavement Management Plans act as "Living Documents" that grow with cities and adapt to their needs by regular updates and changes. By default, for most agencies this will mean renewing the plan every 2-4 years, complete with new pavement condition data.

CAPITAL IMPROVEMENT PLAN

The Capital Improvement Plan (CIP) is a list of recommended projects for Bondurant to complete over the next 10 years. This list of projects was generated using the results of the dTIMS BA model, as well as several other factors. The project list is optimized for the most effective use of available funds, based on the pavement condition data and planning-level information provided by the City.

Appendix A: Capital Improvement plan includes a complete list of recommended projects and maps identifying the location for the proposed treatments. Projects are sorted into three phases, Phase 1 (FY2026-FY2028), Phase 2 (2029-2031), and Phase 3 (FY2032-2035). It is assumed that the annual budget will start at $500,000 in 2026 and gradually increase to $1.2 Million by 2032. For this reason, an average annual budget of $650,000 was used to establish projects for Phase 1 and an average annual budget of $1 Million was used for Phase 2.

These lists and maps will serve as a tool to assist City staff during the project planning process, but they do not replace engineering judgement. Project types may change from what is in the CIP and projects will likely move between phases for various reasons. Some projects may even leave the plan entirely as new ones are added. Some reasons the program may change include field conditions not captured by the IPMP data, required utility improvements, or environmental hazards causing changes to local conditions.

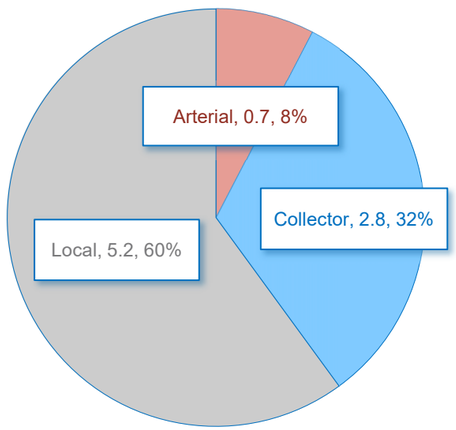


FIGURE 58: LENGTH OF TREATMENT BY FEDERAL FUNCTIONAL CLASS
This area graph shows the breakdown of projects based on the miles of each functional class included.

Consisting of **80 PROJECTS**, the recommended projects contained within the CIP will address approximately **9 MILES** of roads. Together, collectors and arterials make up about 40% of the projects by length and local roads make up about 60%. This distribution of projects reflects a similar distribution of overall roadway classifications in Bondurant. The plan acknowledges that the major corridors experience higher traffic volume and will therefore need more frequent maintenance, but the sheer volume of local roads in the network means that they will make up the majority of the projects.

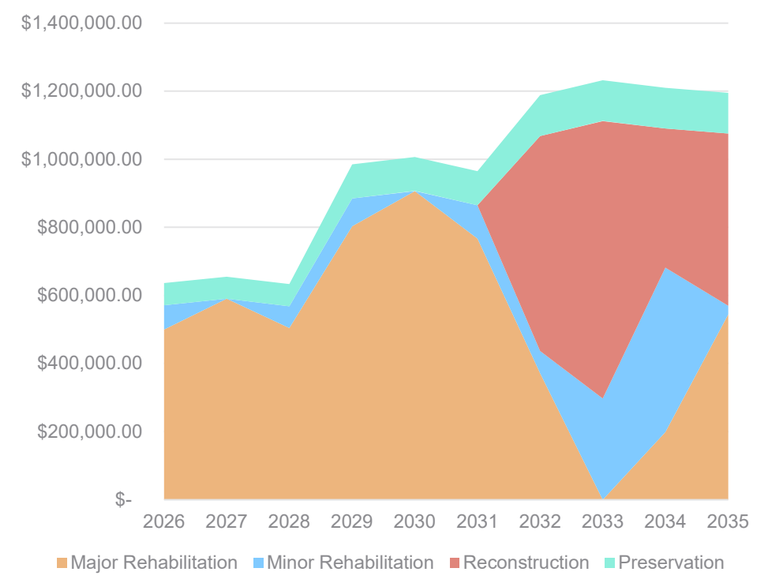


FIGURE 59: TREATMENT TYPE OVER TIME
This area graph shows the treatment distribution for each year of the CIP.

APPENDIX A: CAPITAL IMPROVEMENT PLAN

FIGURE 60: CAPITAL IMPROVEMENT PLAN – LIST OF RECOMMENDED PROJECTS (PHASE 1 - FY2026–FY2028)

Phase	Branch	From Intersection	To Intersection	Recommended Treatment Type	Estimated Cost	Surface Type	Functional Classification	AADT	CityPCI	IRI	SY	Miles
Phase 1	GARFIELD STREET SOUTHWEST	3RD STREET SOUTHWEST	2ND STREET SOUTHWEST	Major Rehabilitation	$ 55,463.29	PCC	7	289	59	291	920	0.06
Phase 1	THIRD STREET NORTHWEST	SHILOH ROSE PARKWAY NORTHWEST	MALLARD POINTE DRIVE NORTHWEST	Major Rehabilitation	$ 129,942.56	PCC	7	77	61	377	2173	0.12
Phase 1	FOURTH STREET NORTHWEST	SHILOH ROSE PARKWAY NORTHWEST	MALLARD POINTE DRIVE NORTHWEST	Major Rehabilitation	$ 141,563.44	PCC	7	98	61	192	2363	0.13
Phase 1	GARFIELD STREET SOUTHWEST	4TH STREET SOUTHWEST	3RD STREET SOUTHWEST	Major Rehabilitation	$ 87,298.89	PCC	7	289	55	304	1464	0.06
Phase 1	4TH STREET SOUTHWEST	GARFIELD STREET SOUTHWEST	4TH STREET SOUTHEAST	Major Rehabilitation	$ 89,419.56	PCC	7	289	60	309	1495	0.07
Phase 1	OLESON DRIVE	BRICK STREET SOUTHEAST	HUBBELL AVENUE	Major Rehabilitation	$ 54,923.53	PCC	7	540	99	N/A	908	0.05
Phase 1	10TH COURT SOUTHEAST	LINCOLN STREET SOUTHEAST	N Dead End	Major Rehabilitation	$ 96,116.18	PCC	7	289	59	319	1605	0.09
Phase 1	WASHINGTON AVENUE	PAINE STREET SOUTHEAST	HUBBELL AVENUE	Major Rehabilitation	$ 53,233.58	PCC	7	370	60	222	886	0.06
Phase 1	LINCOLN STREET SOUTHEAST	S Dead End	LINCOLN STREET NORTHEAST	Major Rehabilitation	$ 97,489.27	PCC	7	289	64	393	1620	0.07
Phase 1	NORTHEAST 2ND STREET	PAINE STREET SOUTHEAST	PLEASANT STREET NORTHEAST	Major Rehabilitation	$ 76,255.84	ACC	5	3130	53	203	1414	0.10
Phase 1	NORTHEAST 2ND STREET	SNYDER STREET SOUTHEAST	PATTERSON STREET SOUTHEAST	Major Rehabilitation	$ 45,619.20	ACC	5	3130	43	170	846	0.06
Phase 1	NORTHEAST 2ND STREET	PLEASANT STREET NORTHEAST	HUBBELL AVENUE	Major Rehabilitation	$ 78,362.31	ACC	5	1630	53	223	1449	0.10
Phase 1	NORTHEAST 2ND STREET	PATTERSON STREET SOUTHEAST	PAINE STREET SOUTHEAST	Major Rehabilitation	$ 45,619.20	ACC	5	3130	60	148	846	0.06
Phase 1	WALNUT DRIVE NORTHWEST	DEER RIDGE DRIVE NORTHWEST	EVERGREEN CIRCLE NORTHWEST	Major Rehabilitation	$ 42,248.87	PCC	7	36	64	240	703	0.04
Phase 1	PATTERSON STREET SOUTHEAST	PAINE STREET SOUTHEAST	NORTHEAST 2ND STREET	Major Rehabilitation	$ 163,891.20	PCC	7	289	33	317	2727	0.19
Phase 1	PAINE STREET SOUTHEAST	PATTERSON STREET SOUTHEAST	NORTHEAST 2ND STREET	Major Rehabilitation	$ 215,424.00	PCC	7	289	65	309	3598	0.20
Phase 1	LINCOLN STREET SOUTHEAST	13TH STREET SOUTHEAST	HUBBELL AVENUE	Minor Rehabilitation	$ 64,178.95	PCC	7	250	78	236	2572	0.16
Phase 1	LINCOLN STREET SOUTHEAST	HUBBELL AVENUE	BRICK STREET SOUTHEAST	Minor Rehabilitation	$ 24,640.00	PCC	7	1090	51	294	988	0.06
Phase 1	LINCOLN COURT	10TH COURT SOUTHEAST	W Dead End	Minor Rehabilitation	$ 29,920.00	PCC	7	289	48	296	1202	0.09
Phase 1	11TH COURT SOUTHEAST	GRANT COURT	LINCOLN STREET SOUTHEAST	Minor Rehabilitation	$ 75,366.64	PCC	7	540	48	320	1675	0.12
Phase 1	LINCOLN STREET SOUTHEAST	BRICK STREET SOUTHEAST	11TH COURT SOUTHEAST	Minor Rehabilitation	$ 44,758.22	PCC	7	1090	49	358	995	0.06
Phase 1	TAILFEATHER DRIVE NORTHWEST	SPRUCE DRIVE NORTHWEST	GRANT STREET NORTH	Minor Rehabilitation	$ 17,160.00	PCC	7	76	86	N/A	688	0.04
Phase 1	Annual Streets Maintenance			Preservation	$ 65,000.00	Varies						
Phase 1	Annual Streets Maintenance			Preservation	$ 65,000.00	Varies						
Phase 1	Annual Streets Maintenance			Preservation	$ 65,000.00	Varies						
Average Annual Cost					$ 642,000.00							

Map *9: Phase 1 Projects - $650,000 Annual Budget*

FIGURE 61: CAPITAL IMPROVEMENT PLAN – LIST OF RECOMMENDED PROTECTS (PHASE 2 – FY2029-FY2031)

Phase	Branch	From Intersection	To Intersection	Recommended Treatment Type	Estimated Cost	Surface Type	Functional Classification	AADT	CityPCI	IRI	SY	Miles
Phase 2	GRANT STREET SOUTH	35TH STREET SOUTHWEST	City Limits	Major Rehabilitation	$ 147,213.04	ACC	4	2220	59	171	2723	0.21
Phase 2	GRANT STREET SOUTH	City Limits	35TH STREET SOUTHWEST	Major Rehabilitation	$ 145,119.96	ACC	4	2220	59	147	2686	0.21
Phase 2	14TH STREET SOUTHEAST	LINCOLN STREET SOUTHEAST	MICHAEL STREET SOUTHEAST	Major Rehabilitation	$ 117,973.39	PCC	7	26	76	250	1972	0.12
Phase 2	NORTHWEST 2ND STREET	DEER RIDGE DRIVE NORTHWEST	BLAINE STREET NORTHWEST	Major Rehabilitation	$ 56,322.78	ACC	5	2870	75	107	1039	0.07
Phase 2	NORTHWEST 2ND STREET	GARFIELD STREET NORTHWEST	GRANT STREET NORTH	Major Rehabilitation	$ 49,472.71	ACC	5	2870	68	122	921	0.07
Phase 2	FIFTH STREET NORTHWEST	SHILOH ROSE PARKWAY NORTHWEST	MALLARD POINTE DRIVE NORTHWEST	Major Rehabilitation	$ 150,109.52	PCC	7	98	73	232	2497	0.14
Phase 2	NORTHWEST 2ND STREET	BLAINE STREET NORTHWEST	GARFIELD STREET NORTHWEST	Major Rehabilitation	$ 100,509.87	ACC	5	2870	64	109	1853	0.13
Phase 2	NORTHEAST 78TH AVENUE	NORTHEAST 2ND STREET	NORTHEAST 78TH AVENUE	Major Rehabilitation	$ 634,145.00	ACC	5	520	84	97	11412	0.88
Phase 2	NORTHEAST 2ND STREET	MAIN STREET NORTHEAST	LINCOLN STREET NORTHEAST	Major Rehabilitation	$ 50,984.24	ACC	5	3130	86	109	941	0.07
Phase 2	SNYDER STREET SOUTHEAST	1ST STREET SOUTHEAST	NORTHEAST 2ND STREET	Major Rehabilitation	$ 129,254.40	PCC	7	289	58	352	2150	0.15
Phase 2	NORTHEAST 2ND STREET	LINCOLN STREET SOUTHEAST	LINCOLN STREET NORTHEAST	Major Rehabilitation	$ 28,865.14	PCC	7	289	67	152	484	0.02
Phase 2	MALLARD POINTE DRIVE NORTHWEST	FOURTH STREET NORTHWEST	FIFTH STREET NORTHWEST	Major Rehabilitation	$ 63,413.24	PCC	7	151	84	191	1062	0.06
Phase 2	LINCOLN STREET SOUTHEAST	15TH STREET SOUTHEAST	14TH STREET SOUTHEAST	Major Rehabilitation	$ 66,569.92	PCC	7	26	80	181	1108	0.06
Phase 2	10TH COURT SOUTHEAST	GRANT COURT	LINCOLN COURT	Major Rehabilitation	$ 63,413.24	PCC	7	300	80	294	1053	0.06
Phase 2	WASHINGTON AVENUE	4TH STREET SOUTHEAST	BRICK STREET SOUTHEAST	Major Rehabilitation	$ 126,799.85	PCC	7	6	73	174	2105	0.12
Phase 2	10TH COURT SOUTHEAST	LINCOLN COURT	LINCOLN STREET SOUTHEAST	Major Rehabilitation	$ 63,074.15	PCC	7	300	55	446	1051	0.06
Phase 2	NORTHWEST 2ND STREET	NORTHEAST 64TH STREET	CREEKSIDE DRIVE SOUTHWEST	Major Rehabilitation	$ 81,422.60	ACC	5	3620	77	121	1513	0.11
Phase 2	NORTHWEST 2ND STREET	CREEKSIDE DRIVE SOUTHWEST	FIRESIDE DRIVE NORTHWEST	Major Rehabilitation	$ 61,637.67	ACC	5	3620	66	141	1145	0.08
Phase 2	NORTHWEST 2ND STREET	FIRESIDE DRIVE NORTHWEST	LANDON DRIVE NORTHWEST	Major Rehabilitation	$ 70,769.17	ACC	5	3620	73	119	1312	0.09
Phase 2	NORTHWEST 2ND STREET	LANDON DRIVE NORTHWEST	SHILOH ROSE PARKWAY NORTHWEST	Major Rehabilitation	$ 140,016.43	ACC	5	3620	87	115	2596	0.18
Phase 2	BLAINE STREET NORTHWEST	NORTH 1ST STREET	NORTHWEST 2ND STREET	Major Rehabilitation	$ 54,594.38	PCC	7	289	72	263	907	0.06
Phase 2	TAILFEATHER COURT NORTHWEST	S Dead End	MALLARD POINTE DRIVE NORTHWEST	Major Rehabilitation	$ 75,023.24	PCC	7	26	69	301	1254	0.07
Phase 2	13TH STREET SOUTHEAST	COVE STREET SOUTHEAST	MICHAEL STREET SOUTHEAST	Minor Rehabilitation	$ 22,595.71	PCC	7	51	72	223	901	0.06
Phase 2	13TH STREET SOUTHEAST	LINCOLN STREET SOUTHEAST	COVE STREET SOUTHEAST	Minor Rehabilitation	$ 27,341.22	PCC	7	51	71	255	1089	0.07
Phase 2	JEFFERSON AVENUE	BRICK STREET SOUTHEAST	9TH STREET SOUTHEAST	Minor Rehabilitation	$ 48,430.50	PCC	7	26	86	220	1937	0.13
Phase 2	10TH COURT SOUTHEAST	GRANT STREET SOUTH	GRANT COURT	Minor Rehabilitation	$ 38,016.00	PCC	7	480	64	266	1518	0.07
Phase 2	9TH COURT SOUTHEAST	W Dead End	LINCOLN STREET SOUTHEAST	Minor Rehabilitation	$ 43,657.17	PCC	7	289	65	303	1741	0.12
Phase 2	Annual Streets Maintenance			Preservation	$ 100,000.00	Varies						
Phase 2	Annual Streets Maintenance			Preservation	$ 100,000.00	Varies						
Phase 2	Annual Streets Maintenance			Preservation	$ 100,000.00	Varies						
Average Annual Cost					$ 986,000.00							

Map *10: Phase 2 Projects - $1,000,000 Annual Budget*

FIGURE 62: CAPITAL IMPROVEMENT PLAN – LIST OF RECOMMENDED PROJECTS (PHASE 3 – FY202032-FY2035)

Phase	Branch	From Intersection	To Intersection	Recommended Treatment Type	Estimated Cost	Surface Type	Functional Classification	AADT	CityPCI	IRI	SY	Miles
Phase 3	ALPHA STREET NORTHWEST	SHILOH ROSE PARKWAY NORTHWEST	MALLARD POINTE DRIVE NORTHWEST	Major Rehabilitation	$ 131,246.80	PCC	7	77	73	203	2181	0.12
Phase 3	1ST STREET NORTHWEST	SHILOH ROSE PARKWAY NORTHWEST	MALLARD POINTE DRIVE NORTHWEST	Major Rehabilitation	$ 125,981.04	PCC	7	77	65	258	2098	0.12
Phase 3	ALPHA STREET NORTHWEST	BLAINE STREET NORTHWEST	NORTH 1ST STREET	Major Rehabilitation	$ 142,889.66	PCC	7	289	64	168	2383	0.16
Phase 3	NORTH 1ST STREET	BLAINE STREET NORTHWEST	ALPHA STREET NORTHWEST	Major Rehabilitation	$ 91,712.37	PCC	7	289	67	288	1527	0.10
Phase 3	GARFIELD STREET SOUTHWEST	2ND STREET SOUTHWEST	1ST STREET SOUTHWEST	Major Rehabilitation	$ 52,040.06	PCC	7	289	67	316	864	0.06
Phase 3	15TH STREET SOUTHEAST	LINCOLN STREET SOUTHEAST	MICHAEL STREET SOUTHEAST	Major Rehabilitation	$ 17,607.39	ACC	4	550	86	57	1754	0.12
Phase 3	15TH STREET SOUTHEAST	ADAMS STREET SOUTHEAST	LINCOLN STREET SOUTHEAST	Major Rehabilitation	$ 72,382.23	ACC	4	550	86	64	1335	0.09
Phase 3	DEER RIDGE DRIVE NORTHWEST	THIRD STREET NORTHWEST	5TH COURT NORTHWEST	Major Rehabilitation	$ 107,938.41	PCC	7	100	48	232	1803	0.10
Phase 3	HENRY STREET SOUTHWEST	S Dead End	32ND STREET SOUTHWEST	Major Rehabilitation	$ 107,563.08	PCC	7	26	85	216	1786	0.12
Phase 3	GRANT STREET SOUTH	15TH STREET SOUTHEAST	HUBBELL AVENUE	Major Rehabilitation	$ 22,852.75	PCC	4	550	70	N/A	377	0.03
Phase 3	11TH COURT SOUTHEAST	LINCOLN STREET SOUTHEAST	N Dead End	Major Rehabilitation	$ 74,389.25	PCC	7	289	67	211	1245	0.09
Phase 3	LINCOLN STREET SOUTHEAST	5TH STREET SOUTHEAST	4TH STREET SOUTHEAST	Major Rehabilitation	$ 53,244.76	PCC	7	170	54	307	886	0.06
Phase 3	LINCOLN STREET SOUTHEAST	4TH STREET SOUTHEAST	3RD STREET SOUTHEAST	Major Rehabilitation	$ 51,543.62	PCC	7	170	42	264	866	0.06
Phase 3	DEER RIDGE DRIVE NORTHWEST	6TH COURT NORTHWEST	MULBERRY DRIVE NORTHWEST	Major Rehabilitation	$ 61,286.59	PCC	7	151	75	249	1020	0.06
Phase 3	MALLARD POINTE DRIVE NORTHWEST	ALPHA STREET NORTHWEST	1ST STREET NORTHWEST	Minor Rehabilitation	$ 25,138.00	PCC	7	151	77	262	995	0.06
Phase 3	32ND STREET SOUTHWEST	WOLF CREEK ROAD SOUTHWEST	POPLAR DRIVE SOUTHWEST	Minor Rehabilitation	$ 181,672.92	PCC	5	1330	N/A	N/A	7249	0.23
Phase 3	32ND STREET SOUTHWEST	POPLAR DRIVE SOUTHWEST	COMMERCE PARKWAY SOUTHWEST	Minor Rehabilitation	$ 212,612.85	PCC	5	1330	N/A	N/A	8496	0.27
Phase 3	32ND STREET SOUTHWEST	COMMERCE PARKWAY SOUTHWEST	GRANT STREET SOUTH	Minor Rehabilitation	$ 88,853.13	PCC	5	1330	N/A	N/A	3539	0.11
Phase 3	32ND STREET SOUTHWEST	HENRY STREET SOUTHWEST	WOLF CREEK ROAD SOUTHWEST	Minor Rehabilitation	$ 107,144.74	PCC	5	1330	N/A	N/A	4286	0.14
Phase 3	32ND STREET SOUTHWEST	HUBBELL AVENUE	HENRY STREET SOUTHWEST	Minor Rehabilitation	$ 51,430.43	PCC	5	2630	N/A	N/A	2059	0.07
Phase 3	PLEASANT STREET SOUTHEAST	COURTYARD DRIVE SOUTHEAST	NORTHEAST 2ND STREET	Minor Rehabilitation	$ 138,738.74	ACC	7	460	83	107	3950	0.28
Phase 3	PLEASANT STREET SOUTHEAST	15TH STREET	13TH STREET SOUTHEAST	Minor Rehabilitation	$ 65,776.00	ACC	7	460	78	102	1883	0.12
Phase 3	NORTHEAST 4TH STREET	4TH STREET NORTHWEST	LINCOLN STREET NORTHEAST	Reconstruction	$ 506,204.66	PCC	7	289	48	379	2242	0.16
Phase 3	MAIN STREET NORTHEAST	RAILROAD STREET	GRAIN STREET	Reconstruction	$ 175,241.18	ACC	7	630	44	416	763	0.05
Phase 3	MAIN STREET NORTHEAST	GRAIN STREET	NORTHEAST 2ND STREET	Reconstruction	$ 233,654.91	ACC	7	630	63	206	1020	0.07
Phase 3	LINCOLN STREET NORTHEAST	NORTHEAST 4TH STREET	FIFTH STREET NORTHWEST	Reconstruction	$ 247,885.84	PCC	7	151	73	370	1078	0.06
Phase 3	LINCOLN STREET NORTHEAST	NORTHEAST 2ND STREET	NORTHEAST 3RD STREET	Reconstruction	$ 320,127.92	PCC	7	289	70	302	1390	0.08
Phase 3	LINCOLN STREET NORTHEAST	NORTHEAST 3RD STREET	NORTHEAST 4TH STREET	Reconstruction	$ 247,187.38	PCC	7	289	66	367	1073	0.06
Phase 3	BRICK STREET SOUTHEAST	FILMORE AVENUE	CLEVELAND AVENUE	Reconstruction	$ 208,011.53	PCC	7	289	44	228	904	0.06
Phase 3	BRICK STREET SOUTHEAST	CLEVELAND AVENUE	JEFFERSON AVENUE	Reconstruction	$ 208,011.53	PCC	7	289	55	230	902	0.06
Phase 3	BRICK STREET SOUTHEAST	JEFFERSON AVENUE	WASHINGTON AVENUE	Reconstruction	$ 215,310.18	PCC	7	289	32	364	934	0.06

Phase	Branch	From Intersection	To Intersection	Recommended Treatment Type	Estimated Cost	Surface Type	Functional Classification	AADT	CityPCI	IRI	SY	Miles
Phase 3	Annual Streets Maintenance			Preservation	$ 120,000.00	Varies						
Phase 3	Annual Streets Maintenance			Preservation	$ 120,000.00	Varies						
Phase 3	Annual Streets Maintenance			Preservation	$ 120,000.00	Varies						
Phase 3	Annual Streets Maintenance			Preservation	$ 120,000.00	Varies						
Average Annual Cost					$ 1,210,000.00							

Map *11: Phase 3 Projects - $1,200,000 Annual Budget*

APPENDIX B: PAVEMENT STANDARDS RECOMMENDATIONS

URBAN PAVEMENT SYSTEM DESIGN

For the purposes of this discussion, the pavement system consists of the elements shown in **Figure 63.**

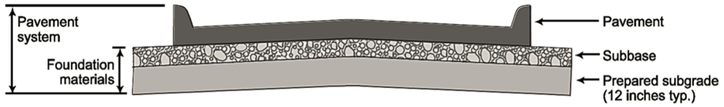


FIGURE 63: ILLUSTRATION PAVEMENT SYSTEM ELEMENTS

This diagram identifies the key elements to a pavement system

Proper design, construction, and maintenance of the various components of the pavement system are critical to the performance of long-life pavements.

PAVEMENT FOUNDATION

It is common for local street and highway pavements to be constructed from PCC supported on a natural subgrade without considering or using a subgrade stabilized treatment or support layer such as an aggregate subbase. When support layers are considered, they typically serve as a construction platform and improve the level of stability and uniformity for the pavement foundation which can result in increased performance and thus increased pavement life. An aggregate subbase can also improve the drainage under the pavement, minimizing the deterioration caused by water entrapment. The question is, how much do they benefit the pavement and is the benefit worth the costs, particularly if the pavement is meeting the design life. [3]

The pavement design life for local roadways (not including heavily traveled arterials or trunk highways) is normally based on the pavement thickness and less concern is typically given to the support system. Unless there are material related distress failures in concrete pavement (i.e. freeze-thaw damage, ASR, D-cracking) the normal mode of failure is the vertical distortions of the pavement surface from subgrade movement. The degradation is normally faulting, slab movement, joint failures, cracking, etc. and is represented by the dropping of the pavement condition index (PCI).[3]

SUBGRADE SOILS

Concrete pavement is relied upon for its durability and strength. For a concrete pavement to provide long term performance, its foundation needs to have uniform support. Typically, in Iowa, the foundation includes the natural subgrade and, in some instances, an aggregate subbase.

Concrete pavement is relied upon for its durability and strength. In order for a concrete pavement to provide long term performance, its foundation needs to have uniform support. Typically, in Iowa, the foundation includes the natural subgrade and, in some instances, an aggregate subbase. If the pavement is placed directly on the natural subgrade, preparation is needed to provide uniformity. At a minimum this includes topsoil removal, scarification of the underlying subgrade to a depth of one foot and compaction to a specified depth, density and moisture content. For additional information, see SUDAS Design Manual Chapter 6.[4]

Typical soils found in the vicinity of Bondurant are moderate to high plasticity soils (fat clays and lean clays with liquid limits greater than 45 and/or plasticity indices greater than 23). These soil types can experience cycles of volume change as moisture contents vary, which can result in upward and downward movement of supported pavements that could cause distortion or structural damage. The soils encountered in Bondurant can be expected to have low k values of 50 to 100 psi/inch and corresponding low CBRs of 1 to 3, as shown in **Table 17,** which indicates subgrade suitability of various soils:

When constructing any pavement (rigid or flexible) on natural subgrade that is subject to poor drainage and/or has poor soils, there will likely be measurable soil breakdown and movement due to freeze-thaw conditions and/or traffic loading.[3]

It should be noted that variability in the soil affects both rigid and flexible pavements. Rigid concrete pavements transfer the traffic load to the aggregate subbase and subgrade foundation at a smaller value than flexible asphalt pavements because they are able to distribute the load to a larger area. For example, a 100-psi tire load typically results in less than 5 psi to the aggregate subbase for concrete pavement and is approximately 20 psi for the aggregate subbase for asphalt pavement. Therefore, asphalt pavement requires a thicker aggregate subbase and/or a thicker pavement to provide additional support and strength as compared to a concrete pavement. Although concrete pavements can perform better than asphalt pavements when subjected to poor support characteristics, they are more rigid and are subject to more tensile cracking.

Table 17 illustrates the subgrade reactions for rigid and flexible pavements.

TABLE 17: SUITABILITY OF SOILS FOR SUBGRADE APPLICATIONS

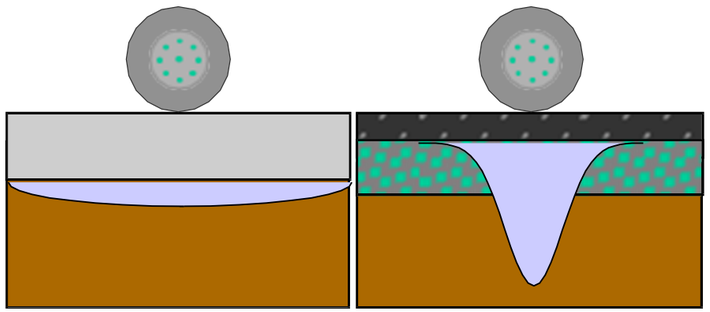
Table 6E-1.01: Suitability of Soils for Subgrade Applications

Subgrade Soils for Design	Unified Soil Classifications	Load Support and Drainage Characteristics	Modulus of Subgrade Reaction (k), psi/inch	Resilient Modulus (M_R), psi	CBR Range
Crushed Stone	GW, GP, and GU	Excellent support and drainage characteristics with no frost potential	220 to 250	Greater than 5,700	30 to 80
Gravel	GW, GP, and GU	Excellent support and drainage characteristics with very slight frost potential	200 to 220	4,500 to 5,700	30 to 80
Silty gravel	GW-GM, GP-GM, and GM	Good support and fair drainage, characteristics with moderate frost potential	150 to 200	4,000 to 5,700	20 to 60
Sand	SW, SP, GP-GM, and GM	Good support and excellent drainage characteristics with very slight frost potential	150 to 200	4,000 to 5,700	10 to 40
Silty sand	SM, non-plastic (NP), and >35% silt (minus #200)	Poor support and poor drainage with very high frost potential	100 to 150	2,700 to 4,000	5 to 30
Silty sand	SM, Plasticity Index (PI) <10, and <35 % silt	Poor support and fair to poor drainage with moderate to high frost potential	100 to 150	2,700 to 4,000	5 to 20
Silt	ML, >50% silt, liquid limit <40, and PI <10	Poor support and impervious drainage with very high frost value	50 to 100	1,000 to 2,700	1 to 15
Clay	CL, liquid limit >40 and PI >10	Very poor support and impervious drainage with high frost potential	50 to 100	1,000 to 2,700	1 to 15

Source: American Concrete Pavement Association; Asphalt Paving Association; State of Ohio; State of Iowa; Rollings and Rollings 1996.

[3] Gross, J., Harrington, D., Wiegand, P., and Cackler, T. Guidance for Improving Foundation Layers to Increase Pavement Performance on Local Roads, Iowa: Report No. TR-640, Iowa Department of Transportation. 2014.

[4] Institute for Transportation, Iowa State University, Statewide Urban Design and Specifications, Design Manual, Rev. 2022



Rigid Pavement Flexible Pavement

FIGURE 64: SUBGRADE REACTION (GROSS)[3]

This diagram shows how loads are distributed differently based on surface type.

STABILIZED SUBGRADES

The need to stabilize subgrades is primarily due to excessive moisture in the subgrade itself.

High moisture in soils may be encountered during construction for reasons ranging from a naturally high water table to seasonal rainfall and even to changes in drainage conditions during construction. Regardless of the cause, in situ wet soils must be addressed before constructing an aggregate subbase or placement of the pavement on the subgrade. Placing subdrains before construction or letting the soil dry out through a natural process is not normally a practical approach because of time constraints. The two most commonly used methods are chemical modification of the soils, particularly in high moisture conditions, and reinforcement/separation.[5]

CHEMICAL STABILIZED SUBGRADE

A stabilized subgrade, such as soil cement or fly ash stabilization, will help to dry out excessive moisture soils and develop the uniformity needed to provide a construction platform and reduce delays during construction. When using chemical stabilizers, the percent of the stabilizer needs to be stipulated when the water content, soil type and freeze- thaw performance are considered. [5]

Cement Modified Soils (CMS) are soils and/or manufactured aggregates mixed with a small portion of Portland cement. CMS are normally used to improve material properties in the subgrade. Also, CMS helps prevent migration of subgrade soil and water into the aggregate subbase and provides some additional strength to the subgrade. CMS are principally used to modify fine grained soils such as silts and clays having high plasticity content. Some specifications require enough cement content to reduce the Plastic Index (PI) within a range of 12 to 15. Typically, a CMS amount equivalent to 3 to 5 percent of the soil's dry weight is incorporated into the mix to achieve the desired strength. This combination allows for the reduction of plasticity, minimization of moisture related volumetric changes, an increase in bearing strength and an improvement in stability. This also provides a weather resistant construction platform.

A successful chemical stabilization can be achieved by incorporating approximately 10 to 15 percent fly ash (measured by dry weight of the native soil) into the existing subgrade. Fly ash can improve the subgrade CBR from 2 to 3 to as much as 25 to 30. It can also improve the unconfined compressive strength from 50 psi to 400 psi. Fly ash stabilized subgrades can also reduce the shrink-swell potential of clay soils and upgrade the condition of marginal soils. It is also a good drying agent for wet soils and provides a working platform during construction.

REINFORCED STABILIZED SUBGRADE

Reinforced subgrade treatment is typically used when subgrades have an unstable (soft) but not extremely high moisture content. This may be accomplished through the use of geosynthetics, such as geogrids and woven geotextiles. [5]

UNSTABILIZED AGGREGATE SUBBASES

Unstabilized aggregate subbases are appropriate when a stable and uniform construction platform will benefit construction. (ACPA 2007) An aggregate subbase support layer can provide a working platform during construction as well as provide uniformity as a support layer. A granular support layer will also serve as a drainage system to help drain surface water away from the pavement as well as provide a cutoff layer from subsurface moisture. If an aggregate subbase is used, a subdrain and outlet will be needed to complete the drainage system due to the poor drainage properties of Iowa soils. [5]

Premature deterioration of PCC pavement joints may be attributed to poorly draining joints, and subsurface drainage will help alleviate the problem (Taylor et al. 2016)[5].

Commonly used Iowa DOT and SUDAS aggregate subbase materials include modified subbase, granular subbase and special backfill. The Iowa DOT and SUDAS specifications for modified subbase and special backfill allow for crushed stone, gravels, and recycled pavement materials meeting material IM210 or uniformly blended combinations of these materials with a maximum of 50 percent (Reclaimed Asphalt Pavement). [6]

The target permeability of approximately 150 feet per day provides the adequate drainage necessary for a pavement foundation layer. Although materials as coarse and open-graded as ASTM No. 57 stone have been used as draining layers, they are not recommended for concrete pavements due to their lack of adequate stability for construction operations and their susceptibility to long-term settlement under heavy truck traffic. It is better to design the gradation of the unstabilized aggregate subbase to include more fines for the sake of stability than to omit the fines for the sake of drainage (ACPA 2007). Therefore, modified subbase is the preferred subbase material for local roadways in Iowa.

In summary, the benefits of aggregate subbases and a drainage system include the following: [5]

- Increases performance and service life
- Provides a construction platform
- Maintains uniform support
- Provides drainage from water infiltration
- Helps reduce shrink and swell of high volume-change soils
- Controls excessive or differential frost heave
- Minimizes mud-pumping of fine-grained soils
- Prevents consolidation of subgrade
- Provides capillary cut off for highwater table

5 Taylor, P., Zhang, J., Wang, X. Conclusions from the Investigation of Deterioration of Joints in Concrete Pavement, Report No. TPF-5(224), Federal Highway Administration, 2016.; ACPA, Subgrades and Subbases for Concrete Pavements, EB204P, American Concrete Pavement Association, 2007.

6 Gross, J., Harrington, D., Wiegand, P., and Cackler, T. Guidance for Improving Foundation Layers to Increase Pavement Performance on Local Roads, Iowa: Report No. TR-640, Iowa Department of Transportation. 2014.

SUBDRAINS

It is known that drainage is also important to the long-term performance of concrete pavement.

Drainage can be achieved with the use of an aggregate subbase with subdrain outlets. It is important to prepare the natural subgrade prior to the placement of the aggregate subbase to achieve the best performance.[5,7]

PAVEMENT FOUNDATION RECOMMENDATIONS

The performance of a pavement depends on the quality of its subgrade and subbase layers. These foundational layers play a key role in mitigating the detrimental effects of climate and the static and dynamic stresses generated by traffic. Therefore, building a stable subgrade and a properly drained subbase is vital for constructing an effective and long-lasting pavement system. [5,7]

In order to determine what soils are present and understand their characteristics, it is essential to complete a geotechnical investigation. It is very important that the conditions of the subgrade are known prior to design in order to select various treatments if necessary, and to specify various materials and preparation to provide uniformity and support for the pavement section. [8]

The subgrade, the layer of soil on which the subbase or pavement is built, provides support to the remainder of the pavement system. It is crucial for highway engineers to develop a subgrade with a California Bearing Ratio (CBR) value of at least 10. Research has shown that if a subgrade has a CBR value less than 10, the subbase material will deflect under traffic loadings in the same manner as the subgrade and cause pavement deterioration[2]. Manipulation, and possibly stabilization, of the on-site soils will be required to achieve this level of support.

The subbase, the layer of aggregate material immediately below the pavement, provides drainage and stability to the pavement. Undrained water in the pavement supporting layers can freeze and expand, creating high internal pressures on the pavement structure. Moreover, flowing water can carry soil particles that clog drains and, in combination with traffic, pump fines from the subbase or subgrade. It is therefore crucial that highway engineers develop a stable, permeable subbase with longitudinal subdrains[2]. According to the MEPDG analysis for low volume roads, PCC pavement systems with aggregate subbase thickness above 5 inches, do not show a significant benefit over thicker sections. Two thickness options to consider include 1) 6" or more to accommodate migration of soil into the aggregate, or 2) 4"-5" with a separation layer of geotextile or stabilized subgrade.[7,8]

Longitudinal subdrains are essential with subbases to provide positive subsurface drainage. Rigid or corrugated plastic pipe meeting SUDAS specifications, minimum 6" in diameter, with perforations, and sufficient outlets to storm sewer structures or daylighted are recommended. In areas, where parallel storm sewer is present, it may be possible to utilize the storm sewer piping, along with porous rock backfill and open joints covered with engineering fabric, to serve as longitudinal subdrains. Also, if sized adequately, the subdrains could also serve as a footing drain collector line for adjacent private properties.

Recommendation:

- Conduct geotechnical investigation in all new developments to determine the suitability of soils to be used for pavement subgrade
- Improve subgrade support to provide a CBR of 10, unless the geotechnical investigation determines subgrade soils are adequate
- Construct drainable subbase, using material meeting requirements of SUDAS modified subbase, and install longitudinal subdrains, unless the geotechnical investigation determines the subgrade soil is free draining

Pavement

PAVEMENT THICKNESS

- It is typical and current practice to use a pre-determined minimum pavement thickness for local roads. These minimum thicknesses are typically 6 or 7 inches. [8]
- Some current thickness design methodologies were developed for facilities with more traffic and may not be applicable for local roads with lower traffic volumes. [8]
- Because local roads do not carry significant levels of heavy traffic and because some thickness design methodologies revert to predetermined minimums, modifying the design parameters for improved foundations with geotextiles and aggregate subbases will not decrease the thickness design significantly. [8]
- It is common for PCC pavements to be designed for 40 to 50 years of service based on a pavement thickness design. Some older pavements were designed for only 20 years. Although pavements are reaching the specified design life, the last 15 to 20 percent of its design life may be at a low level of service including poor rideability. On a PCI scale this may include the lower end of the fair category and possibly the poor category. [8]

The SUDAS pavement thickness tables, SUDAS Design Section 5F-1, provide recommended pavement thicknesses for various calculated ESALs, subgrade conditions, roadway types, and pavement types. The calculated thicknesses are based on the AASHTO *Guide for the Design of Pavement Structures,* which is used throughout the industry for pavement thickness design. Due to established policies in many jurisdictions across the state, the minimum pavement thickness for streets on natural subgrade was set at 7 inches for rigid pavement and 8 inches for flexible pavement. For pavements with a granular subbase, the minimum thickness was set at 6 inches for both pavement types. As noted in the thickness tables, whenever a thickness was calculated that was less than the minimum, the minimum was used. [8]

PCC PAVEMENT JOINTING

Proper jointing is critical to the performance of PCC pavements. A well-designed jointing system will:

- Control cracking
- Divide the pavement into practical construction increments
- Accommodate slab movement
- Provide load transfer

[7] Schaefer, V., Stevens, L., White, D., Ceylan, H. Design Guide for Improved Quality of Roadway Subgrades and Subbases, Iowa: Report No. TR-525, Iowa Department of Transportation, 2008.

[8] Tay[8] Taylor, P., Zhang, J., Wang, X. Conclusions from the Investigation of Deterioration of Joints in Concrete Pavement, Report No. TPF-5(224), Federal Highway Administration, 2016.; ACPA, Subgrades and Subbases for Concrete Pavements, EB204P, American Concrete Pavement Association, 2007.

LOAD TRANSFER[9]

For jointed concrete pavements to perform adequately, traffic loadings must be transferred effectively from one side of the joint to the other. This is called load transfer. Adequate load transfer results in lower deflections, which reduces faulting, spalling, and corner breaks, thereby increasing pavement life. Load transfer across joints for street pavements is developed either by aggregate inter-lock or dowel bars.

Aggregate interlock is the interlocking action between aggregate particles at the face of the joint. It relies on the shear interaction between aggregate particles at the irregular crack faces that form below the saw cut. This form of load transfer has been found to be most effective on roadways with short spacings and low truck volumes. Studies have found that aggregate interlock load transfer provides acceptable pavement performance when truck semi-trailer volumes are fewer than 80 to 120 trucks per day per lane. Laboratory and field studies have shown that aggregate interlock load transfer is improved with subgrade strength; size, angularity, and durability of the aggregate; joint face roughness; and slab thickness. Furthermore, these studies found that shorter slabs increase aggregate interlock effectiveness by reducing the movement and opening at each joint.

DOWEL BARS[9]

Dowel bars are round, smooth, steel bars placed across transverse joints to transfer loads without restricting horizontal joint movements due to thermal and moisture contractions and expansions. They also keep slabs in horizontal and vertical alignment. Dowels reduce deflections and stresses due to traffic loads. This in turn prevents or reduces faulting, pumping, and corner breaking on roadways that carry a large number of trucks and/or have longer joint spacings. The use of dowel bars for minimizing faulting and pumping should be considered when the slabs are longer than 20 ft (6.0 m), when truck semi-trailer traffic exceeds 80 to 120 per day per lane, or when the accumulated design traffic exceeds four to five million AASHTO ESAL's per lane. Typically, this truck traffic level requires an 8-in.-thick slab or greater. Since most residential city streets do not experience these truck traffic levels and recommended joint spacings are not greater than 15 ft., dowels are generally not necessary.

TRANSVERSE CONTRACTION JOINTS[9]

TABLE 18: TRANSVERSE JOINT REQUIREMENTS (SUDAS 5G-2.01)

Pavement Thickness	Transverse Joint Type	Transverse Joint Spacing
6”	C	12’
7”	C	15’
8”	CD[1]	15’
9”	CD[1]	15’
≥ 10”	CD[1]	17’

[1] No dowels within 24” of the back of curb

Contraction joints constructed transversely across pavement lanes are spaced to control natural initial and mature cracking of the concrete pavement. The joint interval is designed so that intermediate (random) transverse cracks do not form.

Joint spacing for jointed plain (unreinforced) concrete pavements (JPCP) depends on slab thickness, concrete aggregate, subgrade/subbase support, and environmental conditions. Transverse joint spacing should be limited to 24T (T is slab thickness) for pavements on subgrades and granular subbases or 21T if the pavement is placed on stabilized subbases, existing concrete, or asphalt. Transverse joint spacing is12 feet for pavements 6 inches thick, 15 feet for pavements 7 to 9 inches thick, and 20 feet for pavements over 9 inches thick. Longitudinal joint spacing for two lane streets, where lane delineation is not necessary, should be limited to a maximum of 10 feet. Generally, transverse joint spacing should not exceed 150% of the longitudinal joint spacing. SUDAS Table 5G-2.01 provides transverse and longitudinal joint spacings for standard two-lane streets.

LONGITUDINAL CONTRACTION JOINTS[9]

Longitudinal contraction joints release stresses from restrained warping and dynamic loading. A longitudinal joint is usually placed at the center of the pavement to allow the pavement to hinge due to lane loading and help delineate separation of opposing traffic. Controlling cracking and proper constructability are the primary functions of longitudinal contraction joints. Lane delineation is a secondary function.

An important consideration when establishing the distance between longitudinal joints for jointed plain concrete pavements is the prevention of random longitudinal cracking at the quarter point, which is the midpoint between the centerline and the back of the curb. Pavements less than 9 inches thick may not crack through a longitudinal joint placed close to the gutter, which could cause longitudinal cracks at the quarter point. Quarter point jointing will address this concern. Gutterline jointing, with a longitudinal joint closer than five feet from the edge of pavement, is discouraged unless widening is imminent in the future and the pavement thickness is at least 9 inches.

The following are the longitudinal jointing options provided by SUDAS Design Section 5G-2 for 26’ B-B and 31’ B-B standard width pavements:

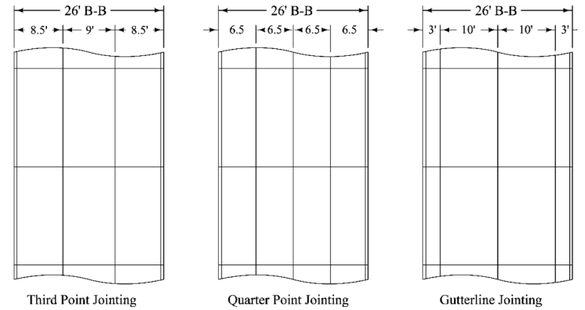


FIGURE 65: 26 FOOT B-B PAVEMENT (SUDAS 5G-2.04)

Jointing options for a 26’ wide pavement

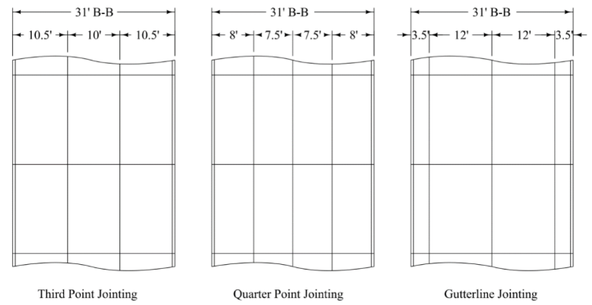


FIGURE 66: 31 FOOT B-B PAVEMENTS (SUDAS 5G-2.05)

Jointing options for a 31’ wide pavement.

[9] ACPA, Design and Construction of Joints for Concrete Streets, American Concrete Pavement Association, 1992.

PCC PAVEMENT MIX[10]

Municipalities in Iowa typically specify concrete mixes in the following way. If the city does not have joint deterioration concerns, then they often continue using their default Class C mix. SUDAS Section 7010 refers to Iowa DOT IM 529 and simply indicates that cities should use Iowa DOT Class C (or M) mix as described.

If the city has concerns with joint deterioration, then they should consider one of two high-durability mixes: C-SUD or CV-SUD. These mixes are identified in Iowa DOT IM 529. The C-SUD and CV-SUD mixes have the SUD designation for SUDAS. The “V” designation refers to the use of a Class V aggregate as specified in Iowa DOT Section 4117. While a conventional Class C concrete has a target w/c ratio of 0.43 and max of 0.488, the C-SUD mix has a target of 0.40 and max of 0.45. As a result, a C-SUD mix provides a more durable concrete pavement with lower permeability than conventional Class C mix due to its lower w/c ratio. With slip-form paving operations, however, the w/c ratio will typically be lower than the target w/c ratio during production with any mix design. The higher durability is desired to reduce joint deterioration due to the use of deicing chemicals. A joint saturated with de-icing salts limits the ability to allow the joint to dry out. To maintain the lower w/c ratio, a low- or mid-range water reducer may be necessary. For even greater durability, the use of ternary mixes should also be considered. Further references for mix proportioning in C-SUD and CV-SUD can be found in the Proportion Table 4 of Iowa DOT Materials IM 529. Note that these mixtures assume a basic w/c ratio of 0.40 and a maximum w/c ratio of 0.45.

The above mixture is based on Type I or Type II cements (Sp. G. = 3.14). Mixes using blended cements (Type IP or IS) must be adjusted for cement gravities listed in IM 401. Use proportions listed above if not utilizing three aggregates. The above mixture is based on Type IP cements.

[10] Weiss, J., Ley, M.T., Sutter, L. Harrington, D., Gross, J. Guide to the Prevention and Restoration of Early Joint Deterioration in Concrete Pavements, Iowa: Report No. TR-697, Iowa Department of Transportation, 2016.

Current Design Standards

The City of Bondurant does not have a formally adopted design standard for pavements. However, guidance provided to designers includes the following:

- Jointed plain concrete pavement (JPCP), 7” thick
- Standard Class C mix
- Jointing is determined by designer
- The required pavement foundation consists of prepared subgrade utilizing on-site soils
- The typical cross-section shown in **Figure 67**

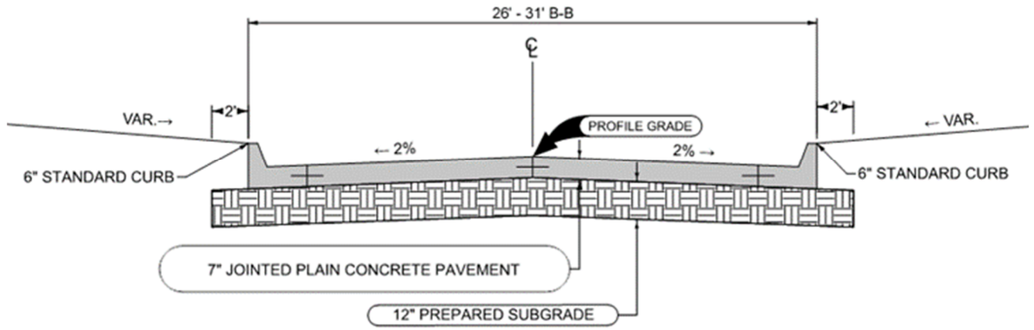


FIGURE 67: CURRENT DESIGN STANDARD

This diagram identifies the elements of the standard Bondurant pavement. A simple slab placed directly on a prepared subgrade.

PAVEMENT FOUNDATION RECOMMENDATIONS

Geotechnical Investigation: Conduct geotechnical investigations in all new developments to determine the suitability of soils to be used for pavement subgrade.

Subgrade: Improve subgrade support to provide a CBR of 10, unless the geotechnical investigation determines subgrade soils are adequate.

Subbase and Subdrain: Construct drainable subbases, using material meeting requirements of SUDAS modified subbase, and install longitudinal subdrains, unless the geotechnical investigation determines the subgrade soil is free draining. The depth of the subbase should be 6” on the prepared subgrade or 4” with an appropriate geotextile between the prepared subgrade and the subbase material.

PAVEMENT RECOMMENDATIONS

For the purposes of this discussion, the recommendations are for typical low-volume local streets, which have little truck traffic, not exceeding 85 trucks/day.

Pavement Thickness: The SUDAS pavement thickness design table for local low volume streets indicates a 6”-thick JPCP with an adequate foundation will perform satisfactorily and provide a 50-year life, according to the AASHTO design guide. However, experience across Iowa has shown 7” pavement will outperform the thinner pavement and is the standard thickness for most jurisdictions and is the recommended thickness of JPCP.

Pavement Jointing: Transverse joint spacing for 7”-thick JPCP paving should not exceed 15 feet, and ‘C’ joints, without dowels, is recommended because of the low truck volumes expected. Either quarter-point or third-point longitudinal jointing is recommended for 26’-wide pavements. Quarter-point jointing is recommended for 31’-wide pavements.

Pavement Mix: A Class C-SUD concrete mix is recommended. To help prevent early pavement joint deterioration, special attention should be given to maintaining adequate air content in the pavement after placement, in the range of 6% to 8%. Also, a water to cement ratio (w/c) of 0.40, with 0.45 maximum, is required. Supplementary cementitious materials (SCMs) are encouraged, and cement replacement rates of 20-25% Class F fly ash or 30-35% Class C fly ash or a combination of 20% slag and 20% Class C fly ash should be considered.

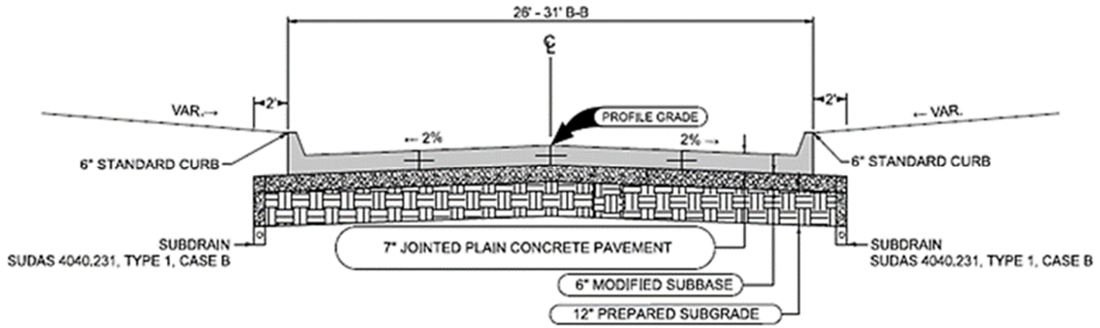


FIGURE 68: RECOMMENDED DESIGN STANDARD (SUDAS)

This diagram identifies the elements of the proposed SUDAS pavement standard. Prepared subgrade, aggregate subbase, subdrain, and a slab designed for the conditions.

RECOMMENDED VS. CURRENT STANDARDS BENEFIT/COST COMPARISON

The following cost comparison and the benefits of the recommended higher standard of design will focus only on the costs associated with the pavement system, as previously defined, and will not include all other development infrastructure costs, such as site grading, storm sewer, water main, sanitary sewer, etc. In addition, no cost benefit has been determined for other benefits of long-lasting pavements, such as prolonged higher service level and less inconvenience to the adjoining properties and traveling public.

The additional costs from the recommendations are for the drainable subbase and the subdrain. Other recommendations, such as the geotechnical investigation, subgrade CBR of 10, and the Class C-SUD concrete mix are either required or recommended by SUDAS and should not add cost to the paving system.

ADDITIONAL COSTS DUE TO RECOMMENDED PAVEMENT SYSTEM STANDARDS

To determine the relative costs of the pavement system using the current Bondurant pavement design standards and the recommended standards, two representative residential street segments were used.

- A two-block segment of 26'-wide street paving, 900'-long from center of intersection to center of intersection
- A one-block segment of 26'-wide street paving, 870'-long from center of intersection to center of intersection

As previously mentioned, only pavement system costs were compared, which included excavation (for the pavement only), subgrade preparation, subbase and subdrains (for the recommended standard), and pavement. **Table 19 & Table 21** determine the estimated cost per square yard of the pavement system, including pavement and pavement foundation.

TABLE 19 CURRENT STANDARD COST COMPARISON – TWO-BLOCK 900' SEGMENT

Item No.	Item	Unit	Unit Price	Quantity	Total Cost
1	Excavation, Class 10	CY	$10.00	1136	$11,360.00
2	Subgrade Preparation	SY	$4.00	3408	$13,632.00
3	PCC Pavement, 7"	SY	$74.00	3009	$222,666.00
				Total	$247,658.00
				Cost/SY	**$82.31**

TABLE 20: RECOMMENDED STANDARD COST COMPARISON – TWO-BLOCK 900' SEGMENT

Item No.	Item	Unit	Unit Price	Quantity	Total Cost
1	Excavation, Class 10	CY	$10.00	1704	$17,040.00
2	Subgrade Preparation	SY	$4.00	3408	$13,632.00
3	Subbase, Modified, 6"	SY	$10.00	3408	$34,080.00
4	PCC Pavement, 7"	SY	$74.00	3408	$222,666.00
5	Subdrains, PVC, 6" *	LF	$20.00	1112	$22,240.00
6	Subdrain Cleanout	EA	$800.00	3	$2,400.00
7	Subdrain Outlets and Connections	EA	$500.00	3	$1,500.00
				Total	$313,558.00
				Cost/SY	**$104.21**

TABLE 21: CURRENT STANDARD COST COMPARISON– ONE-BLOCK 870' SEGMENT

Item No.	Item	Unit	Unit Price	Quantity	Total Cost
1	Excavation, Class 10	CY	$10.00	1035	$10,350.00
2	Subgrade Preparation	SY	$4.00	3104	$12,416.00
3	PCC Pavement, 7"	SY	$74.00	2718	$201,132.00
				Total	$223,898.00
				Cost/SY	**$82.38**

TABLE 22: RECOMMENDED STANDARD COST COMPARISON– ONE-BLOCK 870' SEGMENT

Item No.	Item	Unit	Unit Price	Quantity	Total Cost
1	Excavation, Class 10	CY	$10.00	1552	$15,520.00
2	Subgrade Preparation	SY	$4.00	3104	$12,416.00
3	Subbase, Modified, 6"	SY	$10.00	3104	$31,040.00
4	PCC Pavement, 7"	SY	$74.00	2718	$201,132.00
5	Subdrains, PVC, 6" *	LF	$20.00	1187	$23,740.00
6	Subdrain Cleanout	EA	$800.00	2	$1,600.00
7	Subdrain Outlets and Connections	EA	$500.00	4	$2,000.00
				Total	$287,448.00
				Cost/SY	**$105.76**

COST COMPARISON

COST OF PAVEMENT SYSTEMS

The following is a comparison of the costs of the current design standards and the recommended design standards for two similar sections of pavement in a residential area, as previously described:

Example 1: Two-block 900' Segment

Additional pavement system cost due to recommended design standards

$104.21 - $82.31 = +$21.90/SY

Percent increase in pavement system cost due to recommended design standards

$21.90 / $82.31 = +26.6%

COST OF RESIDENTIAL LOTS

Another way to look at this additional cost is how it might affect the cost of each residential development lot. As an illustration, a normal residential lot is presumed to be 70'± wide and 140'± deep and corner lots are 90' wide. Using the two street pavement examples illustrated in Section 6.1, the following costs are calculated:

Example 1: Two-block 900' segment

As many as 20 lots or as few as 12 lots could front on the street segment, depending on orientation. Assuming an average of 16 lots, the additional cost per lot for the improved standards would be $65,900 / 16 lots = $4,118.75/lot.

Example 2: One-block 870' segment

As many as 22 lots or as few as 18 lots could front on the street segment, depending on orientation. Assuming an average of 20 lots, the additional cost per lot for the improved standards would be $63,550 / 20 lots = $3,177.50/lot.

An estimated per lot additional cost due to the recommended standards ranges from $3,177.50 to $4,118.75, or an average of $3,648.13.

Example 2: One-block 870' Segment

Additional pavement system cost due to recommended design standards

$105.76 - $82.38 = +$23.38/SY

Percent increase in pavement cost due to recommended design standards

$23.38 / $82.38 = +28.4%

Averages of the two examples yield the following results due to the recommended design standards:

Additional pavement system cost +$22.64

Percent increase in pavement system cost +27.5%

LIFE BENEFIT OF RECOMMENDED STANDARDS

As indicated in previous discussions, improved pavement foundations and subsurface drainage will substantially increase the expected life of a pavement. It is also expected that improved jointing and concrete mixtures with provide additional longevity and improved service. Properly designed and maintained PCC pavements should be expected to provide at least 50 years of good service, as opposed to the expected life of 30 to 35 years for the current design standards. Therefore, a conservative estimate of the additional pavement life for the recommended pavement system standards is 15 years.

Additional pavement life due to recommended design standards

50 years – 35 years =	+15 years

Percent increase in pavement life due to recommended design standards

15 years / 35 years =	+42.8%

Benefit/Cost Ratio

Life Benefit Increase % / Additional Cost % = 42.8% / 27.5% =	1.56:1

FUTURE RECONSTRUCTION SAVINGS

As would be anticipated with additional expected life, pavements constructed at the higher recommended design standards should require reconstruction less frequently. As an illustration, over a period of 100 years, it would be expected that pavement constructed with the recommended design standards would require only one pavement reconstruction to last that period of time. On the other hand, pavement constructed at the current design standard would require two reconstructions to serve for a similar length of time.

Based on present costs and the cost of removing and replacing only the pavement in the future, and not including other associated work, such as excavation, intakes, drives, design, and other associated costs, the following assumptions using an average of the two previous pavement examples of similar length are made:

- Number of residential lots: 18
- Total area of pavement: 2,864 SY
- Area of pavement per lot: 159 SY
- Initial cost of pavement with current design: $82.35/SY
- Initial cost of pavement with recommended design: $104.99/SY
- Cost to remove and replace pavement = $12 + $74 = $86/SY

the following conservative costs could be expected:

Costs for pavement constructed with <u>current</u> design standards to serve for 100 years

Initial pavement system cost:	
2,864 SY @ $82.35 =	$235,850
Initial pavement system cost per residential lot:	
$235,850 / 18 lots =	$13,103
Pavement reconstruction cost at 35 years:	
2,864 SY @ $86.00 =	$246,304
Pavement reconstruction cost per residential lot at 35 years:	
$246,304 / 18 lots =	$13,684
Pavement reconstruction cost at 70 years:	
2,864 SY @ $86.00 =	$246,304
Pavement reconstruction cost per residential lot at 70 years:	
$246,304 / 18 lots =	$13,684
Total pavement costs with current design standards for 100 years:	
Pavement system initial cost and pavement reconstruction costs	$728,458
Pavement system initial cost and pavement reconstruction costs per lot	$40,470

Cost for pavement constructed with <u>recommended</u> design standards to serve for 100 years

Initial pavement system cost:	
2,864 SY @ $104.99 =	$300,691
Initial pavement system cost per residential lot:	
$300,691 / 18 lots =	$16,705
Pavement reconstruction cost at 50 years:	
2,864 SY @ $86.00 =	$246,304
Pavement reconstruction cost per residential lot at 50 years:	
$246,304 / 18 lots =	$13,684
Total pavement costs with recommended design standards for 100 years:	
Pavement system initial cost and pavement reconstruction costs	$546,995
Pavement system initial cost and pavement reconstruction costs per lot	$30,388

For each residential lot, an initial investment of approximately $3,648 more for longer lasting pavement using the recommended design standards will reduce future reconstruction costs by an estimated $10,082 in present day dollars.

FIGURE 69: PROJECTED PAVEMENT CONSTRUCTION & RECONSTRUCTION TIMELINE -100-YEAR CYCLE (AVERAGE STREET SEGMENT)

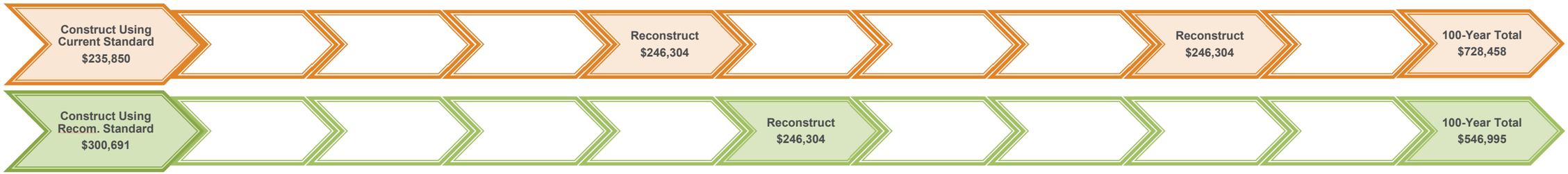
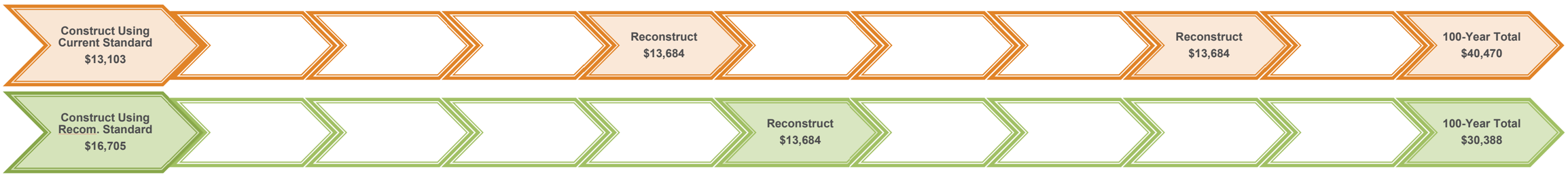


FIGURE 70: PROJECTED PAVEMENT CONSTRUCTION & RECONSTRUCTION TIMELINE -100-YEAR CYCLE (PER LOT)



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Pavement Management Study
City of Bondurant, Iowa

Interim Report #1

PCC Pavement Design Standards Review and Recommendations

September, 2023

HR Green Project No: 2302984

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.

Date:

LARRY J. STEVENS, P.E.

License No. **09350**

My renewal date is **December 31**, **2023**

Pages or sheets covered by this seal:

ALL

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EXECUTIVE SUMMARY

This report provides research, data, and practical experience for the proper design of a pavement system, which includes the pavement foundation and the pavement. Recommendations are made to improve the City of Bondurant's design standards for local low-volume residential street pavements with little truck traffic to provide longer lasting pavements that are more sustainable and provide better service to City residents. In addition, a benefit/cost analysis was performed to compare the City's current standards with the recommended standards.

It should be noted that while these recommendations are for improvements to the City of Bondurant's residential street design standards, the need for quality pavement systems are essential for long-lasting performance of all of the City's street pavements, including arterial and collector streets. Those pavements that serve higher volumes of traffic and heavy trucks should have special designs to accommodate those conditions.

BACKGROUND

The pavement system is defined as the pavement and the foundation materials, including subbase, if required, and prepared subgrade. Proper design, construction, and maintenance of the various components of the pavement system are critical to the performance of long-life pavements.

The performance of a pavement depends on the quality of its subgrade and subbase layers. These foundational layers play a key role in mitigating the detrimental effects of climate and the static and dynamic stresses generated by traffic. Therefore, building a stable subgrade and a properly drained subbase is vital for constructing an effective and long lasting pavement system.

Key factors in the design of concrete pavements include thickness, proper jointing, concrete mixture selection, and quality control.

The City of Bondurant's current local residential street pavement design standards include a prepared (compacted) subgrade consisting of in-place soils, which are generally poor quality pavement subgrade materials and do not provide adequate subsurface drainage. Pavement is standard Portland Cement Concrete, Iowa DOT Class C mix, 7"-thick jointed plain concrete pavement (JPCP). Pavement systems with this type of foundation are frequently specified in Iowa but have a shorter expected life, about 30 to 35 years, than design standards currently recommended by the Iowa Statewide Urban Design and Specifications Program (SUDAS) and other Industry standards. SUDAS provides design standards for the pavement and the pavement foundation, which are projected to have a life of at least 50 years.

RECOMMENDED BONDURANT PAVEMENT SYSTEM STANDARDS

Based on SUDAS guidelines and other supporting research, the following pavement system design standards are recommended for local low volume residential streets in Bondurant:

Pavement Foundation:

- Conduct geotechnical investigations in all new developments to determine the suitability of soils to be used for pavement subgrade.
- Improve subgrade support to provide a CBR of 10, unless the geotechnical investigation determines subgrade soils are adequate.
- Subbase and Subdrain: Construct drainable subbases and install longitudinal subdrains, unless the geotechnical investigation determines the subgrade soil is free draining.

Pavement:

- Pavement Thickness: Require 7"-thick JPCP.
- Pavement Jointing: For JPCP paving, transverse joint spacing should not exceed 15 feet and 'C' joints, without dowels, is recommended. Quarter-point jointing is recommended for 31'-wide streets. Third point jointing is recommended for 26'-wide streets.

- Pavement Mix: A Class C-SUD concrete mix is recommended. To help prevent early pavement joint deterioration, special attention is given to maintaining adequate air content in the pavement after placement and low water to cement ratio (w/c). Supplementary cementitious materials (SCMs) are encouraged as a cement replacement to reduce the pavement's permeability.

BENEFIT/COST ANALYSIS OF RECOMMENDED STANDARDS

Pavement system quantities, which included excavation (for the pavement only), subgrade preparation, subbase and subdrains (for the recommended standard), and pavement, were estimated for two typical sections of residential street using the current street pavement standards and the recommended standards. One typical section consisted of two consecutive blocks of paving with an intersection in the middle, and the other was a similar length pavement without an intersecting street.

For each typical section, the additional cost of the recommended standards was calculated on the basis of square yards of pavement. Using an average cost of the two pavement examples, the pavement system cost increased by 27.5% due to the recommended design standards.

However, the life expectancy of the pavement is conservatively estimated to increase from 35 years to 50 years, an increase of 42.8%. Therefore, the benefit/cost ratio is over 1.6:1, based on the pavement system cost increase compared to the increase in pavement longevity.

In addition, an estimate was provided how this may affect the cost of a residential lot. An increase of approximately $3,602 per lot could be expected due to the higher pavement system design standard.

Further analysis was conducted for a 100-year cycle of pavement construction and reconstruction, which includes three pavement constructions for the current design standards and two for the recommended standards. This long-term analysis indicates the total cost of pavement construction over this period reduces from $728,458 for current design to $546,995 with the recommended standards. Average per lot costs for the pavement are reduced from $40,470 to $30,388. For each residential lot, an initial investment of approximately $3,602 more for longer lasting pavement using the recommended design standards will reduce future reconstruction costs by an estimated $10,082 in present day dollars.

1. PURPOSE

Interim Report #1 will address a portion of the first task of the City of Bondurant's Pavement Management Study, which includes the following work task:

- *Review of Bondurant's design standards for street construction and maintenance practices and making recommendations for improvements to achieve long-lasting pavements*

The City wishes to implement improved long-lasting PCC pavement design standards. Interim Report #1 will address only residential street design standards identified in the first task, which includes the following scope of services to be provided by HR Green:

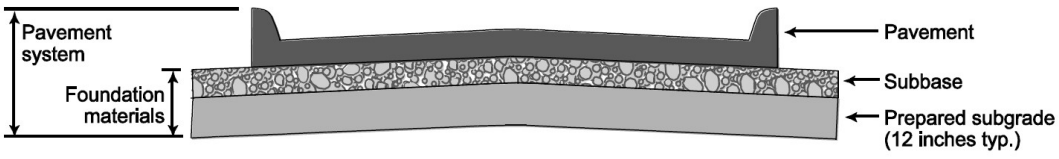
> The City's current pavement design requirements will be compared to the standards established by the Iowa Statewide Urban Design and Specifications (SUDAS) Program. Other relevant Iowa State University research, such as IHRB Project TR-640 *Optimizing Pavement Base, Subbase, and Subgrade Layers for Cost and Performance of Local Roads*, will be utilized in the comparison, in addition to a number of other sources. This will include analyzing all elements of the pavement system, including subgrade, subbase, subsurface drainage, pavement thickness, PCC mixtures, pavement jointing, and construction methods. Recommendations will be made to the City's guidelines to help achieve a 50-year design life of the City's pavements.

The comparison of the City's current PCC pavement design guidelines to recommended design standards will consist of the following for Pavement System Design for Urban Local Streets:

- PCC pavement foundation
- PCC pavement
- Current Bondurant design standards for PCC pavement systems
- Recommended Bondurant design standards for PCC pavement systems
- Recommended vs. Current standards cost/benefit comparison

2. PCC PAVEMENT SYSTEM DESIGN FOR URBAN LOCAL STREETS

For the purposes of this discussion, the pavement system consists of the elements shown in the following illustration from Iowa Statewide Urban Design and Specifications (SUDAS) Design Manual Section 6A-1:



Proper design, construction, and maintenance of the various components of the pavement system are critical to the performance of long-life pavements.

2.1 PCC PAVEMENT FOUNDATION

It is common for local street and highway pavements to be constructed from PCC supported on a natural subgrade without considering or using a subgrade stabilized treatment or support layer such as an aggregate subbase. When support layers are considered, they typically serve as a construction platform and improve the level of stability and uniformity for the pavement foundation which can result in increased performance and thus increased pavement life. An aggregate subbase can also improve the drainage under the pavement, minimizing the deterioration caused by water entrapment. The question is how much do they benefit the pavement and is the benefit worth the costs, particularly if the pavement is meeting the design life.[1]

The pavement design life for local roadways (not including heavily traveled arterials or trunk highways) is normally based on the pavement thickness and less concern is typically given to the support system. Unless there are material related distress failures in concrete pavement (ie. freeze-thaw damage, ASR, D-cracking) the normal mode of failure is the vertical distortions of the pavement surface from subgrade movement. The degradation is normally faulting, slab movement, joint failures, cracking, etc. and is represented by the dropping of the pavement condition index (PCI).[1]

2.1.1 SUBGRADE SOILS

Concrete pavement is relied upon for its durability and strength. In order for a concrete pavement to provide long term performance, its foundation needs to have uniform support. Typically in Iowa, the foundation includes the natural subgrade and in some instances, an aggregate subbase. If the pavement is placed directly on the natural subgrade, preparation is needed to provide uniformity. At a minimum this includes topsoil removal, scarification of the underlying subgrade to a depth of one foot and compaction to a specified depth, density and moisture content. For additional information, see SUDAS Design Manual Chapter 6.[1]

Typical soils found in the vicinity of Bondurant are moderate to high plasticity soils (fat clays and lean clays with liquid limits greater than 45 and/or plasticity indices greater than 23). These soil types can experience cycles of volume change as moisture contents vary, which can result in upward and downward movement of supported pavements that could cause distortion or structural damage. The soils encountered in Bondurant can be expected to have low k values of 50 to 100 psi/inch and corresponding low CBRs of 1 to 3, as shown in the following table from SUDAS Design Section 6E-1, which indicates subgrade suitability of various soils:

TABLE 1: SUITABILITY OF SOILS FOR SUBGRADE APPLICATIONS

Table 6E-1.01: Suitability of Soils for Subgrade Applications

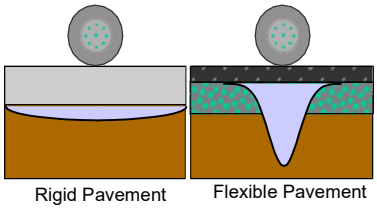
Subgrade Soils for Design	Unified Soil Classifications	Load Support and Drainage Characteristics	Modulus of Subgrade Reaction (k), psi/inch	Resilient Modulus (M_R), psi	CBR Range
Crushed Stone	GW, GP, and GU	Excellent support and drainage characteristics with no frost potential	220 to 250	Greater than 5,700	30 to 80
Gravel	GW, GP, and GU	Excellent support and drainage characteristics with very slight frost potential	200 to 220	4,500 to 5,700	30 to 80
Silty gravel	GW-GM, GP-GM, and GM	Good support and fair drainage, characteristics with moderate frost potential	150 to 200	4,000 to 5,700	20 to 60
Sand	SW, SP, GP-GM, and GM	Good support and excellent drainage characteristics with very slight frost potential	150 to 200	4,000 to 5,700	10 to 40
Silty sand	SM, non-plastic (NP), and >35% silt (minus #200)	Poor support and poor drainage with very high frost potential	100 to 150	2,700 to 4,000	5 to 30
Silty sand	SM, Plasticity Index (PI) <10, and <35 % silt	Poor support and fair to poor drainage with moderate to high frost potential	100 to 150	2,700 to 4,000	5 to 20
Silt	ML, >50% silt, liquid limit <40, and PI <10	Poor support and impervious drainage with very high frost value	50 to 100	1,000 to 2,700	1 to 15
Clay	CL, liquid limit >40 and PI >10	Very poor support and impervious drainage with high frost potential	50 to 100	1,000 to 2,700	1 to 15

Source: American Concrete Pavement Association; Asphalt Paving Association; State of Ohio; State of Iowa; Rollings and Rollings 1996.

When constructing any pavement (rigid or flexible) on natural subgrade that is subject to poor drainage and/or has poor soils, there will likely be measurable soil breakdown and movement due to freeze-thaw conditions and/or traffic loading.[1]

It should be noted that variability in the soil affects both rigid and flexible pavements. Rigid concrete pavements transfer the traffic load to the aggregate subbase and subgrade foundation at a smaller value then flexible asphalt pavements because they are able to distribute the load to a larger area. For example, a 100 psi tire load typically results in less than 5 psi to the aggregate subbase for concrete pavement and is approximately 20 psi for the aggregate subbase for asphalt pavement. Therefore, asphalt pavement requires a thicker aggregate subbase and/or a thicker pavement to provide additional support and strength as compared to a concrete pavement. Although concrete pavements can perform better than asphalt pavements when subjected to poor support characteristics, they are more rigid and are subject to more tensile cracking. Figure 1 illustrates the subgrade reactions for rigid and flexible pavements.[1]

FIGURE 1: SUBGRADE REACTION



2.2 Stabilized Subgrades

The need to stabilize subgrades is primarily due to excessive moisture in the subgrade itself. High moisture in soils may be encountered during construction for reasons ranging from a naturally high water table to seasonal rainfall and even to changes in drainage conditions during construction. Regardless of the cause, in situ wet soils must be addressed before constructing an aggregate subbase or placement of the pavement on the subgrade. Placing subdrains before construction or letting the soil dry out through a natural process is not normally a practical approach because of time constraints. The two most commonly used methods are chemical modification of the soils, particularly in high moisture conditions, and reinforcement/separation.[1]

2.3 Chemical Stabilized Subgrade

A stabilized subgrade, such as soil cement or fly ash stabilization, will help to dry out excessive moisture soils and develop the uniformity needed to provide a construction platform and reduce delays during construction. When using chemical stabilizers, the percent of the stabilizer needs to be stipulated when the water content, soil type and freeze- thaw performance are considered. [1]

Cement Modified Soils (CMS) are soils and/or manufactured aggregates mixed with a small portion of Portland cement. CMS are normally used to improve material properties in the subgrade. Also, CMS helps prevent migration of subgrade soil and water into the aggregate subbase and provides some additional strength to the subgrade. CMS are principally used to modify fine grained soils such as silts and clays having high plasticity content. Some specifications require enough cement content to reduce the Plastic Index (PI) within a range of 12 to 15. Typically a CMS amount equivalent to 3 to 5 percent of the soil's dry weight is incorporated into the mix to achieve the desired strength. This combination allows for the reduction of plasticity, minimization of moisture related volumetric changes, an increase in bearing strength and an improvement in stability. This also provides a weather resistant construction platform.

A successful chemical stabilization can be achieved by incorporating approximately 10 to 15 percent fly ash (measured by dry weight of the native soil) into the existing subgrade. Fly ash can improve the subgrade CBR from 2 to 3 to as much as 25 to 30. It can also improve the unconfined compressive strength from 50 psi to 400 psi. Fly ash stabilized subgrades can also reduce the shrink-swell potential of clay soils and upgrade the condition of marginal soils. It is also a good drying agent for wet soils and provides a working platform during construction.

2.4 Reinforced Stabilized Subgrade

Reinforced subgrade treatment is typically used when subgrades have an unstable (soft) but not extremely high moisture content. This may be accomplished through the use of geosynthetics, such as geogrids and woven geotextiles.[1]

2.5 Unstabilized Aggregate Subbases

Unstabilized aggregate subbases are appropriate when a stable and uniform construction platform will benefit construction. (ACPA 2007) An aggregate subbase support layer can provide a working platform during construction as well as provide uniformity as a support layer. A granular support layer will also serve as a drainage system to help drain surface water away from the pavement as well as provide a cutoff layer from

subsurface moisture. If an aggregate subbase is used, a subdrain and outlet will be needed to complete the drainage system due to the poor drainage properties of Iowa soils.[1]

Premature deterioration of PCC pavement joints may be attributed to poorly draining joints, and subsurface drainage will help alleviate the problem (Taylor et al. 2016).

Commonly used Iowa DOT and SUDAS aggregate subbase materials include modified subbase, granular subbase and special backfill. The Iowa DOT and SUDAS specifications for modified subbase and special backfill allow for crushed stone, gravels, and recycled pavement materials meeting material IM210 or uniformly blended combinations of these materials with a maximum of 50 percent RAP (Reclaimed Asphalt Pavement).[1]

The target permeability of approximately 150 feet per day provides the adequate drainage necessary for a pavement foundation layer. Although materials as coarse and open-graded as ASTM No. 57 stone have been used as draining layers, they are not recommended for concrete pavements due to their lack of adequate stability for construction operations and their susceptibility to long-term settlement under heavy truck traffic. It is better to design the gradation of the unstabilized aggregate subbase to include more fines for the sake of stability than to omit the fines for the sake of drainage (ACPA 2007).[1] Therefore, modified subbase is the preferred subbase material for local roadways in Iowa.

In summary, the benefits of aggregate subbases and a drainage system include the following[1]:

- Increases performance and service life
- Provides a construction platform
- Maintains uniform support
- Provides drainage from water infiltration
- Helps reduce shrink and swell of high volume-change soils
- Controls excessive or differential frost heave
- Minimizes mud-pumping of fine-grained soils
- Prevents consolidation of subgrade
- Provides capillary cut off for highwater table

2.6 Subdrains

It is known that drainage is also important to the long term performance of concrete pavement. Drainage can be achieved with the use of an aggregate subbase with subdrain outlets. It is important to prepare the natural subgrade prior to the placement of the aggregate subbase to achieve the best performance.[1]

2.7 Pavement Foundation Recommendations

The performance of a pavement depends on the quality of its subgrade and subbase layers. These foundational layers play a key role in mitigating the detrimental effects of climate and the static and dynamic stresses generated by traffic. Therefore, building a stable subgrade and a properly drained subbase is vital for constructing an effective and long lasting pavement system.[2]

In order to determine what soils are present and understand their characteristics, it is essential to complete a geotechnical investigation. It is very important that the conditions of the subgrade are known prior to design in order to select various treatments if necessary, and specify various materials and preparation to provide uniformity and support for the pavement section.[1]

The subgrade, the layer of soil on which the subbase or pavement is built, provides support to the remainder of the pavement system. It is crucial for highway engineers to develop a subgrade with a California Bearing Ratio (CBR) value of at least 10. Research has shown that if a subgrade has a CBR value less than 10, the subbase material will deflect under traffic loadings in the same manner as the subgrade and cause pavement

deterioration.[2] Manipulation, and possibly stabilization, of the on-site soils will be required to achieve this level of support.

The subbase, the layer of aggregate material immediately below the pavement, provides drainage and stability to the pavement. Undrained water in the pavement supporting layers can freeze and expand, creating high internal pressures on the pavement structure. Moreover, flowing water can carry soil particles that clog drains and, in combination with traffic, pump fines from the subbase or subgrade. It is therefore crucial that highway engineers develop a stable, permeable subbase with longitudinal subdrains.[2] According to the MEPDG analysis for low volume roads, PCC pavement systems with aggregate subbase thickness above 5 inches, do not show a significant benefit over thicker sections. Two thickness options to consider include 1) 6" or more to accommodate migration of soil into the aggregate, or 2) 4"-5" with a separation layer of geotextile or stabilized subgrade.[1]

Longitudinal subdrains are essential with subbases to provide positive subsurface drainage. Rigid or corrugated plastic pipe meeting SUDAS specifications, minimum 6" in diameter, with perforations, and sufficient outlets to storm sewer structures or daylighted are recommended. In areas, where parallel storm sewer is present, it may be possible to utilize the storm sewer piping, along with porous rock backfill and open joints covered with engineering fabric, to serve as longitudinal subdrains. Also, if sized adequately, the subdrains could also serve as a footing drain collector line for adjacent private properties.

Recommendation:

- Conduct geotechnical investigation in all new developments to determine the suitability of soils to be used for pavement subgrade
- Improve subgrade support to provide a CBR of 10, unless the geotechnical investigation determines subgrade soils are adequate
- Construct drainable subbase, using material meeting requirements of SUDAS modified subbase, and install longitudinal subdrains, unless the geotechnical investigation determines the subgrade soil is free draining

3. PCC PAVEMENT

3.1 PCC Pavement Thickness

- It is typical and current practice to use a pre-determined minimum pavement thickness for local roads. These minimum thicknesses are typically 6 or 7 inches.[1]
- Some current thickness design methodologies were developed for facilities with more traffic and may not be applicable for local roads with lower traffic volumes.[1]
- Because local roads do not carry significant levels of heavy traffic and because some thickness design methodologies revert to predetermined minimums, modifying the design parameters for improved foundations with geotextiles and aggregate subbases will not decrease the thickness design significantly.[1]
- It is common for PCC pavements to be designed for 40 to 50 years of service based on a pavement thickness design. Some older pavements were designed for only 20 years. Although pavements are reaching the specified design life, the last 15 to 20 percent of its design life may be at a low level of service including poor rideability. On a PCI scale this may include the lower end of the fair category and possibly the poor category.[1]

The SUDAS pavement thickness tables, SUDAS Design Section 5F-1, provide recommended pavement thicknesses for various calculated ESALs, subgrade conditions, roadway types, and pavement types. The calculated thicknesses are based on the AASHTO *Guide for the Design of Pavement Structures,* which is used throughout the industry for pavement thickness design. Due to established policies in many jurisdictions across the state, the minimum pavement thickness for streets on natural subgrade was set at 7 inches for rigid pavement

and 8 inches for flexible pavement. For pavements with a granular subbase, the minimum thickness was set at 6 inches for both pavement types. As noted in the thickness tables, whenever a thickness was calculated that was less than the minimum, the minimum was used.[3]

3.2 PCC Pavement Jointing

Proper jointing is critical to the performance of PCC pavements. A well designed jointing system will

- Control cracking
- Divide the pavement into practical construction increments
- Accommodate slab movement
- Provide load transfer

Load Transfer[4]

For jointed concrete pavements to perform adequately, traffic loadings must be transferred effectively from one side of the joint to the other. This is called load transfer. Adequate load transfer results in lower deflections, which reduces faulting, spalling, and corner breaks, thereby increasing pavement life. Load transfer across joints for street pavements is developed either by aggregate inter-lock or dowel bars.

Aggregate interlock is the interlocking action between aggregate particles at the face of the joint. It relies on the shear interaction between aggregate particles at the irregular crack faces that form below the saw cut. This form of load transfer has been found to be most effective on roadways with short spacings and low truck volumes. Studies have found that aggregate interlock load transfer provides acceptable pavement performance when truck semi-trailer volumes are fewer than 80 to 120 trucks per day per lane. Laboratory and field studies have shown that aggregate interlock load transfer is improved with subgrade strength; size, angularity, and durability of the aggregate; joint face roughness; and slab thickness. Furthermore, these studies found that shorter slabs increase aggregate interlock effectiveness by reducing the movement and opening at each joint.

Dowel Bars[4]

Dowel bars are round, smooth, steel bars placed across transverse joints to transfer loads without restricting horizontal joint movements due to thermal and moisture contractions and expansions. They also keep slabs in horizontal and vertical alignment. Dowels reduce deflections and stresses due to traffic loads. This in turn prevents or reduces faulting, pumping, and corner breaking on roadways that carry a large number of trucks and/or have longer joint spacings. The use of dowel bars for minimizing faulting and pumping should be considered when the slabs are longer than 20 ft (6.0 m), when truck semi-trailer traffic exceeds 80 to 120 per day per lane, or when the accumulated design traffic exceeds four to five million AASHTO ESAL's per lane. Typically, this truck traffic level requires an 8-in.-thick slab or greater. Since most residential city streets do not experience these truck traffic levels and recommended joint spacings are not greater than 15 ft., dowels are generally not necessary.

Transverse Contraction Joints[3]

Contraction joints constructed transversely across pavement lanes are spaced to control natural initial and mature cracking of the concrete pavement. The joint interval is designed so that intermediate (random) transverse cracks do not form.

Joint spacing for jointed plain (unreinforced) concrete pavements (JPCP) depends on slab thickness, concrete aggregate, subgrade/subbase support, and environmental conditions. Transverse joint spacing should be limited to 24T (T is slab thickness) for pavements on subgrades and granular subbases or 21T if the pavement is placed on stabilized subbases, existing concrete, or asphalt. Transverse joint spacing is12 feet for pavements 6 inches thick, 15 feet for pavements 7 to 9 inches thick, and 20 feet for pavements over 9 inches thick. Longitudinal joint spacing for two lane streets, where lane delineation is not necessary, should be limited to a maximum of 10 feet. Generally, transverse joint spacing should not exceed 150% of the longitudinal joint spacing. SUDAS Table 5G-2.01 provides transverse and longitudinal joint spacings for standard two lane streets.

TABLE 2: TRANSVERSE JOINT REQUIREMENTS

Table 5G-2.01: Transverse Joint Requirements

Pavement Thickness	Transverse Joint Type	Transverse Joint Spacing
6”	C	12’
7”	C	15’
8”	CD[1]	15’
9”	CD[1]	15’
≥ 10”	CD[1]	20’

[1] No dowels within 24” of the back of curb

Source: SUDAS Specifications Figure 7010.901

Longitudinal Contraction Joints[3]

Longitudinal contraction joints release stresses from restrained warping and dynamic loading. A longitudinal joint is usually placed at the center of the pavement to allow the pavement to hinge due to lane loading and help delineate separation of opposing traffic. Controlling cracking and proper constructability are the primary functions of longitudinal contraction joints. Lane delineation is a secondary function.

An important consideration when establishing the distance between longitudinal joints for jointed plain concrete pavements is the prevention of random longitudinal cracking at the quarter point, which is the midpoint between the centerline and the back of the curb. Pavements less than 9 inches thick may not crack through a longitudinal joint placed close to the gutter, which could cause longitudinal cracks at the quarter point. Quarter point jointing will address this concern. Gutterline jointing, with a longitudinal joint closer than five feet from the edge of pavement, is discouraged unless widening is imminent in the future and the pavement thickness is at least 9 inches.

The following are the longitudinal jointing options provided by SUDAS Design Section 5G-2 for 26’ B-B and 31’ B-B standard width pavements:

FIGURE 2: 26 FOOT B-B PAVEMENT

Figure 5G-2.04: 26 Foot B-B Pavement

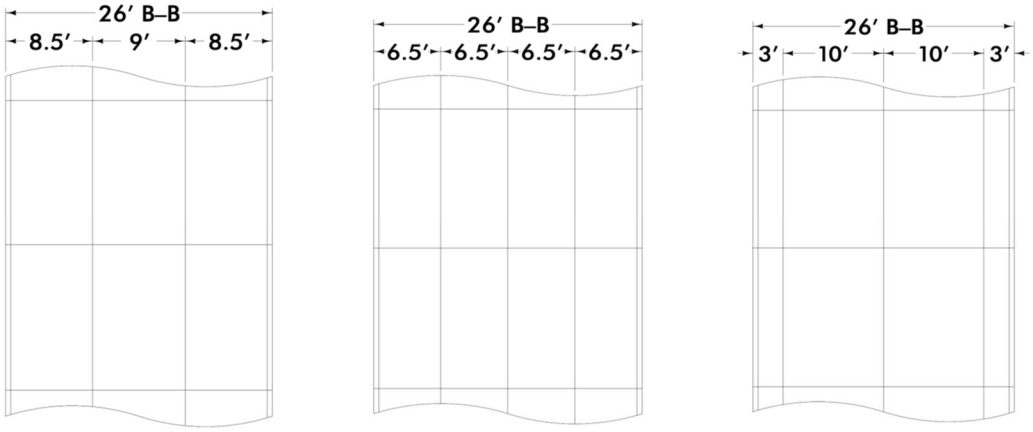
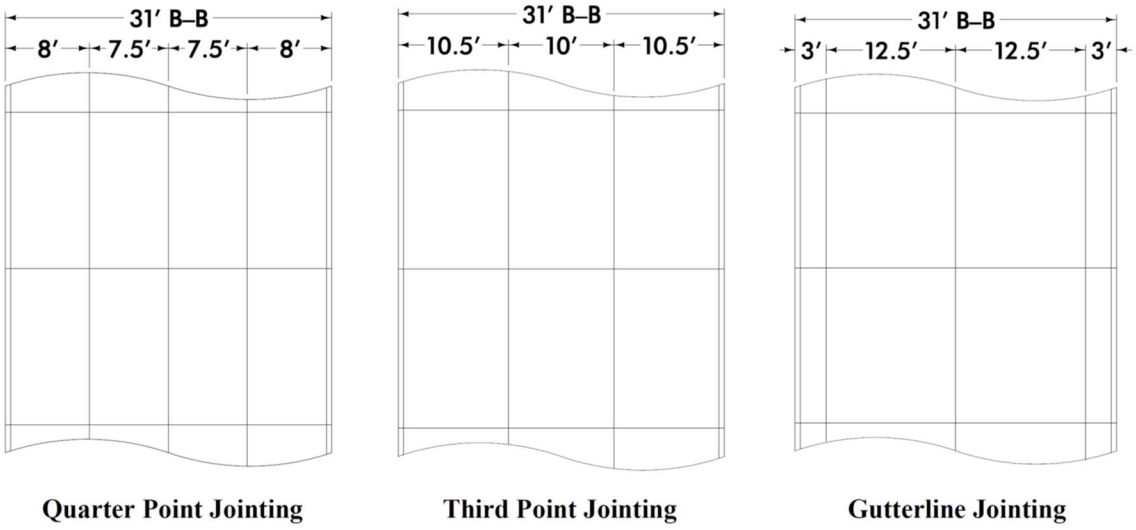


FIGURE 3: 31 FOOT B-B PAVEMENTS

Figure 5G-2.05: 31 Foot B-B Pavements



3.3 PCC Pavement Mix[5]

Municipalities in Iowa typically specify concrete mixes in the following way. If the city does not have joint deterioration concerns, then they often continue using their default Class C mix. SUDAS Section 7010 refers to Iowa DOT IM 529 and simply indicates that cities should use Iowa DOT Class C (or M) mix as described.

If the city has concerns with joint deterioration, then they should consider one of two high-durability mixes: C-SUD or CV-SUD. These mixes are identified in Iowa DOT IM 529. The C-SUD and CV-SUD mixes have the SUD designation for SUDAS. The "V" designation refers to the use of a Class V aggregate as specified in Iowa DOT Section 4117. While a conventional Class C concrete has a target w/c ratio of 0.43 and max of 0.488, the C-SUD mix has a target of 0.40 and max of 0.45. As a result, a C-SUD mix provides a more durable concrete pavement with lower permeability than conventional Class C mix due to its lower w/c ratio. With slip-form paving operations, however, the w/c ratio will typically be lower than the target w/c ratio during production with any mix design. The higher durability is desired to reduce joint deterioration due to the use of deicing chemicals. A joint saturated with de-icing salts limits the ability to allow the joint to dry out. To maintain the lower w/c ratio, a low- or mid-range water reducer may be necessary. For even greater durability, the use of ternary mixes should also be considered. Further references for mix proportioning in C-SUD and CV-SUD can be found in the Proportion Table 4 of Iowa DOT Materials IM 529. Note that these mixtures assume a basic w/c ratio of 0.40 and a maximum w/c ratio of 0.45.

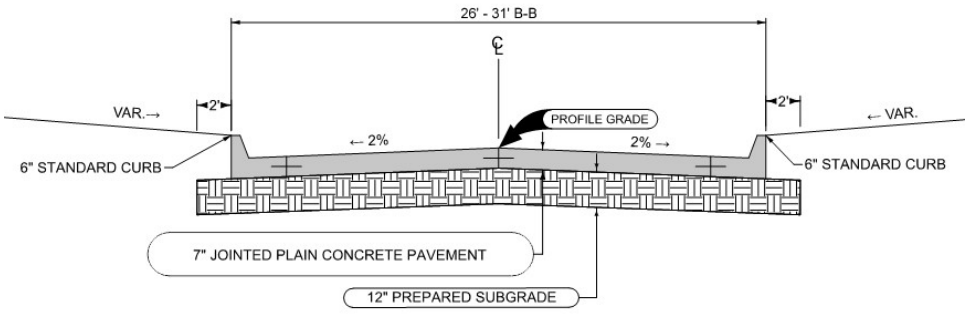
The above mixture is based on Type I or Type II cements (Sp. G. = 3.14). Mixes using blended cements (Type IP or IS) must be adjusted for cement gravities listed in IM 401. Use proportions listed above if not utilizing three aggregates. The above mixture is based on Type IP cements.

4. CURRENT BONDURANT DESIGN STANDARDS FOR PCC PAVEMENT SYSTEMS

The City of Bondurant does not have a formally adopted design standard for pavements. However, guidance provided to designers includes the following::

1. Jointed plain concrete pavement (JPCP), 7" thick
2. Standard Class C mix
3. Jointing is determined by designer
4. The required pavement foundation consists of prepared subgrade utilizing on-site soils

The typical cross-section of the current design standard is as follows:



5. RECOMMENDED BONDURANT DESIGN STANDARDS FOR PCC PAVEMENT SYSTEMS

5.1 Pavement Foundation Recommendations

Geotechnical Investigation: Conduct geotechnical investigations in all new developments to determine the suitability of soils to be used for pavement subgrade.

Subgrade: Improve subgrade support to provide a CBR of 10, unless the geotechnical investigation determines subgrade soils are adequate.

Subbase and Subdrain: Construct drainable subbases, using material meeting requirements of SUDAS modified subbase, and install longitudinal subdrains, unless the geotechnical investigation determines the subgrade soil is free draining. The depth of the subbase should be 6” on the prepared subgrade or 4” with an appropriate geotextile between the prepared subgrade and the subbase material.

5.2 Pavement Recommendations

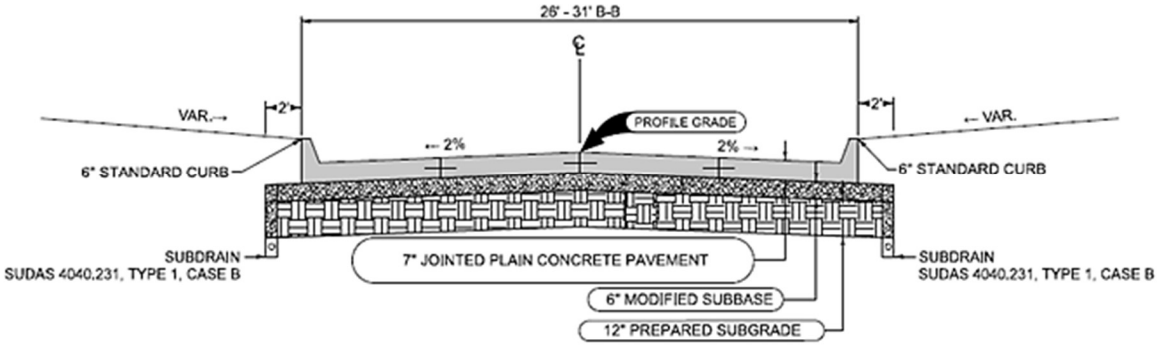
For the purposes of this discussion, the recommendations are for typical low-volume local streets, which have little truck traffic, not exceeding 85 trucks/day.

Pavement Thickness: The SUDAS pavement thickness design table for local low volume streets indicates a 6”-thick JPCP with an adequate foundation will perform satisfactorily and provide a 50-year life, according to the AASHTO design guide. However, experience across Iowa has shown 7” pavement will outperform the thinner pavement and is the standard thickness for most jurisdictions and is the recommended thickness of JPCP.

Pavement Jointing: Transverse joint spacing for 7”-thick JPCP paving should not exceed 15 feet, and ‘C’ joints, without dowels, is recommended because of the low truck volumes expected. Either quarter-point or third-point longitudinal jointing is recommended for 26’-wide pavements. Quarter-point jointing is recommended for 31’-wide pavements.

Pavement Mix: A Class C-SUD concrete mix is recommended. To help prevent early pavement joint deterioration, special attention should be given to maintaining adequate air content in the pavement after placement, in the range of 6% to 8%. Also, a water to cement ratio (w/c) of 0.40, with 0.45 maximum, is required. Supplementary cementitious materials (SCMs) are encouraged, and cement replacement rates of 20-25% Class F fly ash or 30-35% Class C fly ash or a combination of 20% slag and 20% Class C fly ash should be considered.

The typical cross-section of the recommended design standard is:



6. RECOMMENDED VS. CURRENT STANDARDS BENEFIT/COST COMPARISON

The following cost comparison and the benefits of the recommended higher standard of design will focus only on the costs associated with the pavement system, as previously defined, and will not include all other development infrastructure costs, such as site grading, storm sewer, water main, sanitary sewer, etc. In addition, no cost benefit has been determined for other benefits of long-lasting pavements, such as prolonged higher service level and less inconvenience to the adjoining properties and traveling public.

The additional costs from the recommendations are for the drainable subbase and the subdrain. Other recommendations, such as the geotechnical investigation, subgrade CBR of 10, and the Class C-SUD concrete mix are either required or recommended by SUDAS and should not add cost to the paving system.

6.1 Additional Costs Due to Recommended Pavement System Standards

To determine the relative costs of the pavement system using the current Bondurant pavement design standards and the recommended standards, two representative residential street segments were used.

- A two-block segment of 26'-wide street paving, 900'-long from center of intersection to center of intersection
- A one-block segment of 26'-wide street paving, 870'-long from center of intersection to center of intersection

As previously mentioned, only pavement system costs were compared, which included excavation (for the pavement only), subgrade preparation, subbase and subdrains (for the recommended standard), and pavement. The following tables determine the estimated cost per square yard of the pavement system, including pavement and pavement foundation.

TABLE 3: RECOMMENDED VS. CURRENT STANDARD COST – TWO-BLOCK 900' SEGMENT

Current Pavement Standards

Item No.	Item	Unit	Unit Price	Quantity	Total Cost
1	Excavation, Class 10	CY	$10.00	1136	$11,360.00
2	Subgrade Preparation	SY	$4.00	3408	$13,632.00
3	PCC Pavement, 7"	SY	$74.00	3009	$222,666.00
				Total	$247,658.00
				Cost/SY	**$82.31**

Recommended Pavement Standards

Item No.	Item	Unit	Unit Price	Quantity	Total Cost
1	Excavation, Class 10	CY	$10.00	1704	$17,040.00
2	Subgrade Preparation	SY	$4.00	3408	$13,632.00
3	Subbase, Modified, 6"	SY	$10.00	3408	$34,080.00
4	PCC Pavement, 7"	SY	$74.00	3009	$222,666.00
5	Subdrains, PVC, 6" *	LF	$20.00	1112	$22,240.00
6	Subdrain Cleanout	EA	$800.00	3	$2,400.00
7	Subdrain Outlets and Connections	EA	$500.00	3	$1,500.00
				Total	$313,558.00
				Cost/SY	**$104.21**

* Assumed 25% provided by storm sewer

TABLE 4: RECOMMENDED VS. CURRENT STANDARD COST – ONE-BLOCK 870' SEGMENT

Current Pavement Standards

Item No.	Item	Unit	Unit Price	Quantity	Total Cost
1	Excavation, Class 10	CY	$10.00	1035	$10,350.00
2	Subgrade Preparation	SY	$4.00	3104	$12,416.00
3	PCC Pavement, 7"	SY	$74.00	2718	$201,132.00
				Total	$223,898.00
				Cost/SY	**$82.38**

Recommended Pavement Standards

Item No.	Item	Unit	Unit Price	Quantity	Total Cost
1	Excavation, Class 10	CY	$10.00	1552	$15,520.00
2	Subgrade Preparation	SY	$4.00	3104	$12,416.00
3	Subbase, Modified, 6"	SY	$10.00	3104	$31,040.00
4	PCC Pavement, 7"	SY	$74.00	2718	$201,132.00
5	Subdrains, PVC, 6" *	LF	$20.00	1187	$23,740.00
6	Subdrain Cleanout	EA	$800.00	2	$1,600.00
7	Subdrain Outlets and Connections	EA	$500.00	4	$2,000.00
				Total	$287,448.00
				Cost/SY	**$105.76**

* Assumed 25% provided by storm sewer

6.2 Cost Comparison

Cost of Pavement Systems

The following is a comparison of the costs of the current design standards and the recommended design standards for two similar sections of pavement in a residential area, as previously described:

Example 1: Two-block 900' Segment
Additional pavement system cost due to recommended design standards
$104.21 - $82.31 = +$21.90/SY
Percent increase in pavement system cost due to recommended design standards
$21.90 / $82.31 = +26.6%

Example 2: One-block 870' Segment
Additional pavement system cost due to recommended design standards
$105.76 - $82.38 = +$23.38/SY
Percent increase in pavement cost due to recommended design standards
$23.38 / $82.38 = +28.4%

Averages of the two examples yield the following results due to the recommended design standards:
Additional pavement system cost +$22.64
Percent increase in pavement system cost +27.5%

Cost of Residential Lots

Another way to look at this additional cost is how it might affect the cost of each residential development lot. As an illustration, a normal residential lot is presumed to be 70'± wide and 140'± deep and corner lots are 90' wide. Using the two street pavement examples illustrated in Section 6.1, the following costs are calculated:

Example 1: Two-block 900' segment
As many as 20 lots or as few as 12 lots could front on the street segment, depending on orientation. Assuming an average of 16 lots, the additional cost per lot for the improved standards would be $65,900 / 16 lots = $4,118.75/lot.

Example 2: One-block 870' segment
As many as 22 lots or as few as 18 lots could front on the street segment, depending on orientation. Assuming an average of 20 lots, the additional cost per lot for the improved standards would be $63,550 / 20 lots = $3,177.50/lot.

An estimated per lot additional cost due to the recommended standards ranges from $3,177.50 to $4,118.75, or an average of $3,648.13.

6.3 Life Benefit of Recommended Standards

As indicated in previous discussions, improved pavement foundations and subsurface drainage will substantially increase the expected life of a pavement. It is also expected that improved jointing and concrete mixtures with provide additional longevity and improved service. Properly designed and maintained PCC pavements should be expected to provide at least 50 years of good service, as opposed to the expected life of 30 to 35 years for the current design standards. Therefore, a conservative estimate of the additional pavement life for the recommended pavement system standards is 15 years.

Additional pavement life due to recommended design standards
50 years – 35 years = +15 years
Percent increase in pavement life due to recommended design standards
15 years / 35 years = +42.8%

Benefit/Cost Ratio
Life Benefit Increase % / Additional Cost % = 42.8% / 27.5% = 1.56:1

6.4 Future Reconstruction

As would be anticipated with additional expected life, pavements constructed at the higher recommended design standards should require reconstruction less frequently. As an illustration, over a period of 100 years, it would be expected that pavement constructed with the recommended design standards would require only one pavement reconstruction to last that period of time. On the other hand, pavement constructed at the current design standard would require two reconstructions to serve for a similar length of time.

Based on present costs and the cost of removing and replacing only the pavement in the future, and not including other associated work, such as excavation, intakes, drives, design, and other associated costs, the following assumptions using an average of the two previous pavement examples of similar length are made:

- Number of residential lots: 18
- Total area of pavement: 2,864 SY
- Area of pavement per lot: 159 SY
- Initial cost of pavement with current design: $82.35/SY
- Initial cost of pavement with recommended design: $104.99/SY
- Cost to remove and replace pavement = $12 + $74 = $86/SY

the following conservative costs could be expected:

Costs for pavement constructed with <u>current</u> design standards to serve for 100 years

Initial pavement system cost:
2,864 SY @ $82.35 = $235,850
Initial pavement system cost per residential lot:
$235,850 / 18 lots = $13,103

Pavement reconstruction cost at 35 years:
2,864 SY @ $86.00 = $246,304
Pavement reconstruction cost per residential lot at 35 years:
$246,304 / 18 lots = $13,684

Pavement reconstruction cost at 70 years:
2,864 SY @ $86.00 = $246,304
Pavement reconstruction cost per residential lot at 70 years:
$246,304 / 18 lots = $13,684

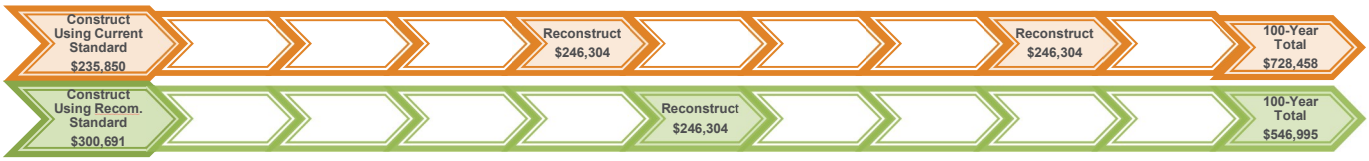
Total pavement costs with current design standards for 100 years:
Pavement system initial cost and pavement reconstruction costs $728,458
Pavement system initial cost and pavement reconstruction costs per lot $40,470

Cost for pavement constructed with <u>recommended</u> design standards to serve for 100 years

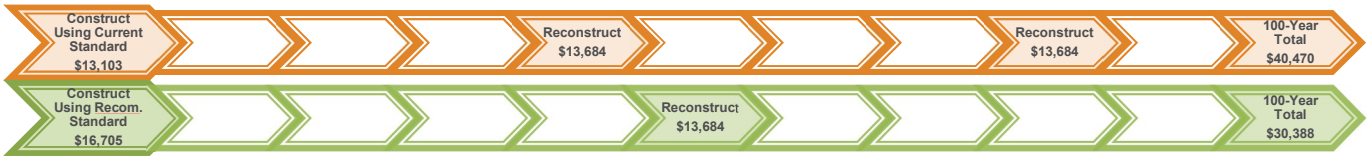
Initial pavement system cost:	
2,864 SY @ $104.99 =	$300,691
Initial pavement system cost per residential lot:	
$300,691 / 18 lots =	$16,705
Pavement reconstruction cost at 50 years:	
2,864 SY @ $86.00 =	$246,304
Pavement reconstruction cost per residential lot at 35 years:	
$246,304 / 18 lots =	$13,684
Total pavement costs with recommended design standards for 100 years:	
Pavement system initial cost and pavement reconstruction costs	$546,995
Pavement system initial cost and pavement reconstruction costs per lot	$30,388

For each residential lot, an initial investment of approximately $3,602 more for longer lasting pavement using the recommended design standards will reduce future reconstruction costs by an estimated $10,082 in present day dollars.

Projected Pavement Construction & Reconstruction Timeline -100-Year Cycle (Average Street Segment)



PROJECTED PAVEMENT CONSTRUCTION & RECONSTRUCTION TIMELINE -100-YEAR CYCLE (PER LOT)



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BUSINESS OF THE CITY COUNCIL
BONDURANT, IOWA
AGENDA STATEMENT

Item No. 8.c.
For Meeting of 6/17/2024
Resolution

TITLE: - Resolution authorizing City staff to release the Zoning, Subdivision, and Sign Code update Request for Proposals

CONTACT PERSON:
Maggie Murray, Planning & Community Development Director

BRIEF HISTORY & ANALYSIS: The attached resolution authorizes the release of the Zoning, Subdivision, and Sign Code update Request for Proposals (RFP). The draft RFP is also attached. It should be noted the Planning & Zoning Commission is also reviewing this draft RFP during their meeting on June 13th, and any requested updates noted during their meeting will be reflected in an updated RFP. Following approval of the attached resolution, City staff will officially release on June 18th. Consultant responses will be due back to the City on July 12th. It is anticipated the City Council will consider a resolution entering into a contract with the selected consultant team during their August 5th meeting.

The City will establish an RFP Review Committee to assist with reviewing responses received, conducting interviews, and making a recommendation for Council's consideration on which consultant team to select. It is anticipated this RFP Review Committee will include the following members: City Administrator, Planning & Community Development Director, City Planner, a member or members of the City Council, a few members of the Planning & Zoning Commission, a member of the Board of Adjustment, and potentially a member of the Parks & Recreation Board. It is anticipated the RFP Review Committee will conduct consultant interviews on July 19th. These interviews will likely be in person with also the option to attend (or listen back to) virtually.

Once a consultant team is selected, staff anticipates the Planning & Zoning Commission will act as the primary advisory committee to the consultant team to help ultimately guide this Zoning, Subdivision, and Sign Code update process. Member(s) of the City Council, Board of Adjustment, and Parks & Recreation Board may also serve on the project advisory committee.

Staff would like the complete Zoning, Subdivision, and Sign Code update adopted before the end of 2025.

A complete Zoning, Subdivision, and Sign Code update is consistent with Action Item 1C of the Building Bondurant Comprehensive Plan, which reads: Update the Zoning and Subdivision regulations to support the Future Land Use Plan and any goals, policies, or action items included in the plan.

FUNDING SOURCE: General Fund/TIF

STAFF RECOMMENDATION: Approve resolution on a roll call vote.

APPROVED FOR SUBMITTAL:

ATTACHMENTS:
1. RESOLUTION NO. 240617-136
2. DRAFT Zoning, Subdivision, Sign Code Update RFP

CITY OF BONDURANT
RESOLUTION NO. 240617-136

RESOLUTION AUTHORIZING CITY STAFF TO RELEASE THE ZONING, SUBDIVISION, AND SIGN CODE UPDATE REQUEST FOR PROPOSALS (RFP)

WHEREAS Action Item 1C of the Building Bondurant Comprehensive Plan reads: update the zoning and subdivision regulations to support the Future Land Use Plan and any goals, policies, or action items included in the plan; AND

WHERAS the City Council of the City of Bondurant finds it necessary to hire a consultant to draft the complete Zoning, Subdivision, and Sign Code update; AND

WHEREAS the City of Bondurant has drafted a Zoning, Subdivision, and Sign Code Update Request for Proposals (RFP) that is ready for release; AND

WHEREAS the Zoning, Subdivision, and Sign Coe RFP will be released on June 18, 2024, and consultant responses are due by July 12, 2024, at 4:00 p.m.

NOW, THEREFORE, BE IT RESOLVED, that the Bondurant City Council authorizes city staff to release the Zoning, Subdivision, and Sign Code Update RFP.

Passed and approved by the City Council of the City of Bondurant, Iowa, this 17th day of June 2024.

By: _____
Doug Elrod, Mayor

ATTEST: I, Shelby Hagan, City Clerk of Bondurant, hereby certify that at a meeting of the City Council held on the above date, among other proceedings the above was adopted.

IN WITNESS WHEREOF, I have hereunto set my hand the day and year above written.

_____
Shelby Hagan, City Clerk

Name	Yay	Nay	Abstain	Absent
Cox				
Driscoll				
McKenzie				
Peffer				
Sillanpaa				

Request for Proposals

Zoning, Subdivision, and Sign Code Update for the City of Bondurant, Iowa

Issue Date: June 18, 2024

Due Date: July 12, 2024 by 4:30 p.m.

Bondurant

Life Connecting

Introduction

The City of Bondurant, Iowa requests proposals from qualified professional planning firms to provide technical assistance in completely updating the City's planning and land use regulations, with an emphasis on user-friendliness, consistency, and compatibility with state statutes and relevant case law. The City's planning and land use regulations are currently comprised of the following chapters of the City Code:

- Chapter 175 – General Provisions
- Chapter 176 – Nonconforming Lots, Uses, and Structures
- Chapter 177 – General Regulations
- Chapter 178 – District Regulations
- Chapter 179 – Additional Provisions
- Chapter 180 – Subdivision Regulations
- Chapter 181 – Sign Code
- Chapter 182 – Open Space and Landscaping Requirements

Consultant teams wishing to respond to this RFP must submit a proposal to Maggie Murray, Planning & Community Development Director, at planning@cityofbondurant.com by **no later than 4:30 p.m. on July 12, 2024.**

Please refer all questions regarding this RFP to Maggie Murray, Planning & Community Development Director, via email only at planning@cityofbondurant.com. Answers to questions received will be uploaded to the City's website.

Background and Context

Bondurant, Iowa, an Iowa Great Place, is a rapidly-growing community of approximately 10,000 people in northeast Polk County. Between 2010 and 2020, the community saw a 91% increase in population. Over 3,500 jobs have been created in Bondurant since 2019. To ensure future growth and development is intentional and reflects the community's needs, Bondurant has recently undergone a series of long-range planning processes each having opportunities for public input. These adopted long-range planning documents include: the Building Bondurant Comprehensive Plan, the Central District Stormwater Improvements Master Plan, the Civic Campus Master Plan, the Grain District Downtown Redevelopment Plan, the Art, Culture, & Wayfinding Master Plan, the Major Streets Master Plan, and others.

The 2022-adopted Building Bondurant Comprehensive Plan includes the following vision statement: Bondurant is a welcoming and forward-thinking community that embraces its rich history and preserves its hometown feel while growing sustainably. The Comprehensive Plan identifies the need for the community to update the zoning, subdivision, and sign regulations to better support the Future Land Use Plan and any goals, policies, or action items included in the Comprehensive Plan.

DRAFT

The City of Bondurant's Planning & Community Development Department was established in 2019. This will be the first major Zoning, Subdivision, and Sign Code rewrite since having an established Planning & Community Development Department. The Planning & Community Development Department is excited for the opportunity to take ownership of the codes that will be rewritten so they are consistently enforced for the following decades.

The City Council, Planning & Zoning Commission, Board of Adjustment, and City staff have expressed concerns with the current Zoning, Subdivision, and Sign Code regulations. The City wishes to modernize the land development regulations to address the following weaknesses of the existing codes:

- Unclear, contradicting, confusing, and inconsistent language and format.
- Outdated standards and regulations.
- Lack of graphics and illustrations.
- Lack of sufficient and clear definitions.
- Lack of cross-references within sections, section headings, and comprehensive index.
- Lack of permitted use table capable of being applied to all districts.

Scope of Services Required of the Consultant

The selected consultant team will be tasked with the following scope of work associated with the complete Zoning, Subdivision, and Sign Code update:

- Gain an understanding of Bondurant's planned intentional growth through a review of its long-range planning documents and realize this growth pattern is unique to Bondurant.
- Work with a staff review team and an advisory committee throughout the entirety of this code update process.
- Review and assess the existing regulations of Chapters 175-182, and other relevant City Ordinances initially with staff, but also through various public meetings involving the City Council, Planning & Zoning Commission, and/or Board of Adjustment to gain an understanding of existing weaknesses and opportunities for improvements.
- Integrate feedback received when drafting a complete code update related to the City's Zoning, Subdivision, and Sign regulations.
- Consider the City's Future Land Use Plan, including use designations and the Zoning Compatibility Matrix, when drafting the updated regulations to ensure consistency with the Building Bondurant Comprehensive Plan. Staff does not anticipate the need for a complete overhaul of the City's existing Zoning Map.
- Draft recommendations regarding the City's existing Arterial Corridor Overlay, including how this Overlay can/should effectively function with the code update.
- Incorporate building design/material ordinance language, including language that is specific to the downtown Bondurant.

DRAFT

- Act as a facilitator when engaging residents, the business community, Council members, board/commission members, and City staff in the formulation of acceptable Zoning, Subdivision, and Sign regulations.
- Evaluate different approaches and determine the most effective type of ordinance product for the City, including the exploration of some form-based and/or hybrid code elements.
- Present the draft ordinance and final ordinances at meetings and public hearings, which may include the Planning & Zoning Commission, City Council, and/or Board of Adjustment.
- Ensure compliance with State Statutes and Federal Laws.
- Recommend the best approach for managing and maintaining codification of the new Zoning, Subdivision, and Sign Code.
- **Potential Alternate Scope Item 1:** The consultant team will develop a Planned Unit Development Scoring Matrix to be implemented before or alongside the Zoning, Subdivision, and Sign Code update. This matrix will help establish an objective review standard for all future PUD requests. Staff anticipates a concise document and has outlined the matrix components, seeking the consultant team's input for further refinement through research and feedback.
- **Potential Alternate Scope Item 2:** The consultant team will create a Downtown Design Guidelines Document to be approved before or alongside the Zoning, Subdivision, and Sign Code update. This additional scope item aims to guarantee that downtown Bondurant's development aligns with the suggestions outlined in Chapter 7 of the Building Bondurant Comprehensive Plan. Given the relatively small size of Bondurant's downtown area compared to other communities, staff anticipates a concise yet informative document that offers clear guidance for integration into the code update process.

Submission Content

The following information must be included as part of a firm's response to this request:

- **Letter of Interest:** Cover letter indicating interest in the project and identifying the firm's ability to provide services needed.
- **Overview of Firm:** A brief description of the firm including the number of years the firm has been in existence, range of professional services, office locations, and staff size.
- **Key Personnel:** Identify the key personnel who will be assigned to the project. For these individuals, include their respective titles, experience, and periods of service with the firm, including resumes if desired.
- **Work Program:** Describe the general project approach and process to be employed. Work program to include project phases, a public participation plan, a schedule, including timeline of major milestones, deliverables, and completion.

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- **Relevant Work Experience and References:** Brief documentation of the firm's prior work relevant to this RFP, including three client references.
- **Cost Estimate:** Estimate for completing the entire project, including a lump sum dollar figure for all consultant services, fees, and charges, as well as document and graphics preparation, reproduction, and delivery. The basis of the total budget shall be on the required tasks identified in your proposal. The contract is expected to be constructed in a single total fee arrangement for all items.

Selection Process & Evaluation Criteria

Proposals received will be evaluated by the RFP Review Committee. Based on the materials submitted, the City may invite any or all firms for proposal interviews.

All proposals received will be evaluated based on the following criteria:

- Expertise and track record in similar projects, highlighting the qualifications of key staff members directly involved in this project. Of particular interest is the experience of key staff members in having not only substantial Zoning, Subdivision, and Sign regulation writing experience, but also in having Zoning, Subdivision, and Sign enforcement experience.
- Firm's general approach to the project. Although the City has identified the general scope of services required, the consultant is given leeway toward the approach to the methodology to provide the proposed services.
- Proposed timeline to complete the work and demonstrated ability to meet proposed schedule.
- Past record and performance on similar projects, including quality of work, ability to meet deadlines, and cost control.
- Compatibility with the City's financial obligations.

Timeline

- **RFP Release** – June 18, 2024
- **Deadline for Submittal of RFP** – July 12, 2024
- **Consultant Interviews** – Week of July 15, 2024
- **Contract Presented to Council** – August 5, 2024
- **Expected Zoning, Subdivision, and Sign Ordinance Adoption** – End of 2025

Final Work Product

The Zoning, Subdivision, and Sign Ordinance update is to be presented in a format and language that is user friendly and accessible to the public. The extensive use of graphics and other devices that will enhance the readability and ease of use of the Ordinance is a must.

DRAFT

Immediately following adoption of the Zoning, Subdivision, and Sign Code, the City shall receive ten (10) hard copies and a digital copy that is internet ready for posting on the City's website.

In addition, all sections of the ordinance, including any graphic files, are to be provided in the appropriate digital format. The City of Bondurant shall retain ownership of all data generated.

RFP Terms & Conditions

1. The City of Bondurant reserves the right to reject any or all proposals.
2. Please refer all questions regarding this RFP to Maggie Murray, Planning & Community Development Director, via email only at planning@cityofbondurant.com. Answers to questions received will be uploaded to the City's website.
3. Although cost is an important consideration, the City of Bondurant shall not be obligated to accept the lowest cost proposal, but will base its decision on the criteria as noted.
4. All data, documents, and other information provided to the City of Bondurant by a consultant because of the RFP shall become property of the City of Bondurant.
5. Expenses incurred in the preparation and submittal of proposals are solely the responsibility of the respondent and not the City of Bondurant. No costs chargeable for wok under the proposed contract may be incurred before receipt of either a fully executed contract with the City or specific written authorization from the City of Bondurant.

Submittal Instructions

Consultant teams wishing to respond to this RFP must submit a proposal to Maggie Murray, Planning & Community Development Director, at planning@cityofbondurant.com by **no later than 4:30 p.m. on July 12, 2024.**

DRAFT

BUSINESS OF THE CITY COUNCIL
BONDURANT, IOWA
AGENDA STATEMENT

Item No. 8.d.
For Meeting of 6/17/2024
Resolution

TITLE: - Resolution awarding the contract for the Parkside Trail Connection Project storage tank to RW Excavating Solutions LC. in the amount of $467,721.18

CONTACT PERSON:
John Horton, Public Works Director

BRIEF HISTORY & ANALYSIS: This contract is for the Parkside Trail Connection Project that will connect the Parkside, Featherstone, and Petocka Run developments via trail connection to Lake Petocka trail and to the rest of the CVT regional trail system. Attached is a table showing the bid results from the public bid opening on June 12th, 2024. The engineer's estimate of cost for the project was $500,365.

Based on reviewing the bids by Shive-Hattery and City Staff, RW Excavating Solutions LC. is the lowest responsive bidder for the project at $467,721.18

FUNDING SOURCE: LWCF Grant/REAP Grant/Budgeted CIP

STAFF RECOMMENDATION: Staff would recommend approval of the resolution.

APPROVED FOR SUBMITTAL:

ATTACHMENTS:
1. RESOLUTION NO. 240617-137
2. ParkSide_BidResultsLtr
3. ParkSide_Bid Summary

CITY OF BONDURANT
RESOLUTION NO. 240617-137

RESOLUTION AWARDING THE CONTRACT AND BOND FOR THE PARKSIDE TRAIL CONNECTION PROJECT TO RW EXCAVATING SOLUTIONS LC. IN THE AMOUNT OF $467,721.18

WHEREAS, on May 20th, 2024, the City of Bondurant approved the order of construction for the Parkside Trail Connection Project; AND

WHEREAS, on June 12th, 2024, the City of Bondurant received the bids for the Projects; AND

WHEREAS, the location of the work to and the kinds and sizes of materials proposed to be used as follows:

The Park Side Trail Connection Project entails the development of a 10' PCC trail segment spanning approximately 1,100 linear feet. This trail will serve as a vital link between the Top Farms and Park Side neighborhoods situated north of Santiago Creek and key destinations such as the Bondurant Recreational Sports Complex (BRSC), Lake Petocka, and the Chichaqua Valley Trail (CVT) network. At the Santiago Creek crossing, the project will feature a twin 10'x8' box culvert along with in-stream improvements. Sidewalk connections will provide access to the Petocka Run Development and BRSC Little League Fields. Enhancements along the trail corridor and around Park Side Pond will include planting of trees, additional landscaping, and installation of two limestone fishing jetties.

WHEREAS, The City Council approves the contract and bond for the Parkside Trail Connection; AND

WHEREAS, payments are to be made to RW Excavating Solutions LC. in accordance with and subject to the provisions embodied in the documents made a part of the contract,

NOW, THEREFORE, BE IT RESOLVED, by the City Council of the City of Bondurant, Iowa, that Parkside Trail Connection Project contract is awarded to RW Excavating Solutions LC. and the contract and bond are hereby approved, pending review by legal counsel.

Passed this 17th day of June 2024,

By: _____
Doug Elrod, Mayor

ATTEST: I, Shelby Hagan, City Clerk of Bondurant, hereby certify that at a meeting of the City Council held on the above date, among other proceedings the above was adopted.

IN WITNESS WHEREOF, I have hereunto set my hand the day and year above written.

_____

Shelby Hagan, City Clerk

Council Action	Ayes	Nays	Abstain	Absent
Cox				
Peffer				
Driscoll				
McKenzie				
Sillanpaa				

SHIVEHATTERY
ARCHITECTURE + ENGINEERING

June 13, 2024

John Horton, Public Works Director
City of Bondurant
200 Second St NE
Bondurant, IA 50035

RE: Bid Review Letter and Tabulation
Park Side Trail Extension

Dear Mr. Horton,

Twelve (12) bids were received on June 12, 2024, at 2:00pm for the above referenced project. We propose that the City of Bondurant consider the bids and award the contract to RW Excavating Solutions, LC on the basis of their lowest responsive, acceptable base bid of $467,721.18 or their base. This award is subject to submittal of acceptable bonds and insurance. We are enclosing a copy of the bid tabulation for your use.

We look forward to continuing working with you on this project. Please call our office if you have any questions or comments regarding the above project.

Sincerely,

SHIVE-HATTERY, INC.

David R. Fliehler, P.E.
Civil Engineer

Enclosures: Bid Tabulation

SHIVEHATTERY
ARCHITECTURE + ENGINEERING

Client: CITY OF BONDURANT
Project Name: PARK SIDE TRAIL CONNECTION

Bid Date: 2024-06-12
S-H Project No.: 2142301580

I hereby certify that this 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.

06/13/2024

Name: David R. Flieher, PE
Registration #: 23509

***ITEMS SHOWN IN RED INDICATE QUANTITIES WITH ERRORS IN BID, EXTENDED COSTS HAVE BEEN CORRECTED FOR BID SUMMARY**

Item No.	Description	Quantity	Units	ENGINEER'S ESTIMATE		RW Excavating Solutions, LC		Peterson Contractors, Inc		Nagel Construction, LLC		Wenthold Excavating, LLC		Concrete Connection, LLC		Con-Struct, Inc		Caliber Concrete, LLC		Howrey Construction, Inc		TK Concrete, Inc		Concrete Professionals		Mainline Construction		Riley Construction Co Inc	
	Signature					x		x		x		x		x		x		x		x		x		x		x		x	
	Bidder Status Form					x		x		x		x		x		x		x		x		x		x		x		x	
	Authorization to Transact					x		x		x		x		x		x		x		x		x		x		-		x	
	TSB Prebid Form					x		x		x		x		x		x		x		x		x		x		x		x	
	10% Bid Security					x		x		-		x		-		x		x		x		-		-		x		x	
				Unit Price	Amount	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
1	CLEARING AND GRUBBING	1	LS	$ 8,000.00	$ 8,000.00	$ 5,000.00	$ 5,000.00	$ 6,000.00	$ 6,000.00	$ 2,500.00	$ 2,500.00	$ 2,500.00	$ 2,500.00	$ 7,300.00	$ 7,300.00	$ 5,000.00	$ 5,000.00	$ 5,000.00	$ 5,000.00	$ 6,500.00	$ 6,500.00	$ 10,000.00	$ 10,000.00	$ 7,150.00	$ 7,150.00	$ 9,000.00	$ 9,000.00	$ 7,000.00	$ 7,000.00
2	TOPSOIL, STRIP, SALVAGE AND SPREAD	1595.0	CY	$ 10.00	$ 15,950.00	$ 4.50	$ 7,177.50	$ 7.00	$ 11,165.00	$ 9.00	$ 14,355.00	$ 12.00	$ 19,140.00	$ 10.00	$ 15,950.00	$ 12.00	$ 19,140.00	$ 8.00	$ 12,760.00	$ 8.50	$ 13,557.50	$ 10.00	$ 15,950.00	$ 13.20	$ 21,054.00	$ 31.00	$ 49,445.00	$ 25.00	$ 39,875.00
3	EXCAVATION, CLASS 10	775	CY	$ 7.00	$ 5,425.00	$ 12.00	$ 9,300.00	$ 8.25	$ 6,393.75	$ 7.00	$ 5,425.00	$ 10.00	$ 7,750.00	$ 14.00	$ 10,850.00	$ 20.00	$ 15,500.00	$ 8.00	$ 6,200.00	$ 28.00	$ 21,700.00	$ 23.00	$ 17,825.00	$ 16.45	$ 12,748.75	$ 20.00	$ 15,500.00	$ 45.00	$ 34,875.00
4	MODIFIED SUBBASE, 6 IN.	1830.0	SY	$ 12.00	$ 21,960.00	$ 11.00	$ 20,130.00	$ 13.75	$ 25,162.50	$ 32.00	$ 58,560.00	$ 13.50	$ 24,705.00	$ 8.00	$ 14,640.00	$ 12.00	$ 21,960.00	$ 12.00	$ 21,960.00	$ 15.25	$ 27,907.50	$ 14.00	$ 25,620.00	$ 10.35	$ 18,940.50	$ 22.00	$ 40,260.00	$ 18.50	$ 33,855.00
5	REMOVALS, PER PLAN	1.0	LS	$ 10,000.00	$ 10,000.00	$ 8,000.00	$ 8,000.00	$ 9,750.00	$ 9,750.00	$ 4,000.00	$ 4,000.00	$ 5,000.00	$ 5,000.00	$ 7,500.00	$ 7,500.00	$ 6,000.00	$ 6,000.00	$ 15,000.00	$ 15,000.00	$ 10,000.00	$ 10,000.00	$ 7,500.00	$ 7,500.00	$ 13,650.00	$ 13,650.00	$ 8,100.00	$ 8,100.00	$ 13,500.00	$ 13,500.00
6	STORM SEWER, TRENCHED, DUAL WALL POLYPROPYLENE, 12 IN.	38.0	LF	$ 60.00	$ 2,280.00	$ 40.00	$ 1,520.00	$ 55.00	$ 2,090.00	$ 100.00	$ 3,800.00	$ 90.00	$ 3,420.00	$ 125.00	$ 4,750.00	$ 75.00	$ 2,850.00	$ 145.00	$ 5,510.00	$ 100.00	$ 3,800.00	$ 125.00	$ 4,750.00	$ 68.10	$ 2,587.80	$ 96.00	$ 3,648.00	$ 100.00	$ 3,800.00
7	MANHOLE ADJUSTMENT, MINOR	1.0	EA	$ 4,000.00	$ 4,000.00	$ 1,500.00	$ 1,500.00	$ 750.00	$ 750.00	$ 500.00	$ 500.00	$ 850.00	$ 850.00	$ 750.00	$ 750.00	$ 2,000.00	$ 2,000.00	$ 3,638.00	$ 3,638.00	$ 2,000.00	$ 2,000.00	$ 2,750.00	$ 2,750.00	$ 1,150.00	$ 1,150.00	$ 1,500.00	$ 1,500.00	$ 2,250.00	$ 2,250.00
8	REINFORCED CONCRETE BOX CULVERT, TWIN 10X8	24.0	LF	$ 2,400.00	$ 57,600.00	$ 1,936.28	$ 46,470.72	$ 2,575.00	$ 61,800.00	$ 2,025.00	$ 48,600.00	$ 3,950.00	$ 94,800.00	$ 5,500.00	$ 132,000.00	$ 3,400.00	$ 81,600.00	$ 3,638.00	$ 87,312.00	$ 2,900.00	$ 69,600.00	$ 2,500.00	$ 60,000.00	$ 3,570.00	$ 85,680.00	$ 5,600.00	$ 134,400.00	$ 4,500.00	$ 108,000.00
9	REINFORCED CONCRETE BOX CULVERT STRAIGHT END SECTION, TWIN 10X8	2.0	EA	$ 50,000.00	$ 100,000.00	$ 55,893.73	$ 111,787.46	$ 48,500.00	$ 97,000.00	$ 42,200.00	$ 84,400.00	$ 38,500.00	$ 77,000.00	$ 29,700.00	$ 59,400.00	$ 39,000.00	$ 78,000.00	$ 48,685.00	$ 97,370.00	$ 45,000.00	$ 90,000.00	$ 51,500.00	$ 103,000.00	$ 47,775.00	$ 95,550.00	$ 25,000.00	$ 50,000.00	$ 47,000.00	$ 94,000.00
10	GRANULAR MATERIAL FOR WORKING BLANKET	111	TON	$ 50.00	$ 5,550.00	$ 45.00	$ 4,995.00	$ 55.00	$ 6,105.00	$ 55.00	$ 6,105.00	$ 58.00	$ 6,438.00	$ 55.00	$ 6,105.00	$ 75.00	$ 8,325.00	$ 138.00	$ 15,318.00	$ 90.00	$ 9,990.00	$ 75.00	$ 8,325.00	$ 135.45	$ 15,034.95	$ 50.00	$ 5,550.00	$ 130.00	$ 14,430.00
11	SPECIAL SUBGRADE PREPARATION FOR SHARED USE PATH	1950.0	SY	$ 5.00	$ 9,750.00	$ 2.50	$ 4,875.00	$ 2.50	$ 4,875.00	$ 4.50	$ 8,775.00	$ 2.25	$ 4,387.50	$ 3.00	$ 5,850.00	$ 4.00	$ 7,800.00	$ 2.30	$ 4,485.00	$ 4.50	$ 8,775.00	$ 2.60	$ 5,070.00	$ 2.75	$ 5,362.50	$ 5.75	$ 11,212.50	$ 6.00	$ 11,700.00
12	SHARED USE PATH, PCC, 6 IN.	1100.0	SY	$ 65.00	$ 71,500.00	$ 45.00	$ 49,500.00	$ 47.50	$ 52,250.00	$ 50.00	$ 55,000.00	$ 55.25	$ 60,775.00	$ 44.25	$ 48,675.00	$ 55.00	$ 60,500.00	$ 49.00	$ 53,900.00	$ 50.00	$ 55,000.00	$ 52.50	$ 57,750.00	$ 55.20	$ 60,720.00	$ 44.00	$ 48,400.00	$ 46.00	$ 50,600.00
13	SIDEWALK, PCC, 5 IN.	210.0	SY	$ 65.00	$ 13,650.00	$ 60.00	$ 12,600.00	$ 55.00	$ 11,550.00	$ 50.00	$ 10,500.00	$ 51.50	$ 10,815.00	$ 49.50	$ 10,395.00	$ 65.00	$ 13,650.00	$ 93.11	$ 19,553.10	$ 70.00	$ 14,700.00	$ 62.50	$ 13,125.00	$ 74.20	$ 15,582.00	$ 55.00	$ 11,550.00	$ 56.50	$ 11,865.00
14	DRIVEWAY, GRANULAR, 6 IN.	4.0	TON	$ 50.00	$ 200.00	$ 45.00	$ 180.00	$ 55.00	$ 220.00	$ 50.00	$ 200.00	$ 75.00	$ 300.00	$ 55.00	$ 220.00	$ 75.00	$ 300.00	$ 55.00	$ 220.00	$ 135.00	$ 540.00	$ 75.00	$ 300.00	$ 105.00	$ 420.00	$ 41.00	$ 164.00	$ 125.00	$ 500.00
15	PAVEMENT REMOVAL	20.0	SY	$ 20.00	$ 400.00	$ 20.00	$ 400.00	$ 30.00	$ 600.00	$ 8.00	$ 160.00	$ 15.00	$ 300.00	$ 27.00	$ 540.00	$ 25.00	$ 500.00	$ 9.00	$ 180.00	$ 25.00	$ 500.00	$ 25.00	$ 500.00	$ 21.00	$ 420.00	$ 14.00	$ 280.00	$ 25.00	$ 500.00
16	3/8" MINUS CRUSHED LIMESTONE, 5 IN.	14.0	TON	$ 85.00	$ 1,190.00	$ 60.00	$ 840.00	$ 250.00	$ 3,500.00	$ 50.00	$ 700.00	$ 100.00	$ 1,400.00	$ 75.00	$ 1,050.00	$ 100.00	$ 1,400.00	$ 200.00	$ 2,800.00	$ 145.00	$ 2,030.00	$ 100.00	$ 1,400.00	$ 79.25	$ 1,109.50	$ 175.00	$ 2,450.00	$ 315.00	$ 4,410.00
17	TEMPORARY TRAFFIC CONTROL	1	LS	$ 2,500.00	$ 2,500.00	$ 4,900.00	$ 4,900.00	$ 5,000.00	$ 5,000.00	$ 5,000.00	$ 5,000.00	$ 3,675.00	$ 3,675.00	$ 1,500.00	$ 1,500.00	$ 3,500.00	$ 3,500.00	$ 500.00	$ 500.00	$ 5,000.00	$ 5,000.00	$ 4,500.00	$ 4,500.00	$ 2,625.00	$ 2,625.00	$ 4,900.00	$ 4,900.00	$ 3,750.00	$ 3,750.00
18	HYDRAULIC SEEDING, FERTILIZING SUDAS TYPE 1	2.2	AC	$ 2,000.00	$ 4,400.00	$ 3,500.00	$ 7,700.00	$ 2,400.00	$ 5,280.00	$ 2,500.00	$ 5,500.00	$ 2,500.00	$ 5,500.00	$ 2,700.00	$ 5,940.00	$ 2,400.00	$ 5,280.00	$ 3,000.00	$ 6,600.00	$ 2,500.00	$ 5,500.00	$ 3,000.00	$ 6,600.00	$ 2,520.00	$ 5,544.00	$ 2,400.00	$ 5,280.00	$ 2,500.00	$ 5,500.00
19	HYDRAULIC SEEDING, FERTILIZING SUDAS TYPE 3	0.3	AC	$ 1,800.00	$ 540.00	$ 2,000.00	$ 600.00	$ 2,100.00	$ 630.00	$ 2,200.00	$ 660.00	$ 2,200.00	$ 660.00	$ 2,300.00	$ 690.00	$ 2,100.00	$ 630.00	$ 3,200.00	$ 960.00	$ 2,200.00	$ 660.00	$ 3,000.00	$ 900.00	$ 2,205.00	$ 661.50	$ 2,100.00	$ 630.00	$ 2,200.00	$ 660.00
20	HYDRAULIC SEEDING, FERTILIZING SUDAS TYPE 5	3.1	AC	$ 1,000.00	$ 3,100.00	$ 2,000.00	$ 6,200.00	$ 1,900.00	$ 5,890.00	$ 2,000.00	$ 6,200.00	$ 2,000.00	$ 6,200.00	$ 2,100.00	$ 6,510.00	$ 1,900.00	$ 5,890.00	$ 1,250.00	$ 3,875.00	$ 2,000.00	$ 6,200.00	$ 2,350.00	$ 7,285.00	$ 1,995.00	$ 6,184.50	$ 1,900.00	$ 5,890.00	$ 2,000.00	$ 6,200.00
21	HYDRAULIC SEEDING, FERTILIZING CUSTOM POLLINATOR SEED MIX	0.2	AC	$ 3,000.00	$ 600.00	$ 10,000.00	$ 2,000.00	$ 2,400.00	$ 480.00	$ 2,500.00	$ 500.00	$ 2,500.00	$ 500.00	$ 2,700.00	$ 540.00	$ 2,400.00	$ 480.00	$ 3,200.00	$ 640.00	$ 2,500.00	$ 500.00	$ 3,000.00	$ 600.00	$ 2,520.00	$ 504.00	$ 2,400.00	$ 480.00	$ 2,500.00	$ 500.00
22	HYDRAULIC SEEDING, FERTILIZING SUDAS WETLAND GRASS SEED MIX	0.4	AC	$ 1,500.00	$ 600.00	$ 10,000.00	$ 4,000.00	$ 3,300.00	$ 1,320.00	$ 3,400.00	$ 1,360.00	$ 3,450.00	$ 1,380.00	$ 3,600.00	$ 1,440.00	$ 3,300.00	$ 1,320.00	$ 3,200.00	$ 1,280.00	$ 3,400.00	$ 1,360.00	$ 4,000.00	$ 1,600.00	$ 3,465.00	$ 1,386.00	$ 3,300.00	$ 1,320.00	$ 3,400.00	$ 1,360.00
23	PLANTS WITH WARRANTY, TREE	30.0	EA	$ 500.00	$ 15,000.00	$ 460.00	$ 13,800.00	$ 485.00	$ 14,550.00	$ 500.00	$ 15,000.00	$ 510.00	$ 15,300.00	$ 550.00	$ 16,500.00	$ 485.00	$ 14,550.00	$ 570.00	$ 17,100.00	$ 500.00	$ 15,000.00	$ 550.00	$ 16,500.00	$ 509.25	$ 15,277.50	$ 485.00	$ 14,550.00	$ 500.00	$ 15,000.00
24	PLANTS WITH WARRANTY, PERENNIALS AND ORNAMENTAL GRASSES PLUG	2567.0	EA	$ 5.00	$ 12,835.00	$ 6.50	$ 16,685.50	$ 9.50	$ 24,386.50	$ 10.00	$ 25,670.00	$ 10.00	$ 25,670.00	$ 11.00	$ 28,237.00	$ 9.50	$ 24,386.50	$ 8.50	$ 21,819.50	$ 10.00	$ 25,670.00	$ 10.00	$ 25,670.00	$ 10.00	$ 25,670.00	$ 9.50	$ 24,386.50	$ 10.00	$ 25,670.00
25	SWPPP PREPARATION	1.0	LS	$ 1,500.00	$ 1,500.00	$ 3,500.00	$ 3,500.00	$ 1,150.00	$ 1,150.00	$ 1,300.00	$ 1,300.00	$ 1,200.00	$ 1,200.00	$ 1,500.00	$ 1,500.00	$ 1,150.00	$ 1,150.00	$ 1,500.00	$ 1,500.00	$ 2,250.00	$ 2,250.00	$ 1,500.00	$ 1,500.00	$ 1,200.00	$ 1,200.00	$ 1,150.00	$ 1,150.00	$ 1,200.00	$ 1,200.00
26	SWPPP MANAGEMENT	1	LS	$ 3,000.00	$ 3,000.00	$ 3,000.00	$ 3,000.00	$ 3,000.00	$ 3,000.00	$ 3,500.00	$ 3,500.00	$ 3,150.00	$ 3,150.00	$ 4,000.00	$ 4,000.00	$ 3,000.00	$ 3,000.00	$ 3,600.00	$ 3,600.00	$ 4,000.00	$ 4,000.00	$ 3,750.00	$ 3,750.00	$ 3,150.00	$ 3,150.00	$ 3,000.00	$ 3,000.00	$ 3,100.00	$ 3,100.00
27	FILTER SOCK, 9 IN.	900	LF	$ 2.50	$ 2,250.00	$ 3.00	$ 2,700.00	$ 2.00	$ 1,800.00	$ 2.25	$ 2,025.00	$ 2.10	$ 1,890.00	$ 2.50	$ 2,250.00	$ 2.00	$ 1,800.00	$ 3.00	$ 2,700.00	$ 2.00	$ 1,800.00	$ 2.50	$ 2,250.00	$ 2.10	$ 1,890.00	$ 2.00	$ 1,800.00	$ 2.05	$ 1,845.00
28	FILTER SOCK, REMOVAL	900	LF	$ 0.50	$ 450.00	$ 0.50	$ 450.00	$ 0.30	$ 270.00	$ 0.50	$ 450.00	$ 0.30	$ 270.00	$ 0.50	$ 450.00	$ 0.30	$ 270.00	$ 1.00	$ 900.00	$ 0.30	$ 270.00	$ 0.50	$ 450.00	$ 0.30	$ 270.00	$ 0.30	$ 270.00	$ 0.35	$ 315.00
29	TEMPORARY RECP, EROSION CONTROL BLANKET	250	SQ	$ 12.00	$ 3,000.00	$ 30.00	$ 7,500.00	$ 18.00	$ 4,500.00	$ 20.00	$ 5,000.00	$ 19.00	$ 4,750.00	$ 20.00	$ 5,000.00	$ 18.00	$ 4,500.00	$ 22.50	$ 5,625.00	$ 18.00	$ 4,500.00	$ 21.50	$ 5,375.00	$ 18.90	$ 4,725.00	$ 18.90	$ 4,725.00	$ 19.00	$ 4,750.00
30	RIP-RAP, CLASS E	135	TON	$ 70.00	$ 9,450.00	$ 70.00	$ 9,450.00	$ 90.00	$ 12,150.00	$ 60.00	$ 8,100.00	$ 78.00	$ 10,530.00	$ 75.00	$ 10,125.00	$ 85.00	$ 11,475.00	$ 73.00	$ 9,855.00	$ 95.00	$ 12,825.00	$ 85.00	$ 11,475.00	$ 72.45	$ 9,780.75	$ 70.00	$ 9,450.00	$ 82.00	$ 11,070.00
31	TEMPORARY SEDIMENT BASIN AND CHECK DAM	1	LS	$ 7,500.00	$ 7,500.00	$ 4,000.00	$ 4,000.00	$ 2,000.00	$ 2,000.00	$ 4,000.00	$ 4,000.00	$ 2,250.00	$ 2,250.00	$ 2,500.00	$ 2,500.00	$ 10,000.00	$ 10,000.00	$ 6,000.00	$ 6,000.00	$ 5,000.00	$ 5,000.00	$ 5,500.00	$ 5,500.00	$ 2,100.00	$ 2,100.00	$ 32,000.00	$ 32,000.00	$ 11,000.00	$ 11,000.00
32	SILT FENCE OR DITCH CHECK	750	LF	$ 2.00	$ 1,500.00	$ 3.00	$ 2,250.00	$ 2.00	$ 1,500.00	$ 2.25	$ 1,687.50	$ 2.10	$ 1,575.00	$ 2.50	$ 1,875.00	$ 2.00	$ 1,500.00	$ 2.50	$ 1,875.00	$ 2.00	$ 1,500.00	$ 2.50	$ 1,875.00	$ 2.10	$ 1,575.00	$ 2.00	$ 1,500.00	$ 2.05	$ 1,537.50
33	SILT FENCE OR DITCH CHECK, REMOVAL OF SEDIMENT	750	LF	$ 0.50	$ 375.00	$ 0.50	$ 375.00	$ 0.30	$ 225.00	$ 0.50	$ 375.00	$ 0.30	$ 225.00	$ 0.50	$ 375.00	$ 0.30	$ 225.00	$ 1.00	$ 750.00	$ 0.30	$ 225.00	$ 0.50	$ 375.00	$ 0.30	$ 225.00	$ 0.30	$ 225.00	$ 0.35	$ 262.50
34	SILT FENCE OR DITCH CHECK, REMOVAL OF DEVICE	750	LF	$ 0.50	$ 375.00	$ 0.50	$ 375.00	$ 0.30	$ 225.00	$ 0.50	$ 375.00	$ 0.30	$ 225.00	$ 0.50	$ 375.00	$ 0.30	$ 225.00	$ 0.50	$ 375.00	$ 0.30	$ 225.00	$ 0.50	$ 375.00	$ 0.30	$ 225.00	$ 0.30	$ 225.00	$ 0.35	$ 262.50
35	EROSION CONTROL MULCHING, HYDROMULCH	6.2	AC	$ 3,300.00	$ 20,460.00	$ 4,000.00	$ 24,800.00	$ 3,000.00	$ 18,600.00	$ 3,000.00	$ 18,600.00	$ 3,150.00	$ 19,530.00	$ 3,500.00	$ 21,700.00	$ 3,000.00	$ 18,600.00	$ 3,500.00	$ 21,700.00	$ 3,200.00	$ 19,840.00	$ 3,225.00	$ 19,995.00	$ 3,150.00	$ 19,530.00	$ 3,000.00	$ 18,600.00	$ 3,100.00	$ 19,220.00
36	HARDWOOD MULCH SURFACING	37	CY	$ 75.00	$ 2,775.00	$ 80.00	$ 2,960.00	$ 145.00	$ 5,365.00	$ 150.00	$ 5,550.00	$ 155.00	$ 5,735.00	$ 160.00	$ 5,920.00	$ 145.00	$ 5,365.00	$ 26.50	$ 980.50	$ 150.00	$ 5,550.00	$ 175.00	$ 6,475.00	$ 152.00	$ 5,624.00	$ 145.00	$ 5,365.00	$ 150.00	$ 5,550.00
37	DECORATIVE STEEL FENCE, 48 IN.	44	LF	$ 95.00	$ 4,180.00	$ 60.00	$ 2,640.00	$ 90.00	$ 3,960.00	$ 100.00	$ 4,400.00	$ 92.00	$ 4,048.00	$ 100.00	$ 4,400.00	$ 88.00	$ 3,872.00	$ 96.75	$ 4,257.00	$ 90.00	$ 3,960.00	$ 100.00	$ 4,400.00	$ 92.35	$ 4,063.40	$ 130.15	$ 5,726.60	$ 135.00	$ 5,940.00
38	DECORATIVE STEEL FENCE, 60 IN.	82	LF	$ 110.00	$ 9,020.00	$ 80.00	$ 6,560.00	$ 95.00	$ 7,790.00	$ 100.00	$ 8,200.00	$ 98.00	$ 8,036.00	$ 103.00	$ 8,446.00	$ 94.00	$ 7,708.00	$ 102.00	$ 8,364.00	$ 100.00	$ 8,200.00	$ 110.00	$ 9,020.00	$ 98.00	$ 8,036.00	$ 136.27	$ 11,174.14	$ 140.00	$ 11,480.00
39	WEST LIMESTONE FISHING JETTY	1	LS	$ 6,000.00	$ 6,000.00	$ 7,000.00	$ 7,000.00	$ 9,950.00	$ 9,950.00	$ 9,000.00	$ 9,000.00	$ 10,000.00	$ 10,000.00	$ 9,000.00	$ 9,000.00	$ 8,950.00	$ 8,950.00	$ 8,250.00	$ 8,250.00	$ 9,000.00	$ 9,000.00	$ 10,000.00	$ 10,000.00	$ 9,400.00	$ 9,400.00	$ 8,950.00	$ 8,950.00	$ 9,750.00	$ 9,750.00
40	EAST LIMESTONE FISHING JETTY	1	LS	$ 10,000.00	$ 10,000.00	$ 13,000.00	$ 13,000.00	$ 16,850.00	$ 16,850.00	$ 15,000.00	$ 15,000.00	$ 16,000.00	$ 16,000.00	$ 15,502.00	$ 15,502.00	$ 14,850.00	$ 14,850.00	$ 12,250.00	$ 12,250.00	$ 15,000.00	$ 15,000.00	$ 17,000.00	$ 17,000.00	$ 15,590.00	$ 15,590.00	$ 14,850.00	$ 14,850.00	$ 18,500.00	$ 18,500.00
41	CONSTRUCTION SURVEY	1.0	LS	$ 10,000.00	$ 10,000.00	$ 10,000.00	$ 10,000.00	$ 10,000.00	$ 10,000.00	$ 10,000.00	$ 10,000.00	$ 10,000.00	$ 10,000.00	$ 10,000.00	$ 10,000.00	$ 10,000.00	$ 10,000.00	$ 10,000.00	$ 10,000.00	$ 10,000.00	$ 10,000.00	$ 10,000.00	$ 10,000.00	$ 10,000.00	$ 10,000.00	$ 10,000.00	$ 10,000.00	$ 10,000.00	$ 10,000.00
42	MOBILIZATION	1.0	LS	$ 40,000.00	$ 40,000.00	$ 25,000.00	$ 25,000.00	$ 15,000.00	$ 15,000.00	$ 20,000.00	$ 20,000.00	$ 17,500.00	$ 17,500.00	$ 22,500.00	$ 22,500.00	$ 30,000.00	$ 30,000.00	$ 28,000.00	$ 28,000.00	$ 42,500.00	$ 42,500.00	$ 35,000.00	$ 35,000.00	$ 38,530.00	$ 38,530.00	$ 38,000.00	$ 38,000.00	$ 25,000.00	$ 25,000.00
43	CONCRETE WASHOUT	1.0	LS	$ 1,500.00	$ 1,500.00	$ 2,000.00	$ 2,000.00	$ 750.00	$ 750.00	$ 2,000.00	$ 2,000.00	$ 2,000.00	$ 2,000.00	$ 750.00	$ 750.00	$ 2,000.00	$ 2,000.00	$ 1,500.00	$ 1,500.00	$ 1,000.00	$ 1,000.00	$ 3,250.00	$ 3,250.00	$ 1,470.00	$ 1,470.00	$ 2,000.00	$ 2,000.00	$ 1,000.00	$ 1,000.00
	TOTAL BID				**$500,365.00**	**Low Bid**	**$467,721.18**		**$471,832.75**		**$483,032.50**		**$497,379.50**		**$514,000.00**		**$516,051.50**		**$532,462.10**		**$544,135.00**		**$545,585.00**		**$552,396.65**		**$617,906.74**		**$631,582.50**