



AGENDA
REGULAR MEETING OF THE
WINDSOR HEIGHTS CITY COUNCIL
Monday, October 2, 2023 - 6:00 PM
WINDSOR HEIGHTS COUNCIL CHAMBERS - 1133 66th St or VIA
ZOOM by registering in advance for this meeting:
<https://us02web.zoom.us/j/7832856334>
After registering, you will receive a confirmation email containing information about
joining the meeting.

Notice to the Public: If you would like the supporting documents and information, please call City Hall by noon the day of the meeting. Copies of City Council Agendas are free to the public. In consideration of all, if you have a cell phone, please turn it off or put it on silent ring. The use of obscene and vulgar language, hate speech, racial slurs, slanderous comments, and any other disruptive behavior during the Council meeting will not be tolerated and the offender may be barred by the presiding officer from further comment before the Council during the meeting and/or removed from the meeting.

1. **Call to Order/Roll Call/Pledge of Allegiance**
2. **Approval of the Agenda**
3. **Public Forum:** This is time set aside for comments from the public on topics of City business other than those listed on the agenda. No action may be taken. Please come to the podium, state your name and address for the record and keep your comments to no more than 5 minutes.
4. **Consent Agenda:** Any item on the Consent Agenda may be removed for separate consideration.
 - A. Approve Minutes of the Regular Council Meeting on September 18, 2023
 - B. Approve Minutes of the Work Session on September 18, 2023
 - C. Approve Payment of Claims
 - D. Approve Liquor License - Thirsty Pigs LLC - 6900 School Street
 - E. Approve 68th Street Reconstruction Pay Request 4
5. **New Business:**
 - A. Approve the First Reading of Ordinance No. 23-07
 - B. Consideration of Colby Park Bid Package and Resolution No. 2023-52 A Resolution to Provide for a Notice of Public Hearing on the Proposed Plans, Specifications, Form of Contract, and Estimated Total Cost for the 2023 Colby Park Improvement Project and for the Taking of Bids on Said Project
 - C. Presentation from ISG and Discuss Winter 2023 Salt Shed Options
 - D. Discuss Additional Updates to Ordinance No. 23-06 - An Ordinance Amending Chapters 165 through 177 of the Code of Ordinances for the City of Windsor Heights Related to Zoning
 - E. Consideration of Purchase of Case 521-G End Loader
6. **Reports:**

The agenda was posted on the official bulletin boards, posted to www.windsorheights.org, and city social media platforms in compliance with the requirements of city ordinances and the open meetings law.

A. Mayor, Council Reports and Committee Updates, and Administration Reports

7. **Adjourn**

The agenda was posted on the official bulletin boards, posted to www.windsorheights.org, and city social media platforms in compliance with the requirements of city ordinances and the open meetings law.

City of Windsor Heights Regular Business Meeting Minutes
Monday, September 18, 2023 - 6:00 PM
WINDSOR HEIGHTS COUNCIL CHAMBERS - 1133 66th ST

1. Call to Order/Roll Call/Pledge of Allegiance

Mayor Jones called the meeting to order at 6:00 PM. Council members present: Susan Skeries, Threase Harms, Joseph Jones, and Lauren Campbell. Michael Libbie was delayed and was present beginning at agenda item Consideration of Resolution No. 2023-50 A resolution Approving the Preliminary Plat for Silverstar Carwash at 6300 Hickman Road. Staff present: City Administrator Adam Plagge, City Clerk Adam Strait, Deputy City Clerk Nate Leuthold, Finance Director Rachelle Swisher, City Attorney Pat Burk, Fire Chief Jim Mease, and Police Chief Pete Roth.

2. Approval of the Agenda

Motion by Susan Skeries to approve. Seconded by Joseph Jones. Motion Passed 4-0.

3. Swearing in Lieutenant Michael Irlbeck and Lieutenant Chad Norris

Cheif Roth swore in Lieutenants Michael Irlbeck and Chad Norris.

4. Presentation and Receipt of Gifts From Sister City KOFU by Ricki King

Windsor Heights Sister City representative presented two gifts of art from the City's Sister City Kofu.

5. Public Hearing:

- A. Public Hearing on Ordinance No. 23-06 - An Ordinance Amending Chapters 165 through 177 of the Code of Ordinances for the City of Windsor Heights Related to Zoning - Staff Recommendation to Table Until October 16th**

Jane Kansier from Bolton & Menk presented the changes recommended to the ordinance. Bob Bishop (1128 64th Street) gave public comment against the proposed set back requirements, 25 ft lot, and against the merger of UC and TC zones. Threase Harms motioned to table the public hearing based on staff recommendation. Seconded by Susan Skeries. Motion passed 4-0.

- B. Public Hearing on Ordinance No. 23-07 - An Ordinance Amending Chapter 180.06 of the Code of Ordinances for the City of Windsor Heights Related to Conditional Use Permit Standards for Approval**

Trey Rouse from Bolton & Menk presented the changes recommended to the ordinance. Motion by Threase Harms to open the Public Hearing at 6:55 PM. Seconded by Susan Skeries. Motion passed 4-0.

No public comments written or oral.

Motion by Threase Harms to close the Public Hearing at 6:56 PM. Seconded by Susan Skeries. Motion passed 4-0.

6. Public Forum: This is time set aside for comments from the public on topics of City business other than those listed on the agenda. No action may be taken. Please come to the podium, state your name and address for the record and keep your comments to no more than 5 minutes.

Jules Burtnette and Ashlen Sheaffer of the Des Moines Children's Museum spoke about their organization and the positive influence it has on young children in Windsor Heights that visit. Tiffany Menke of the Urbandale and Windsor Heights Chambers of Commerce presented councillor Susan Skeries with Citizen of the Year.

7. **Consent Agenda:** Any item on the Consent Agenda may be removed for separate consideration.

Motion by Joseph Jones to Approve Consent Items A - L. Seconded by Susan Skeries. Motion passed 4-0.

- A. Approve Minutes of the Regular Council Meeting on August 21, 2023
- B. Approve Minutes of the Special Council Meeting on September 1, 2023
- C. Approve Payment of Claims
- D. Approve Financial Reports
- E. Approve Liquor License - Kum & Go #4098 - 7229 University Ave
- F. Approve Liquor License - Kathmandu - 7225 Apple Valley Drive
- G. Approve Resolution No. 2023-47 A Resolution to Appoint a Member and Alternate Members to the Polk County Emergency Management Commission
- H. Approve Public Safety Parking Lot Improvements Change Order 1
- I. Approve Public Safety Parking lot Improvements Pay Request 4
- J. Approve Final Acceptance and Certificate of Completion for Public Safety Parking Lot Improvements
- K. Approve Resolution No. 2023-48 A Resolution Approving the City of Windsor Heights Entering into an Agreement with the Greater Des Moines Convention and Visitors Bureau
- L. Memo on Phase 2 of Colby Park Improvements

8. **New Business:**

- A. Consideration of Moving Beggars Night to Last Saturday of October

City Clerk Adam Strait read 4 emails from residents. Motion by Threase Harms to Approve. Seconded by Lauren Campbell. Motion passed 3-1. No vote by Joseph Jones.

- B. Consideration of Resolution 2023-48 A Resolution Approving the Site Plan B-Bop's at 1105 73rd Street

Trey Rouse of Bolton and Menk presented staff report on the site plan. Applicant Doug Mandernach, Civil Design Advantage, answered Council questions. Motion by Threase Harms to Approve. Seconded by Joseph Jones. Motion passed 4-0.

- C. Consideration of No. 2023-50 A Resolution Approving the Preliminary Plat for Silverstar Carwash at 6300 Hickman Road

Trey Rouse of Bolton and Menk presented staff report on the site plan. Michael Libbie joined through Zoom. Motion by Joseph Jones to Approve. Seconded by Threase Harms. Motion passed 5-0.

- D. Consideration of Resolution No.2023-51 A Resolution Approving the Site Plan Silverstar Carwash at 6300 Hickman Road

Trey Rouse of Bolton and Menk presented staff report on the site plan. Applicant Dan Nelson, Midwest Fidelity Partners, answered Council questions. Motion by Threase Harms to Approve. Seconded by Joseph Jones. Motion passed 5-0.

- E. Consideration of DART Letters of Agreement Between DART for the Installation and Maintenance of Transit Bus Shelters near 7101 University Ave and 6580 University Ave

Motion by Threase Harms to Approve. Seconded by Susan Skeries. Motion passed 5-0.

9. **Reports:**

- A. Mayor, Council Reports and Committee Updates, and Administration Reports

Threase Harms - Gave an update on ICON and assisting with special events

Lauren Campbell - Gave an update on Brick Work meeting in the Adel facility, Fall Fest update, and upcoming BRAVO meeting

Michael Libbie - Thanked Adam Plagge for one-on-one meetings and gave an update on upcoming Economic Development meeting

Joseph Jones - Gave an update on DART including new CEO and facility

Susan Skeries - Gave an update on MWA and their facility

**fire, special events update including Fall Fest, Veterans Day, and Windsor Wonderland, and reported due to an increase in attendance to Movies in the Park and anticipate large crowd for Fall Fest the treat will be doubled for Hocus Pocus
Adam Plagge - Gave an update on modernizing the agenda packet, IA Water Works, and spoke towards the Public Works Facilities Analysis and the need for a new salt shed**

i Mayor's Report

B. Fire Department Report

C. Police Department Report

D. Public Works Facilities Analysis Report

10. Adjourn to Council Work Session Immediately Following the Regular Council Meeting

Motion by Threase Harms to adjourn the meeting at 7:42 PM. Seconded by Susan Skeries. Motion passed 5-0.

Mike Jones, Mayor

Adam Strait, City Clerk

**City of Windsor Heights Regular Business Meeting Minutes
Monday, September 18, 2023 - 6:00 PM
WINDSOR HEIGHTS COUNCIL CHAMBERS - 1133 66th ST**

VIA ZOOM by registering in advance for this meeting:

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1. Call to Order/Roll Call

Mayor Jones called the meeting to order at 7:49 PM. Council members present: Susan Skeries, Threase Harms, Joseph Jones, and Lauren Campbell. Council members absent: Michael Libbie. Staff present: City Administrator Adam Plagge, City Clerk Adam Strait, and Deputy City Clerk Nate Leuthold

2. Vision Statement Session

A. Discuss City Vision Statement

Cassandra Halls of 2 the Top and Scott Raecker of The Robert D. and Billie Ray Center led discussion on the City's vision statement. Council decided on a final statement of "Working together to build the best small city in the metro."

3. Adjourn

Motion by Threase Harms to adjourn the meeting at 8:15 PM. Seconded by Susan Skeries. Motion passed 4-0.

Mike Jones, Mayor

Adam Strait, City Clerk

VENDOR NAME	REFERENCE	AMOUNT	VENDOR TOTAL	CHECK#	CHECK DATE
AMAZON CAPITAL SERVICES	GLOVES		133.53	55814	9/19/23
AMERICAN ALARMS	CEC MONITORING		200.94	55815	9/19/23
AMERITAS LIFE INS. CORP.	VISION INS		262.00	4424	9/27/23
ARNOLD MOTOR SUPPLY	NITRILE GLOVES		75.36	55816	9/19/23
ASSURITY	ASSURITY		872.28	4428	9/27/23
BANKERS TRUST COMPANY	CC FEES	49.23		4414	9/19/23
BANKERS TRUST COMPANY	CC FEES	57.54		4415	9/19/23
BANKERS TRUST COMPANY	CC FEES	232.22		4416	9/19/23
BANKERS TRUST COMPANY	See Vendor Activity Report	2,992.49	3,331.48	55818	9/19/23
BITUMINOUS MATERIALS			117.60	55819	9/19/23
BOLTON & MENK	PARK DESIGN		120,094.50	55820	9/19/23
BOUND TREE MEDICAL LLC	MEDICAL SUPPLIES		808.53	55821	9/19/23
BRICK GENTRY PC	AUG LEGAL FEES		4,132.50	55822	9/19/23
BULLZEYE, INC	CEC AUG CLEANING		5,147.60	55823	9/19/23
CATCH DES MOINES	4TH QTR FY23 28E		1,100.91	55824	9/19/23
CENTURY LINK	TELEPHONE		6.26	55825	9/19/23
CITY OF URBANDALE	TRAFFIC SIGNALS		210.32	55826	9/19/23
CITY WIDE HTG. & A/C	CEC REPAIRS		112.35	55827	9/19/23
CLIVE POWER EQUIP.	SHOP SUPPLIES		230.68	55828	9/19/23
CONSTRUCTION MATERIALS TESTING	PCC PATCHING		544.00	55829	9/19/23
CORELL RECYCLING	ASPHALT RECYCLING		71.12	55830	9/19/23
DES MOINES REGISTER	NEWSPAPER DELIVERY		76.00	55831	9/19/23
DES MOINES WATER WORKS	1133 66TH ST		325.51	55832	9/19/23
DIAMOND VOGEL, INC	PAINT SUPPLIES		223.28	55833	9/19/23
EMPLOYEE BENEFIT SYSTEMS	HEALTH INS	12,700.00		4418	9/21/23
EMPLOYEE BENEFIT SYSTEMS	HEALTH INS	22,175.98		4419	9/21/23
EMPLOYEE BENEFIT SYSTEMS	HEALTH INS	20,801.38	55,677.36	4420	9/21/23
ELECTRICAL ENG. & EQ.	SUPPLIES		24.98	55834	9/19/23
FEDERAL TAX DEPOSIT	FED/FICA TAX	28,902.21		4410	9/14/23
FEDERAL TAX DEPOSIT	FED/FICA TAX	28,037.89	56,940.10	4425	9/27/23
FORCE FITTERS	CLOTHING ALLOWANCE		42.00	55835	9/19/23
GALLS INC	CLOTHING ALLOWANCE		548.69	55836	9/19/23
GOODRICH, WILLIAM	SEPT CELL PHONE		50.00	55837	9/19/23
GRAINGER	SAFETY GLASSES		37.68	55838	9/19/23
GRIMES ASPHALT & PAVING	STREET MAINTENANCE SUPPLIES		193.50	55839	9/19/23
O'DONNELL ACE HICKMAN	TRAPS		40.83	55840	9/19/23
ICMA RETIREMENT TRUST	ICMA	421.21		4409	9/14/23
ICMA RETIREMENT TRUST	ICMA RETIREMENT	1,370.04		4413	9/14/23
ICMA RETIREMENT TRUST	ICMA	413.56	2,204.81	4422	9/27/23
IEMSA	ANNUAL MEMBERSHIP		100.00	55841	9/19/23
IPERS	HEALTH PRETAX	32.50		4408	9/14/23
IPERS	PROTECT IPERS	50,640.47	50,672.97	4421	9/27/23
IRLBECK, MICHAEL	SEPT CELL PHONE		50.00	55842	9/19/23
ISOLVED BENEFIT SERVICES	FLEX CLD BENEFIT	771.16		4411	9/14/23
ISOLVED BENEFIT SERVICES	FLEX CLD BENEFIT	348.08	1,119.24	4426	9/27/23
JOHNSON, KYLE	SEPT CELL PHONE		50.00	55843	9/19/23
KOCH OFFICE GROUP	COPIER CONTRACT		184.56	55844	9/19/23
LARSON, ANDY	SEPT CELL PHONE		50.00	55845	9/19/23
LEUTHOLD, NATE	SEPT CELL PHONE		67.88	55846	9/19/23
LOGAN CONTRACTORS SUPPLY	SUPPLIES		555.56	55847	9/19/23
LOUNSBURY LANDSCAPING	ROADSTONE		201.40	55848	9/19/23
LOWE'S	SUPPLIES		173.00	55849	9/19/23
MANHATTANLIFE	MANHATTAN LIFE		301.68	4427	9/27/23
MEASE, JIM	SEPT CELL PHONE		50.00	55850	9/19/23

VENDOR NAME	REFERENCE	AMOUNT	VENDOR TOTAL	CHECK#	CHECK DATE
METRO WASTE AUTHORITY	LARGE ITEM STICKERS		1,000.00	55851	9/19/23
MID-IOWA TOWING	TOWING		534.00	55852	9/19/23
MIDAMERICAN ENERGY	801 73RD ST		28.64	4417	9/19/23
NORRIS, CHAD	SEPT CELL PHONE		50.00	55853	9/19/23
OMNI BILLING	AUG EMS BILLING		878.04	55854	9/19/23
PEARSON, ROB	SEPT CELL PHONE		50.00	55855	9/19/23
PLACGE, ADAM	600 PAPER PLATES		322.48	55856	9/19/23
PORTER LEE CORPORATION	BARCODE LABELS		103.17	55857	9/19/23
PREMIER AUTOMOTIVE	2018 FORD REPAIRS		65.14	55858	9/19/23
PRICE, JEFF	REIMBURSEMENT PROF DEV		50.00	55859	9/19/23
QUALITY PEST CONTROL, INC	PEST CONTROL		35.00	55860	9/19/23
RANGEMASTERS TRAINING CTR	CLOTHING ALLOWANCE		198.51	55861	9/19/23
DES MOINES REGISTER	PUBLICATIONS		269.61	55862	9/19/23
RELIASTAR LIFE INS CO	NISSAN		75.00	55863	9/19/23
ROBERTS, JASON	SEPT CELL PHONE		50.00	55864	9/19/23
ROTH, PETE	SEPT CELL PHONE		50.00	55865	9/19/23
SAFE BUILDING COMPLIANCE	BUILDING INSPECTIONS		3,388.56	55866	9/19/23
SCOTTY'S BODY SHOP	2023 FORD REPAIRS		2,732.48	55867	9/19/23
SNAP-ON MARK STUCHEL	TOOLS		31.10	55868	9/19/23
STANDARD INSURANCE COMPANY	LIFE/LTD/STD		2,028.84	55869	9/19/23
STRAIT, ADAM	SEPT CELL PHONE		50.00	55870	9/19/23
SWISHER, RACHELLE	SEPT CELL PHONE		50.00	55871	9/19/23
TRANSUNION RISK & ALTERNATIVE	MONTHLY CHARGES		75.00	55872	9/19/23
TREASURER STATE OF IOWA	STATE TAXES		12,746.19	4423	9/27/23
UNIVERSITY DM ACE HARDWARE	SUPPLIES		15.68	55873	9/19/23
UPHDM OCCUPATIONAL MED	PHYSICALS		1,739.75	55874	9/19/23
VAN WALL EQUIPMENT	12V BATTERY		188.27	55875	9/19/23
WEST DES MOINES TRUE VALUE	LIME		237.86	55876	9/19/23
WEST SIDE MECHANICS	AMB ENGINE AND INSTALLATION		21,106.40	55877	9/19/23
			=====		
Accounts Payable Total			355,562.71		

Payroll Checks

001	GENERAL	537.10
Total Paid On: 9/14/23		537.10
001	GENERAL	67,049.65
110	ROAD USE TAX	7,973.45
740	STORM WATER	1,832.33
Total Paid On: 9/15/23		76,855.43
001	GENERAL	517.91
Total Paid On: 9/27/23		517.91
Total Payroll Paid		77,910.44
Report Total		433,473.15

CLAIMS REPORT
CLAIMS FUND SUMMARY

FUND	NAME	AMOUNT
001	GENERAL	240,423.73
110	ROAD USE TAX	27,133.74
112	EMPLOYEE BENEFITS	60,890.99
303	COLBY PARK	60,684.00
319	2020 STREET PROJECTS	1,344.00
322	73RD STREET PROJECT	21,507.00
323	68TH ST	11,496.50
324	2023 HMA OVERLAY PROJECT	936.00
325	2023 PCC PATCHING PROJECT	1,332.00
329	PUBLIC SAFETY PARKING LOT	3,384.00
670	LANDFILL/GARBAGE	1,000.00
740	STORM WATER	3,341.19

	TOTAL FUNDS	433,473.15

9/14/2023 THRU 9/27/2023

INVOICE NO	LN	DATE	PO NO	REFERENCE	TRACK		1099	NET	CHECK	PD DATE
					CD	GL ACCOUNT				
58 BANKERS TRUST COMPANY										
09192023 1	1	9/19/23		CC FEES		001-620-6405		49.23	4414	9/19/23 E
09192023 2	1	9/19/23		CC FEES		001-620-6405		57.54	4415	9/19/23 E
09192023 3	1	9/19/23		CC FEES		001-620-6405		232.22	4416	9/19/23 E
09192023 3526	1	9/19/23		STORAGE UNIT		001-470-6499		25.99	55818	9/19/23
09192023 3526	2	9/19/23		POPCORN MOVIES IN PARK		001-470-6496		60.00	55818	9/19/23
09192023 3526	3	9/19/23		ZOOM		001-610-6507		31.98	55818	9/19/23
09192023 3526	4	9/19/23		OFFICE SUPPLIES CITY HALL		001-620-6506		16.56	55818	9/19/23
09192023 3526	5	9/19/23		OFFICE SUPPLIES CITY HALL		001-620-6506		93.78	55818	9/19/23
09192023 3526	6	9/19/23		SILENT DISCO FALL FESTIVAL		001-470-6497		500.00	55818	9/19/23
09192023 3526	7	9/19/23		OFFICE SUPPLIES CITY HALL		001-620-6506		24.25	55818	9/19/23
09192023 3534	1	9/19/23		CONSTANT CONTACT		001-620-6373		81.00	55818	9/19/23
09192023 3534	2	9/19/23		NAME PLATES		001-620-6506		38.50	55818	9/19/23
09192023 3534	3	9/19/23		BUSINESS CARDS PLACGE/LEUTHOLD		001-620-6506		68.92	55818	9/19/23
09192023 3534	4	9/19/23		CLOTHING ALLOWANCE		001-620-6181		396.57	55818	9/19/23
09192023 7940	1	9/19/23		SIGNUP GENIUS		001-470-6499		107.89	55818	9/19/23
09192023 8417	1	9/19/23		NATIONAL NIGHT OUT		001-110-6507		167.50	55818	9/19/23
09192023 8417	2	9/19/23		NATIONAL NIGHT OUT		001-110-6507		380.00	55818	9/19/23
09192023 8417	3	9/19/23		CONDOLENCES FLOWERS		001-110-6499		75.60	55818	9/19/23
09192023 8417	4	9/19/23		CREATIVE CLOUD/ACROBAT PRO		001-615-6507		193.48	55818	9/19/23
09192023 8417	5	9/19/23		ACCESS BADGES		001-110-6507		100.00	55818	9/19/23
09192023 8425	1	9/19/23		MEASE PROF DEV		001-150-6230		199.00	55818	9/19/23
09192023 8425	2	9/19/23		BACKGROUND CHECK		001-150-6411		15.00	55818	9/19/23
09192023 8425	3	9/19/23		BACKGROUND CHECK		001-150-6411		15.00	55818	9/19/23
09192023 8425	4	9/19/23		MEASE PROF DEV		001-150-6230		50.00	55818	9/19/23
09192023 8433	1	9/19/23		WEEDEATER PARTS		001-480-6332		41.98	55818	9/19/23
09192023 8433	2	9/19/23		CLOTHING ALLOWANCE		110-210-6180		229.49	55818	9/19/23
09192023 8433	3	9/19/23		CLOTHING ALLOWANCE		110-210-6180		80.00	55818	9/19/23
BANKERS TRUST COMPANY								3331.48		
***** REPORT TOTAL *****								3331.48		

Contractor's Application for Payment

Owner: <u>City of Windsor Heights</u>	Owner's Project No.: _____
Engineer: <u>Bolton & Menk, Inc.</u>	Engineer's Project No.: <u>0A1.127880</u>
Contractor: <u>All Star Concrete</u>	Other Project No.: _____
Project: <u>68th Street Reconstruction</u>	
Contract: <u>Paving, Municipal</u>	
Application No.: <u>4</u>	Application Date: <u>9/10/2023</u>
Application Period: From <u>8/1/2023</u> to <u>8/31/2023</u>	

1. Original Contract Price	\$ 1,922,231.25
2. Net change by Change Orders	\$ -
3. Current Contract Price (Line 1 + Line 2)	\$ 1,922,231.25
4. Total Work completed and materials stored to date (Sum of Column G Lump Sum Total and Column J Unit Price Total)	\$ 1,002,028.77
5. Retainage	
a. <u>5%</u> X <u>\$ 1,002,028.77</u> Work Completed	\$ 50,101.44
b. <u>5%</u> X <u>\$ -</u> Stored Materials	\$ -
c. Total Retainage (Line 5.a + Line 5.b)	\$ 50,101.44
6. Amount eligible to date (Line 4 - Line 5.c)	\$ 951,927.33
7. Less previous payments (Line 6 from prior application)	\$ 880,780.01
8. Amount due this application	\$ 71,147.32

Contractor's Certification

The undersigned Contractor certifies, to the best of its knowledge, the following:

(1) All previous progress payments received from Owner on account of Work done under the Contract have been applied on account to discharge Contractor's legitimate obligations incurred in connection with the Work covered by prior Applications for Payment;

(2) Title to all Work, materials and equipment incorporated in said Work, or otherwise listed in or covered by this Application for Payment, will pass to Owner at time of payment free and clear of all liens, security interests, and encumbrances (except such as are covered by a bond acceptable to Owner indemnifying Owner against any such liens, security interest, or encumbrances); and

(3) All the Work covered by this Application for Payment is in accordance with the Contract Documents and is not defective.

Contractor: <u>All Star Concrete</u>	
Signature: <u><i>Paublo Sanchez</i></u>	Date: <u>09.27.2023</u>
Name: <u>Paublo Sanchez</u>	Title: <u>Project Supervisor</u>

Recommended by Engineer	Approved by Owner
By: <u><i>Justin Ernst</i></u>	By: _____
Name: <u>Justin Ernst</u>	Name: _____
Title: <u>Civil Project Manager</u>	Title: _____
Date: <u>9.28.23</u>	Date: _____

Progress Estimate - Unit Price Work

Contractor's Application for Payment

Owner:	City of Windsor Heights	Owner's Project
Engineer:	Bolton & Menk, Inc.	Engineer's Project
Contractor:	All Star Concrete	Other Project No.: 0A1.127880
Project:	68th Street Reconstruction	
Contract:	Paving, Municipal	

Application No.: 4		Application Period:		From	08/01/23	to	08/31/23	Application Date: 09/10/23				
A	B	C	D	E	F	F1	F2	G	H	J	K	L
Bid Item No.	Description	Contract Information				Previous Estimate		Work Completed		Work Completed and Materials Stored to Date (H + I) (\$)	% of Value of Item (J / F) (%)	Balance to Finish (F - J) (\$)
		Item Quantity	Units	Unit Price (\$)	Value of Bid Item (C X E) (\$)	Quantity Previous Estimate	Value Previous Estimate	Estimated Quantity Incorporated in the Work	Value of Work Completed to Date (E X G) (\$)			
Original Contract												
1	CLEARING AND GRUBBING	1	LS	\$ 8,500.00	\$ 8,500.00	1.00	8,500.00	1.00	\$ 8,500.00	\$ 8,500.00	100%	\$ -
2	TOPSOIL, ON-SITE	375	CY	\$ 20.00	\$ 7,500.00	-	-	-	\$ -	\$ -	-	\$ 7,500.00
3	EXCAVATION, CLASS 10	1,085	CY	\$ 20.00	\$ 21,700.00	434.00	8,680.00	434.00	\$ 8,680.00	\$ 8,680.00	40%	\$ 13,020.00
4	BELOW GRADE EXCAVATION (CORE OUT)	230	CY	\$ 60.00	\$ 13,800.00	-	-	-	\$ -	\$ -	-	\$ 13,800.00
5	SUBGRADE PREPARATION	5,515	SY	\$ 3.25	\$ 17,923.75	-	-	2,045.00	\$ 6,646.25	\$ 6,646.25	37%	\$ 11,277.50
6	SUBGRADE TREATMENT, 15% POZZO STONE	560	TON	\$ 50.00	\$ 28,000.00	-	-	-	\$ -	\$ -	-	\$ 28,000.00
7	SUBBASE, MODIFIED, 8"	5,515	SY	\$ 14.50	\$ 79,967.50	-	-	2,045.00	\$ 29,652.50	\$ 29,652.50	37%	\$ 50,315.00
8	REPLACEMENT OF UNSUITABLE BACKFILL MATERIAL	200	CY	\$ 70.00	\$ 14,000.00	-	-	-	\$ -	\$ -	-	\$ 14,000.00
9	SANITARY SEWER GRAVITY MAIN, TRENCHED, PVC TRUSS, 8"	20	LF	\$ 210.00	\$ 4,200.00	-	-	-	\$ -	\$ -	-	\$ 4,200.00
10	SANITARY SEWER SERVICE STUB, PVC, 4"	1	EA	\$ 3,500.00	\$ 3,500.00	-	-	-	\$ -	\$ -	-	\$ 3,500.00
11	STORM SEWER, TRENCHED, RCP, 15"	640	LF	\$ 85.00	\$ 54,400.00	632.00	53,720.00	632.00	\$ 53,720.00	\$ 53,720.00	99%	\$ 680.00
12	STORM SEWER, TRENCHED, RCP, 18"	84	LF	\$ 140.00	\$ 11,760.00	90.00	12,600.00	90.00	\$ 12,600.00	\$ 12,600.00	107%	\$ (840.00)
13	STORM SEWER, TRENCHED, RCP, 24"	99	LF	\$ 125.00	\$ 12,375.00	85.00	10,625.00	85.00	\$ 10,625.00	\$ 10,625.00	86%	\$ 1,750.00
14	REMOVAL OF STORM SEWER, LESS THAN 36"	132	LF	\$ 25.00	\$ 3,300.00	132.00	3,300.00	132.00	\$ 3,300.00	\$ 3,300.00	100%	\$ -
15	SUBDRAIN, HDPE, 6"	2,365	LF	\$ 25.00	\$ 59,125.00	-	-	1,080.00	\$ 27,000.00	\$ 27,000.00	46%	\$ 32,125.00
16	SUBDRAIN CLEANOUT, TYPE A-1, 6"	11	EA	\$ 700.00	\$ 7,700.00	-	-	7.00	\$ 4,900.00	\$ 4,900.00	64%	\$ 2,800.00
17	SUBDRAIN OUTLETS AND CONNECTIONS, CMP, 6"	9	EA	\$ 350.00	\$ 3,150.00	-	-	7.00	\$ 2,450.00	\$ 2,450.00	78%	\$ 700.00
18	CONNECT TO SUBDRAIN PIPE	1	EA	\$ 125.00	\$ 125.00	-	-	-	\$ -	\$ -	-	\$ 125.00
19	WATER MAIN, TRENCHED, C900 DR18 PVC, RESTRAINED	20	LF	\$ 100.00	\$ 2,000.00	20.00	2,000.00	20.00	\$ 2,000.00	\$ 2,000.00	100%	\$ -
20	WATER MAIN, TRENCHED, C900 DR18 PVC, STAB JOINT, 8"	1,245	LF	\$ 75.00	\$ 93,375.00	855.00	64,125.00	855.00	\$ 64,125.00	\$ 64,125.00	69%	\$ 29,250.00
21	WATER MAIN, TRENCHED, C900 DR18 PVC, RESTRAINED	160	LF	\$ 85.00	\$ 13,600.00	80.00	6,800.00	80.00	\$ 6,800.00	\$ 6,800.00	50%	\$ 6,800.00
22	FITTING, 6"	120	LB	\$ 25.00	\$ 3,000.00	139.00	3,475.00	139.00	\$ 3,475.00	\$ 3,475.00	116%	\$ (475.00)
23	FITTING, 8"	1,220	LB	\$ 15.00	\$ 18,300.00	876.00	13,140.00	876.00	\$ 13,140.00	\$ 13,140.00	72%	\$ 5,160.00
24	WATER SERVICE TRANSFER, COPPER, 1" (SAME SIDE)	13	EA	\$ 2,500.00	\$ 32,500.00	7.00	17,500.00	7.00	\$ 17,500.00	\$ 17,500.00	54%	\$ 15,000.00
25	WATER SERVICE TRANSFER, COPPER, 1" (OPPOSITE SIDE)	13	EA	\$ 3,500.00	\$ 45,500.00	9.00	31,500.00	9.00	\$ 31,500.00	\$ 31,500.00	69%	\$ 14,000.00
26	WATER MAIN REMOVAL	150	LF	\$ 30.00	\$ 4,500.00	20.00	600.00	20.00	\$ 600.00	\$ 600.00	13%	\$ 3,900.00
27	VALVE, GATE, DUCTILE IRON (DI), 6"	1	EA	\$ 2,400.00	\$ 2,400.00	1.00	2,400.00	1.00	\$ 2,400.00	\$ 2,400.00	100%	\$ -
28	VALVE, GATE, DUCTILE IRON (DI), 8"	4	EA	\$ 3,100.00	\$ 12,400.00	2.00	6,200.00	2.00	\$ 6,200.00	\$ 6,200.00	50%	\$ 6,200.00
29	FIRE HYDRANT ASSEMBLY	3	EA	\$ 8,000.00	\$ 24,000.00	2.00	16,000.00	2.00	\$ 16,000.00	\$ 16,000.00	67%	\$ 8,000.00
30	FLUSHING DEVICE (BLOW OFF), MIN 2 IN DIAMETER,	3	EA	\$ 2,400.00	\$ 7,200.00	1.00	2,400.00	1.00	\$ 2,400.00	\$ 2,400.00	33%	\$ 4,800.00
31	FIRE HYDRANT ASSEMBLY REMOVAL	3	EA	\$ 800.00	\$ 2,400.00	2.00	1,600.00	2.00	\$ 1,600.00	\$ 1,600.00	67%	\$ 800.00
32	VALVE BOX REMOVAL	5	EA	\$ 400.00	\$ 2,000.00	4.00	1,600.00	4.00	\$ 1,600.00	\$ 1,600.00	80%	\$ 400.00
33	TAP FEE, 1", REPLACEMENT TAP FOR WATER SERVICE	26	EA	\$ 450.00	\$ 11,700.00	16.00	7,200.00	16.00	\$ 7,200.00	\$ 7,200.00	62%	\$ 4,500.00
34	PREPARE EXCAVATION FOR TAPPING SLEEVE AND VALVE	2	EA	\$ 2,200.00	\$ 4,400.00	1.00	2,200.00	1.00	\$ 2,200.00	\$ 2,200.00	50%	\$ 2,200.00
35	FOUNDATION ROCK	50	TON	\$ 60.00	\$ 3,000.00	-	-	-	\$ -	\$ -	-	\$ 3,000.00
36	STORM MANHOLE, SW-401, 48"	1	EA	\$ 6,500.00	\$ 6,500.00	1.00	6,500.00	1.00	\$ 6,500.00	\$ 6,500.00	100%	\$ -
37	INTAKE, SW-503	1	EA	\$ 10,500.00	\$ 10,500.00	0.75	7,875.00	0.75	\$ 7,875.00	\$ 7,875.00	75%	\$ 2,625.00
38	INTAKE, SW-505	6	EA	\$ 10,500.00	\$ 63,000.00	4.50	47,250.00	4.50	\$ 47,250.00	\$ 47,250.00	75%	\$ 15,750.00
39	INTAKE, SW-508	1	EA	\$ 11,500.00	\$ 11,500.00	0.75	8,625.00	0.75	\$ 8,625.00	\$ 8,625.00	75%	\$ 2,875.00
40	INTAKE, SW-510, MODIFIED, 13' X 5'	1	EA	\$ 35,000.00	\$ 35,000.00	0.75	26,250.00	0.75	\$ 26,250.00	\$ 26,250.00	75%	\$ 8,750.00
41	MANHOLE ADJUSTMENT, MINOR	3	EA	\$ 1,600.00	\$ 4,800.00	1.00	1,600.00	1.00	\$ 1,600.00	\$ 1,600.00	33%	\$ 3,200.00

Progress Estimate - Unit Price Work

Contractor's Application for Payment

Owner:City of Windsor Heights

Engineer:Bolton & Menk, Inc.

Contractor:All Star Concrete

Project:68th Street Reconstruction

Contract:Paving, Municipal

Owner's Project

Engineer's Project0A1.127880

Other Project No.:

Application No.:4

Application Period:From08/01/23to08/31/23

Application Date:09/10/23

A	B	C	D	E	F	F1	F2	G	H	J	K	L
Bid Item No.	Description	Item Quantity	Units	Unit Price (\$)	Value of Bid Item (C X E) (\$)	Previous Estimate		Work Completed		Work Completed and Materials Stored to Date (H + I) (\$)	% of Value of Item (I / F) (%)	Balance to Finish (F - J) (\$)
						Quantity Previous Estimate	Value Previous Estimate	Estimated Quantity Incorporated in the Work	Value of Work Completed to Date (E X G) (\$)			
42	MANHOLE ADJUSTMENT, MAJOR	2	EA	\$ 3,700.00	\$ 7,400.00	2.00	7,400.00	2.00	\$ 7,400.00	\$ 7,400.00	100%	\$ -
43	REMOVE INTAKE	5	EA	\$ 800.00	\$ 4,000.00	5.00	4,000.00	5.00	\$ 4,000.00	\$ 4,000.00	100%	\$ -
44	PAVEMENT, PCC, 7"	4,280	SY	\$ 67.00	\$ 286,760.00	-	-	2,409.06	\$ 161,407.02	\$ 161,407.02	56%	\$ 125,352.98
45	PAVEMENT, PCC, 10"	35	SY	\$ 100.00	\$ 3,500.00	-	-	-	\$ -	\$ -	-	\$ 3,500.00
46	REMOVAL OF SIDEWALK	25	SY	\$ 22.00	\$ 550.00	-	-	-	\$ -	\$ -	-	\$ 550.00
47	REMOVAL OF DRIVEWAY	835	SY	\$ 17.00	\$ 14,195.00	417.50	7,097.50	417.50	\$ 7,097.50	\$ 7,097.50	50%	\$ 7,097.50
48	SIDEWALK, PCC, 4"	560	SY	\$ 60.00	\$ 33,600.00	-	-	262.91	\$ 15,774.60	\$ 15,774.60	47%	\$ 17,825.40
49	SIDEWALK, PCC, 6"	25	SY	\$ 85.00	\$ 2,125.00	-	-	5.20	\$ 442.00	\$ 442.00	21%	\$ 1,683.00
50	DETECTABLE WARNING	20	SF	\$ 55.00	\$ 1,100.00	-	-	-	\$ -	\$ -	-	\$ 1,100.00
51	DRIVEWAY, PAVED, PCC, 6"	885	SY	\$ 70.00	\$ 61,950.00	-	-	428.27	\$ 29,978.90	\$ 29,978.90	48%	\$ 31,971.10
52	DRIVEWAY, GRANULAR	250	TON	\$ 50.00	\$ 12,500.00	-	-	-	\$ -	\$ -	-	\$ 12,500.00
53	PAVEMENT REMOVAL	4,075	SY	\$ 13.00	\$ 52,975.00	2,045.00	26,585.00	2,045.00	\$ 26,585.00	\$ 26,585.00	50%	\$ 26,390.00
54	TEMPORARY TRAFFIC CONTROL	1	LS	\$ 13,850.00	\$ 13,850.00	0.40	5,540.00	0.40	\$ 5,540.00	\$ 5,540.00	40%	\$ 8,310.00
55	PERFORATED SQUARE STEEL TUBE POSTS	12	EA	\$ 600.00	\$ 7,200.00	-	-	-	\$ -	\$ -	-	\$ 7,200.00
56	WATERING	25	MGAL	\$ 60.00	\$ 1,500.00	-	-	-	\$ -	\$ -	-	\$ 1,500.00
57	SOD	215	SQ	\$ 65.00	\$ 13,975.00	-	-	-	\$ -	\$ -	-	\$ 13,975.00
58	SWPPP PREPARATION	1	LS	\$ 1,500.00	\$ 1,500.00	1.00	1,500.00	1.00	\$ 1,500.00	\$ 1,500.00	100%	\$ -
59	SWPPP MANAGEMENT	1	LS	\$ 2,100.00	\$ 2,100.00	0.40	840.00	0.40	\$ 840.00	\$ 840.00	40%	\$ 1,260.00
60	FILTER SOCK, 8"	2,450	LF	\$ 2.00	\$ 4,900.00	125.00	250.00	205.00	\$ 410.00	\$ 410.00	8%	\$ 4,490.00
61	STABILIZED CONSTRUCTION ENTRANCE	100	SY	\$ 15.00	\$ 1,500.00	-	-	-	\$ -	\$ -	-	\$ 1,500.00
62	EROSION CONTROL MULCHING, HYDRO MULCHING	0.45	AC	\$ 3,000.00	\$ 1,350.00	-	-	-	\$ -	\$ -	-	\$ 1,350.00
63	INLET PROTECTION DEVICE, MAINTENANCE, AND REMOVAL	15	EA	\$ 200.00	\$ 3,000.00	2.00	400.00	9.00	\$ 1,800.00	\$ 1,800.00	60%	\$ 1,200.00
64	MODULAR BLOCK RETAINING WALL	250	SF	\$ 50.00	\$ 12,500.00	-	-	-	\$ -	\$ -	-	\$ 12,500.00
65	MOBILIZATION	1	LS	\$ 499,000.00	\$ 499,000.00	0.50	249,500.00	0.50	\$ 249,500.00	\$ 249,500.00	50%	\$ 249,500.00
66	MAINTENANCE OF POSTAL SERVICE	1	LS	\$ 3,000.00	\$ 3,000.00	0.40	1,200.00	0.40	\$ 1,200.00	\$ 1,200.00	40%	\$ 1,800.00
67	MAINTENANCE OF SOLID WASTE COLLECTION	1	LS	\$ 13,200.00	\$ 13,200.00	0.40	5,280.00	0.40	\$ 5,280.00	\$ 5,280.00	40%	\$ 7,920.00
68	TEMPORARY PEDESTRIAN RESIDENTIAL ACCESS	1	LS	\$ 75,000.00	\$ 75,000.00	0.40	30,000.00	0.40	\$ 30,000.00	\$ 30,000.00	40%	\$ 45,000.00
69	CONCRETE WASHOUT	1	LS	\$ 2,600.00	\$ 2,600.00	0.40	1,040.00	0.60	\$ 1,560.00	\$ 1,560.00	60%	\$ 1,040.00
70	CURBSIDE MAILBOX	26	EA	\$ 800.00	\$ 20,800.00	8.50	6,800.00	8.50	\$ 6,800.00	\$ 6,800.00	33%	\$ 14,000.00
Original Contract Totals					\$ 1,922,231.25		\$ 721,697.50		\$ 1,002,028.77	\$ 1,002,028.77	52%	\$ 920,202.48
Change Orders												
					-				-	-		-
					-				-	-		-
Change Order Totals					\$ -				\$ -	\$ -		\$ -
Original Contract and Change Orders												
Project Totals					\$ 1,922,231.25				\$ 1,002,028.77	\$ 1,002,028.77	52%	\$ 920,202.48



**BOLTON
& MENK**

Real People. Real Solutions.

430 E Grand Avenue
Suite 101
Des Moines, IA 50309

Ph: (515) 259-9190
Fax: (515) 233-4430
Bolton-Menk.com

September 28, 2023

Mr. Adam Plagge
City Administrator
City of Windsor Heights, Iowa

RE: 68th Street Reconstruction Pay Request 4

Dear Mr. Plagge:

Submitted for your approval is Pay Request 4 for the above-mentioned project. Pay Request 4 is for a total payment of \$71,147.32. The total value completed to date is \$1,002,028.77, minus 5% retainage of \$50,101.44. Please see Pay Request 4 for a full summary of the items completed that are included in this payment.

Bolton & Menk, Inc. recommends the approval of Pay Application 4. Please let me know if you have any questions.

Sincerely,

Bolton & Menk, Inc.

Justin Ernst, PE
Project Manager

ORDINANCE NO. 23-07

AN ORDINANCE AMENDING CHAPTER 180.06 OF THE CODE OF ORDINANCES FOR THE CITY OF WINDSOR HEIGHTS RELATED TO CONDITIONAL USE PERMIT STANDARDS FOR APPROVAL

WHEREAS, the City of Windsor Heights seeks to promote the public health, safety, general welfare, and aesthetics of the community through consistent, content- neutral and nondiscriminatory code requirements within its city limits; and

WHEREAS, the Planning and Zoning Commission reviewed Chapter 180.06 and proposed changes and recommended approval of the same; and

WHEREAS, the City Council of the City of Windsor Heights do hereby find and declare that the amendments to Chapter 180.06 are necessary.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF WINDSOR HEIGHTS, POLK COUNTY, IOWA:

SECTION 1. Purpose. The purpose of this ordinance is to amend Chapters 180.06 as follows.

SECTION 2. Amended. 180.06 STANDARDS FOR APPROVAL.

1. The Board of Adjustment shall review the proposed development for conformance to the following Standards of Approval:

A. Compatibility. The proposed buildings or use shall be constructed, arranged and operated so as to be compatible with the character of the zoning district and immediate vicinity, and not to interfere with the development and use of adjacent property in accordance with the applicable district regulations. The proposed development shall not be unsightly, obnoxious or offensive in appearance to abutting or nearby properties.

B. Transition. The development shall provide for a suitable transition, and if necessary, buffer between the proposed buildings or use and surrounding properties.

C. Traffic. The development shall provide for adequate ingress and egress, with particular attention to vehicular and pedestrian safety and convenience, traffic flow and control, and emergency access.

D. Parking and Loading. The development shall provide all off-street parking and loading areas as required by this ordinance, and adequate service entrances and areas.

Appropriate screening shall be provided around parking and service areas to minimize visual impacts, glare from headlights, noise, fumes or other detrimental impacts.

E. Signs and Lighting. Permitted signage shall be in accordance with the applicable district regulations and shall be compatible with the immediate vicinity. Exterior lighting, if provided, shall be with consideration given to glare, traffic safety and compatibility with property in the immediate vicinity.

F. Environmental Protection. The development shall be planned and operated in such a manner that will safeguard environmental and visual resources. The development shall not generate excessive noise, vibration, dust, smoke, fumes, odor, glare, groundwater pollution or other undesirable, hazardous or nuisance conditions, including weeds.

2. The request shall be approved if the Board of Adjustment finds that the proposed development meets all Standards of Approval.

3. The request shall be denied if the Board of Adjustment finds a strong probability that any of the following with regards to the proposed development:

- a. Not adequately safeguard the health, safety and general welfare of persons residing or working in adjoining or surrounding property, or
- b. Impair an adequate supply (including quality) of light and air to surrounding property, or
- c. Unduly increase congestion in the roads, or the hazard from fire, flood or similar dangers, or
- d. Diminish or impair established property values on adjoining or surrounding property, or
- e. Not be in accord with the intent, purpose and spirit of the zoning ordinance or comprehensive plan.

SECTION 3. Repealer. All ordinances or parts of ordinances in conflict with the provisions of this ordinance are hereby repealed.

SECTION 4. Severability. If any section, provision, or part of this ordinance shall be adjudged invalid or unconstitutional, such adjudication shall not affect the validity of the ordinance as a whole or any section, provision or part thereof not adjudged invalid or unconstitutional.

SECTION 5. Effective Date. This ordinance shall be effective after the final passage, approval and publication as provided by law.

Passed and Approved this Day of 2023.

1st Reading:

2nd Reading:

3rd Reading:

Publish Date:

Mike Jones, Mayor

(SEAL)

ATTEST:

Adam Strait, City Clerk



To: Mayor and City Council
From: Adam Plagge, City Administrator
Date: September 29, 2023
Subject: Colby Park Bid Package

GENERAL INFORMATION

The Windsor Heights Master Parks Plan, completed September 2020 by Bolton and Menk, was a comprehensive examination of the parks within City limits, as well as nearby amenities. Part of that plan included a survey that was distributed community wide on a number of different platforms. When asked “What would you like to see changed, added or improved at Colby Park?” the top community-wide responses were:

1. Splash Pad
2. More events (food trucks, exercise classes, live music, etc.)
3. More shade and seating
4. Updated playground equipment

The result of the study and community discussions was a three-phase project, with Phase 1 being presented to Council in April of 2023. This phase included the creation of new tennis, pickleball and basketball courts, parking improvements and accessibility improvements for the Community Events Center. The sole bid that was presented to Council was 40% over engineers’ estimate and was therefore rejected. In May, the Ad-Hoc Committee met again to discuss next steps. It was thereafter proposed, without objection from the Committee, to pursue Phase 2 of the project.

This Resolution authorizes the attached bid documents for release on what was previously referred to as Phase II of the Colby Park Improvements. Proposed improvements to Colby Park include the demolition of an existing 1,500 SY tennis court and lighting. Construction shall consist of a 8,500 SF multi-structure accessible playground consisting of poured-in-place rubber surfacing, synthetic turf mounds, iconic tower structures, accessible ramps, and seating areas. The project also includes construction of 1,800 SF drain-to-waste splashpad system with multiple spray features and seating areas with shelters. The project includes over 3,000 SY of various pavement types, multiple structural concrete seat walls and retaining walls, utility improvements, lighting improvements, site restoration and other miscellaneous improvements throughout.

A public hearing to consider sealed bids will occur November 6th at 6PM at the next City Council meeting. The engineers estimated cost for the base project is \$2,880,000. There is an additional estimated \$231,000 of alternatives that the City Council may determine whether to include as part of the project at the time of the bid awarding. Inclusion of these alternatives shall depend on overall project cost and Council prioritization. Substantial completion of the improvements is required on or before September 30, 2024, with seeding and plantings to be installed by the end of 2024.

Additional items of note:

If the project proceeds, The C.E.C. is anticipated to remain available for rent throughout the duration of the project. Renters will be advised the park area will be under construction and access from the roundabout to the C.E.C. may be adjusted at times. The park parking lot and amphitheater are largely unimpacted by this phase of construction, however, the Events Committee & Foundation will need to discuss how to adjust any events for 2024 due to adjoining construction.

FINANCIAL INFORMATION

The current engineer's cost estimate for the Phase 2 base bid is \$2,880,000. There are five bid alternants beyond the base package that City Council will consider after bids are received. These alternatives have the following estimated costs:

Alt A (additional parking):	\$30,000
Alt B (splashpad overhead shade structures):	\$135,000
Alt C (cast stone seat walls in lieu of PCC):	\$36,000
Alt D (extend irrigation to CEC landscaping):	\$18,000
<u>Alt E (extend fence along the north parking lot of Public Works):</u>	<u>\$10,000</u>
Estimated total with bid alternants	\$3,102,000

Phase 2 is to be funded through existing \$1,088,000 2022-2023 LOST revenue, the remaining \$1,062,500 ATE dollars, an \$20,000 Prairie Meadows Grant and the balance through projected available 2023-2024 LOST revenue. Grants for Phase 2 have been pursued and additional grants will continue to be pursued as opportunities arise.

ATTACHMENTS

1. Project Schedule
2. Bid Package
3. Presentation from Bolton & Menk
4. Resolution No. 2023-52



2023 COLBY PARK IMPROVEMENTS

PRESENTATION OF FINAL PLANS

CITY COUNCIL MEETING
OCTOBER 2, 2023



WINDSOR
HEIGHTS
the heart of it all



BOLTON
& MENK

PROJECT TEAM

CITY ADMINISTRATOR

ADAM PLAGGE

CITY MAYOR

MIKE JONES

AD HOC PARK PROJECT COMMITTEE

LAUREN CAMPBELL, CITY COUNCIL

CELESTE EGGER, RESIDENT

THREASE HARMS, CITY COUNCIL

GUNNAR OLSON, RESIDENT

GEOFF WOOD, RESIDENT

BOLTON & MENK

CASEY BYERS, PLA, ASLA

NATE WEITL, PLA, ASLA

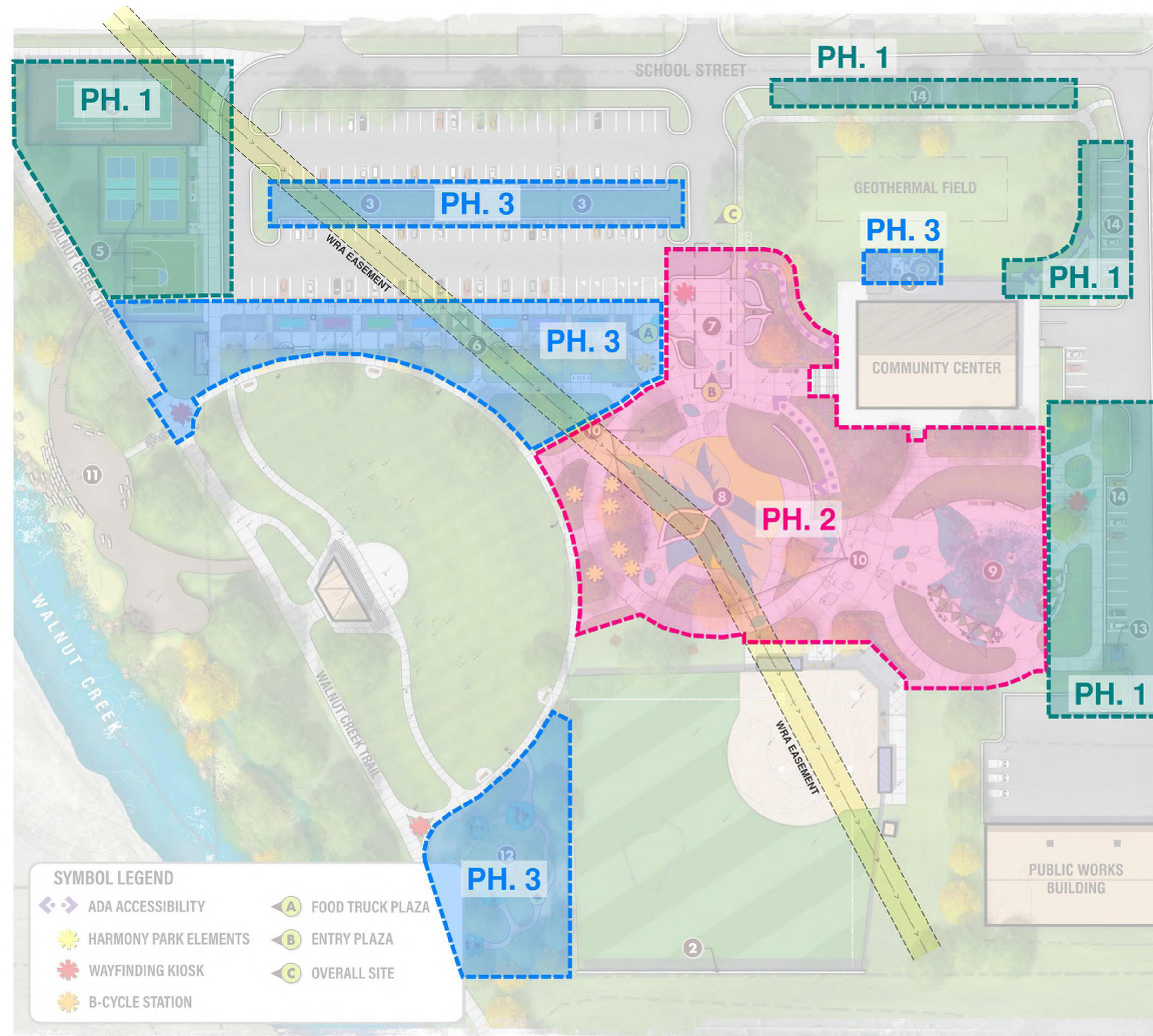
NATALIE JENSEN, ASLA

TANNER NIELSEN, EIT

CITY ENGINEER

JUSTIN ERNST, PE

OCTOBER 2023 | COLBY PARK



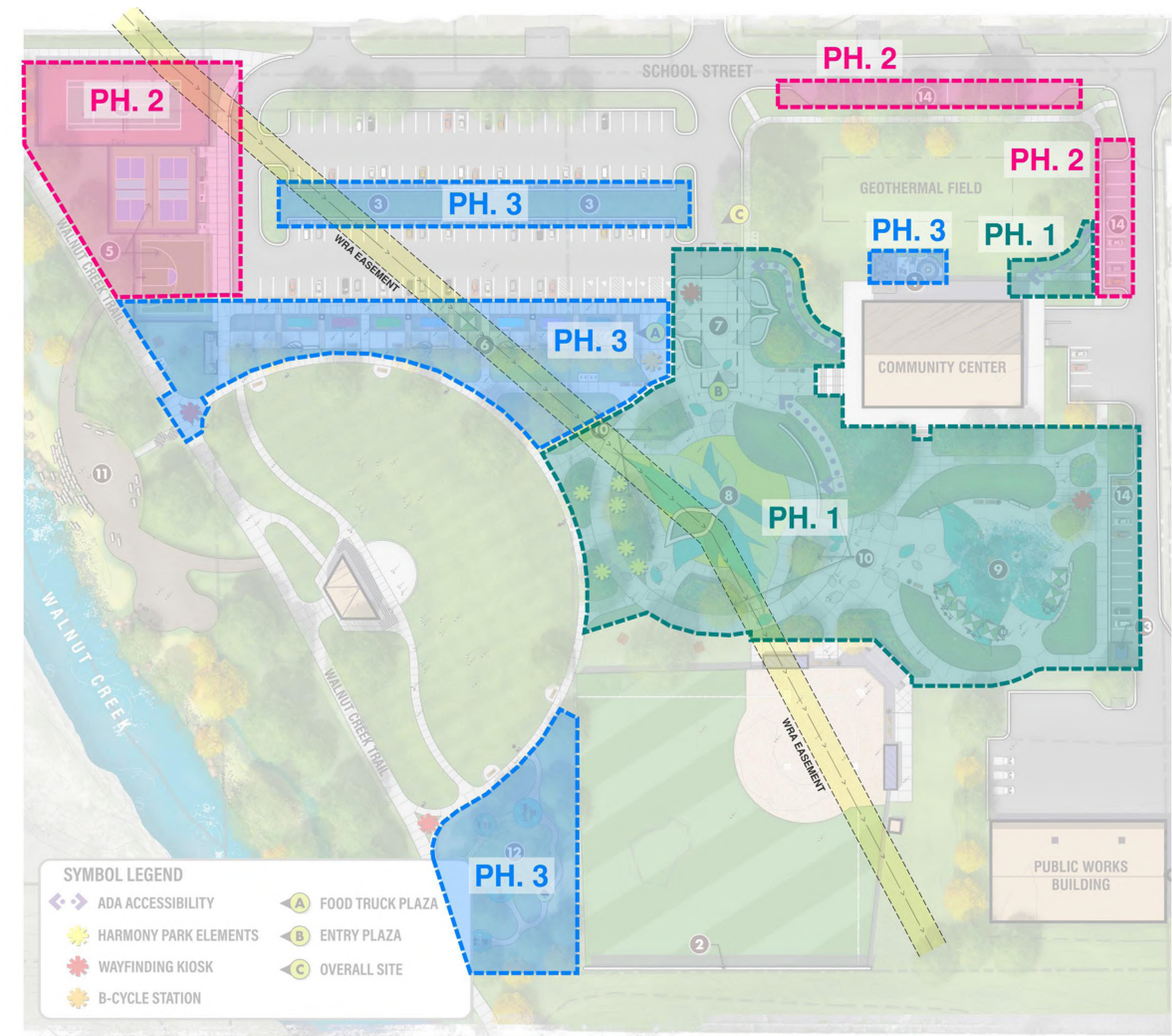
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OVERALL CONCEPT PLAN - PHASING DIAGRAM (OCTOBER 2023)

OCTOBER 2023 | COLBY PARK



0' 40' 80'



WINDSOR
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OVERALL CONCEPT PLAN

OCTOBER 2023 | COLBY PARK



- LEGEND**
 - 1 NEW PLAZA/EVENT SPACE ON NORTH SIDE OF COMMUNITY CENTER
 - 2 MURAL WALL (FUTURE IMPROVEMENT)
 - 3 BIOCELL IMPROVEMENTS IN PARKING LOT
 - 4 TENNIS COURT AND BASKETBALL
 - 5 PICKLEBALL COURTS
 - 6 FOOD TRUCK PLAZA/ARRIVAL PROMENADE
 - 7 REMOVE TRAFFIC CIRCLE/NEW PLAZA ENTRY
 - 8 ICONIC THEMED PLAYGROUND
 - 9 SPLASHPAD
 - 10 RELOCATION OF "KEEP WINDSOR HEIGHTS BEAUTIFUL" GARDENS
 - 11 FUTURE WATER TRAILS PLAN IMPROVEMENTS
 - 12 FITNESS CIRCUIT
 - 13 RELOCATED RECYCLING FACILITIES
 - 14 NEW PARKING

- SYMBOL LEGEND**
 - ADA ACCESSIBILITY
 - HARMONY PARK ELEMENTS
 - WAYFINDING KIOSK
 - B-CYCLE STATION
 - FOOD TRUCK PLAZA
 - OVERALL SITE



0' 40' 80'



KEY PLAN ELEMENTS

- **PLAYGROUND & SPLASHPAD**
- **ACCESSIBILITY**
- **MULTIPLE SEATING TYPES**
- **SHADE**
- **REUSE OF EXISTING FURNISHINGS**
- **SIGNAGE**
- **SPLASH PAD SECURITY AND MAINTENANCE**
- **WRA EASEMENT**

PLAYGROUND VISUALIZATION

OCTOBER 2023 | COLBY PARK



WINDSOR
HEIGHTS
the heart of it all



BOLTON
& MENK

PLAYGROUND VISUALIZATION

OCTOBER 2023 | COLBY PARK



WINDSOR
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& MENK

PLAYGROUND VISUALIZATION

OCTOBER 2023 | COLBY PARK



SPLASHPAD VISUALIZATION

OCTOBER 2023 | COLBY PARK



WINDSOR
HEIGHTS
the heart of it all



BOLTON
& MENK

SPLASHPAD VISUALIZATION

OCTOBER 2023 | COLBY PARK



SPLASHPAD VISUALIZATION

OCTOBER 2023 | COLBY PARK



OVERVIEW OF COSTS

- **BASE BID ESTIMATE:** **\$2,880,000**
- **BID ALTERNATES:** **\$231,000**
 - **A - EXPAND EXISTING PARKING STALLS ON EAST SIDE OF SITE.** **\$30,000**
 - **B - ADD THREE OVERHEAD STRUCTURES AROUND THE SPLASHPAD.** **\$135,000**
 - **C - UPGRADE CONCRETE SEATWALL TO CAST STONE.** **\$36,000**
 - **D - EXPAND EXISTING IRRIGATION SYSTEM INTO PROJECT AREA.** **\$18,000**
 - **E - ADD CHAIN LINK FENCE AT PUBLIC WORKS.** **\$12,000**

SCHEDULE

- SEPTEMBER 28 - BID PACKAGE TO CITY
- OCTOBER 3 - NOTICE TO BIDDERS
- OCTOBER 31 - BID OPENING
- NOVEMBER 2023 - PRECONSTRUCTION MEETING
- APRIL 2024 - CONSTRUCTION BEGINS
- NOVEMBER 2024 - CONSTRUCTION SUBSTANTIALLY COMPLETE

CONSTRUCTION OPERATIONS

- COMMUNITY EVENTS
- USE OF THE COMMUNITY CENTER DURING CONSTRUCTION
- CONSTRUCTION SEQUENCING
- CONSTRUCTION SAFETY

2023 Colby Park Improvements Project Schedule

September 27, 2023



Design Timeline

- ☐ **Design Package (September 29, 2023)**



Bidding Timeline

- ☐ **Bid Package to City (September 28, 2023)**
 - Signed Project Manual and Plans assembled by Bolton & Menk
 - Notice to Bidders assembled by Bolton & Menk
 - Public Hearing Notice assembled by Bolton & Menk
 - Resolution setting Public Hearing by City staff
- ☐ **Council Meeting (October 2, 2023)**
 - Set Public Hearing date and time
- ☐ **Notice to Bidders (October 3, 2023)**
 - Published at least once, not less than 13 or more than 45 days, before date for filing bids
 - *Bolton & Menk to advertise on QuestCDN, Master Builders & Iowa League of Cities*
 - *City to advertise on City website*
 - *City to advertise in local newspaper/publication (if required by City)*
- ☐ **Notice of Public Hearing (Week(s) of October 23, 2023)**
 - City to publish Notice at least once, not less than 4 or more than 20 days, prior to Public Hearing
- ☐ **Bid Opening (October 31, 2023 @ 10:00 am in the office of the City Clerk)**
- ☐ **Bid Award Recommendation to City (November 2, 2023)**
 - Bolton & Menk to provide Letter of Recommendation to City
 - Bolton & Menk to provide Bid Tabulation to City
 - Bolton & Menk to return all bids including bonds to City

- City to return the checks or bidder's bonds of unsuccessful bidders to the bidders as soon as the successful bidder is determined or within 30 days, whichever is sooner.

☐ **Council Meeting (November 6, 2023)**

- Public Hearing for project
- Council adopts resolution approving plans, specifications, proposed form of contract and estimated total cost for the project.

☐ **Contracts Executed (November 2023)**

- Bolton & Menk routes to Contractor
- Contractor signs and returns to Bolton & Menk with attachments
- Bolton & Menk to review and routes to City for signatures
- City obtains signatures and routes copies to Contractor and Bolton & Menk



Construction Timeline

- ☐ **Preconstruction Meeting (November 2023)**
- ☐ **Estimated Construction Begins (April 2024)**
- ☐ **Construction Substantially Complete (September 30, 2024)**

PROJECT MANUAL

2023 Colby Park Improvements

City of Windsor Heights

Windsor Heights, IA



Real People. Real Solutions.

Bolton-Menk.com

SECTION 00005 – CERTIFICATION

PROJECT MANUAL

for

2023 Colby Park Improvements

City of Windsor Heights

Windsor Heights, IA



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: _____

Justin Ernst

License No. 23753

My renewal date is December 31, 2023

Pages or sheets covered by this seal:

ALL GENERAL CONDITIONS AND FRONT END



I hereby certify that the portion of this technical submission described below was prepared by me or under my direct supervision and responsible charge. I am a duly licensed Professional Landscape Architect under the laws of the State of Iowa.

Date: _____

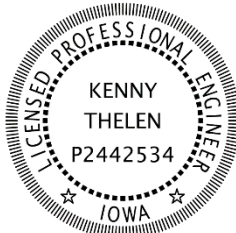
Casey Byers

License No. 00637

My renewal date is June 30, 2025

Pages or sheets covered by this seal:

TECHNICAL SPECIFICATIONS: TS1 - TS14



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: _____

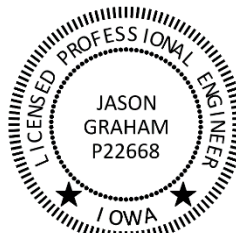
Kenny Thelen

License No. P2442534

My renewal date is December 31, 2023

Pages or sheets covered by this seal:

TECHNICAL SPECIFICATIONS: DIVISION 26



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: _____

Jason Graham

License No. P22668

My renewal date is December 31, 2024

Pages or sheets covered by this seal:

TECHNICAL SPECIFICATIONS:

SECTION 00010 - TABLE OF CONTENTS

2023 Colby Park Improvements City of Windsor Heights

CONTRACT DOCUMENTS:

PROJECT MANUAL:

Introductory Information, Bidding Requirements, Contract Forms and Conditions of Contract

- 00005 - CERTIFICATION PAGE
- 00010 - TABLE OF CONTENTS
- 00100 - NOTICE TO BIDDERS
- 00110 - NOTICE OF PUBLIC HEARING
- 00200 - INSTRUCTIONS TO BIDDERS
- 00410 - PROPOSAL
- 00410 – PROPOSAL ATTACHMENT: BID ITEMS
- 00420 - BID BOND
- 00500 - CONTRACT
- 00610 - PERFORMANCE, PAYMENT AND MAINTENANCE BOND
- 00800 - SPECIAL PROVISIONS

Technical Specifications

- TS1 – SHELTERS
- TS2 – SPLASH PADS
- TS3 – PAVING SPECIALTIES
- TS4 – CONCRETE FORMWORK AND LINERS
- TS5 – CASE STONE
- TS6 – HANDRAILS & RAILINGS
- TS7 – HIGH PERFORMANCE COATINGS
- TS8 – IRRIGATION SYSTEM
- TS9 – STONE BLOCK MASONRY
- TS10 – FALL ATTENUATION SURFACING, POUR-IN-PLACE
- TS11 – FALL ATTENUATION SURFACING, SYNTHETIC TURF
- TS12 – NON-SKID RUBBERIZED COATING
- TS13 – PLANTINGS
- TS14 – CHAIN LINK FENCING

DIVISION 26

- 26 05 00 – COMMON WORK RESULTS
- 26 05 02 – DEMOLITION
- 26 05 04 – CLEANING AND TESTING
- 26 05 19 – LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLE
- 26 05 26 – GROUNDING
- 26 05 33 – RACEWAYS AND BOXES
- 26 05 53 – IDENTIFICATION
- 26 27 02 – EQUIPMENT WIRING
- 26 27 26 – WIRING DEVICES
- 26 27 30 – CONTACTORS
- 26 56 29 – SITE LIGHTING

DRAWINGS (UNDER SEPARATE COVER):

45 sheets numbered A.01 through T.03, inclusive, dated September 19, 2023, and with each sheet bearing the following general title:

2023 Colby Park Improvements
City of Windsor Heights

**This project is based on
SUDAS STANDARD SPECIFICATIONS, 2023 EDITION
unless modified herein.**

******END OF SECTION******

NOTICE TO BIDDERS

2023 Colby Park Improvements
City of Windsor Heights
Windsor Heights, IA

Time and Place for Filing Sealed Proposals. Sealed bids for the work comprising the repair & improvement as stated below must be filed before 10:00 A.M. on October 31, 2023, in the office of the City Clerk, 1145 66th Street, Suite 1, Windsor Heights, IA.

Time and Place Sealed Proposals Will be Opened and Considered. Sealed proposals will be opened and bids tabulated at 10:00 A.M. on October 31, 2023, in the office of the City Clerk, City of Windsor Heights, 1145 66th Street, Suite 1, Windsor Heights, IA for consideration by the City of Windsor Heights at its meeting at 6:00 P.M. on November 6, 2023. The City of Windsor Heights reserves the right to reject any and all bids.

Time for Commencement and Completion of Work. Work on the improvement shall commence upon approval of the contract by the Council and as stated in the Notice to Proceed. All work under the Contract must be substantially complete on or before September 30, 2024. **All items necessary for the complete installation and function of the "DRINKING FOUNTAIN" shall be completed by May 2024.** All seeding and plantings to be installed by the end of the 2024 spring SUDAS seeding and planting windows. Damages in the amount of \$500.00 per day will be assessed for each day the work remains incomplete.

Bid Security. Each bidder shall accompany its bid with bid security, as defined in Section 468.35 of the Iowa Code in the amount equal to 5 percent of the total amount of the bid.

Contract Documents. Copies of the project documents are available for a price of \$25 per paper set. This fee is refundable, provided the plans and specifications are returned complete and in good usable condition, and they are returned within fourteen (14) calendar days after the award of the project. Please make your check payable to Bolton & Menk, Inc. and send it to 430 East Grand Ave., Suite 101, Des Moines, IA 50309. Complete digital project bidding documents are available at www.bolton-menk.com or www.questcdn.com. You may view the digital plan documents for free by entering Quest project # 8606110 on the website's Project Search page. Prospective bidders must be on the planholders list through QuestCDN for bids to be accepted. Please contact QuestCDN.com at 952-233-1632 or info@questcdn.com for assistance in free membership registration, viewing, downloading, and working with this digital project information.

Preference of Products and Labor. Preference shall be given to domestic construction materials by the contractor, subcontractors, material, workforce, and suppliers in performance of the contract. By virtue of statutory authority, further 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. Failure to submit a fully completed Bidder Status Form with the bid may result in the bid being deemed nonresponsive and rejected.

Sales Tax Exemption Certificates. The bidder shall not include sales tax in the bid. The City of Windsor Heights will distribute tax exemption certificates and authorization letters to the Contractor and all subcontractors who are identified. The Contractor and subcontractor may make copies of the tax exemption certificates and provide a copy to each supplier providing construction materials. These tax exemption certificates and authorization letters are applicable only for this specific project under the Contract.

PROJECT DESCRIPTION: Improvements to Colby Park in Windsor Heights including the demolition of an existing 1,500 SY tennis court and lighting. Includes construction of a 8,500 SF multi-structure accessible playground consisting of poured-in-place rubber surfacing, synthetic turf mounds, iconic tower structures, accessible ramps, and seating areas. Also includes construction of 1,800 SF drain-to-waste splashpad system with multiple spray features and seating areas with shelters. The project includes over 3,000 SY of various pavement types, multiple structural concrete seatwalls and retaining walls, utility improvements, lighting improvements, site restoration and other miscellaneous improvements throughout.

This Notice is given by authority of the City of Windsor Heights

Adam Strait
City Clerk

NOTICE OF PUBLIC HEARING

2023 Colby Park Improvements
City of Windsor Heights
Windsor Heights, IA

Public Hearing on Proposed Contract Documents and Estimated Costs for Repair or Improvement. A public hearing will be held by the City of Windsor Heights on the proposed contract documents (plans, specifications and form of contract) and estimated cost for the improvement at its meeting at 6:00 P.M. on November 6, 2023, at 1133 66th Street, Windsor Heights, IA 50324.

PROJECT DESCRIPTION: Improvements to Colby Park in Windsor Heights including the demolition of an existing 1,500 SY tennis court and lighting. Includes construction of a 8,500 SF multi-structure accessible playground consisting of poured-in-place rubber surfacing, synthetic turf mounds, iconic tower structures, accessible ramps, and seating areas. Also includes construction of 1,800 SF drain-to-waste splashpad system with multiple spray features and seating areas with shelters. The project includes over 3,000 SY of various pavement types, multiple structural concrete seatwalls and retaining walls, utility improvements, lighting improvements, site restoration and other miscellaneous improvements throughout.

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

INSTRUCTIONS TO BIDDERS

2023 Colby Park Improvements
City of Windsor Heights
Windsor Heights, IA

The work comprising the above referenced project shall be constructed in accordance with the SUDAS Standard Specifications, 2023 Edition and as further modified by the supplemental specifications and special provisions included in the contract documents. The terms used in the contract version of the documents are defined in said Standard Specifications. Before submitting a bid, please review the requirements of Division One, General Provisions and Covenants. Please be certain that all documents have been completed properly as failure to complete and sign all documents and to comply with the requirements listed below can cause a submitted bid not to be read.

ARTICLE 1 - BID SECURITY

- 1.01 The bid security must be in the minimum amount of 5% of the total bid amount including all add alternates (do not deduct the amount of deduct alternates). Bid security shall be in the form of a cashier's check, a certified check; or drawn on a FDIC insured bank in Iowa; or a certified check drawn on a FDIC insured bank chartered under the laws of the United States; or a certified share draft drawn on a credit union in Iowa or chartered under the laws of the United States; or a bid bond executed by a corporation authorized to contract as a surety in Iowa or satisfactory to the City of Windsor Heights, hereinafter called the "Jurisdiction".
- 1.02 The bid bond must be submitted on the enclosed Bid Bond form as no other bid bond forms are acceptable. All signatures on the bid bond must be original signatures in ink; electronic, copies, or facsimile (fax) of any signature on the bid bond is not acceptable.
- 1.03 Bid security other than said bid bond shall be in accordance with Chapter 26 of the Iowa Code.

ARTICLE 2 - SUBMISSION OF THE PROPOSAL AND IDENTITY OF BIDDER

- 2.01 For this project the City will be accepting both paper bids and online electronic bids through QuestCDN. To access the electronic bid form, download the project documents and click the online bidding button at the top of the advertisement. Prospective bidders must be on the planholders list through QuestCDN for bids to be accepted.
- 2.02 With each paper copy of the Bidding Documents, the proposal shall be sealed in an envelope, properly identified as the Proposal with the project title and the name and address of the bidder. The bid security shall be sealed in a separate envelope identified as the "Bid Security" and attached to the outside of the bid proposal envelope. The Proposal and Bid security shall be deposited with the Jurisdiction at or before the time and at the place provided in the Notice to Bidders. It is the sole responsibility of the bidder to see that its proposal is delivered to the Jurisdiction prior to the time for opening bids along with the appropriate bid security. Any proposal received after the scheduled time for the receiving of proposals will be returned to the bidder unopened and will not be considered.
- 2.03 The following documents shall be completed, signed and returned in the Proposal envelope. The bid cannot be read if any of these documents are omitted from the Proposal envelope.
 - A. PROPOSAL – Complete each of the following parts:
 - Part B – Acknowledgment of Addenda, if any have been issued;
 - Part C – Bid Items, Quantities and Prices

- Part F – Additional Requirements;

- Part G – Identity of Bidder;

- 2.04 Sign the proposal. The signature on the proposal and all proposal attachments must be an original signature in ink signed by the same individual who is the Company Owner or an authorized Officer of the Company; copies or facsimile of any signature will not be accepted.
- 2.05 Documents must be submitted as printed or through QuestCDN. No alterations, additions, or deletions are permitted. If the Bidder notes a requirement in the contract documents which the Bidder believes will require a conditioned or unsolicited alternate bid, the Bidder must immediately notify the Engineer in writing. The Engineer will issue any necessary interpretation by an addendum.
- 2.06 Division 1 - General Provisions and Covenants of the 2023 SUDAS Standard Specifications is modified as follows:
- A. Section 1020.1.09B, Unit Price Attachment.
- A computer generated unit price attachment may be submitted by the Bidder as specified by this Section.

ARTICLE 3 - PROSECUTION AND PROGRESS OF THE WORK

- 3.01 The work is located in the City of Windsor Heights.
- Work on the improvement shall commence upon approval of the contract by the Council and as stated in the Notice to Proceed. All work under the Contract must be substantially complete on or before September 30, 2024 with seeding and plantings to be installed by the end of the 2024 spring SUDAS seeding and planting windows. Damages in the amount of \$500.00 per day will be assessed for each day the work remains incomplete.
- 3.02 Community Events.
- 3.03 Each successful bidder will be required to furnish a corporate surety bond in an amount equal to 100% of its contract price. Said bond shall be issued by a responsible surety approved by City of Windsor Heights and shall guarantee the faithful performance of the contract, the terms and conditions therein contained, the prompt payment of all material and labor, protect and save harmless City of Windsor Heights from claims and damages of any kind caused by the operations of the contract, and shall also guarantee the maintenance of the improvement caused by failures in materials and construction for a period of four years from and after acceptance of the work.
- 3.04 The City of Windsor Heights, in accordance with Title VI of the Civil Rights Act of 1964, 78 Stat. 252, 42U.S.C. 2000d to 2000d-4 and title 49 Code of Federal Regulations, Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Nondiscrimination in Federally-assisted programs of the Department of Transportation issued pursuant to such Act, hereby notifies all bidders that it will affirmatively ensure that with any contract entered into pursuant to this advertisement, minority business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award.

ARTICLE 4 - PREFERENCE OF PRODUCTS AND LABOR

- 4.01 In accordance with Iowa statutes, a resident bidder shall be allowed preference against a nonresident bidder from a state or foreign country provided that state or foreign country gives or requires any preference to bidders from that state or foreign country. This includes, but is 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 of 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.

ARTICLE 5 - TAXES

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

******END OF SECTION******

SECTION 00410 - PROPOSAL

2023 Colby Park Improvements
City of Windsor Heights
Windsor Heights, IA

PROPOSAL: PART A – SCOPE

The City of Windsor Heights, hereinafter called the "Jurisdiction", has need of a qualified contractor to complete the work comprising the below referenced repair or improvement. The undersigned Bidder hereby proposes to complete the work comprising the below referenced repair or improvement as specified in the contract documents, which are officially on file with the Jurisdiction, in the office of the Mayor, at the prices hereinafter provided in Part C of the Proposal, for the following described improvements:

PROJECT DESCRIPTION: Improvements to Colby Park in Windsor Heights including the demolition of an existing 1,500 SY tennis court and lighting. Includes construction of a 8,500 SF multi-structure accessible playground consisting of poured-in-place rubber surfacing, synthetic turf mounds, iconic tower structures, accessible ramps, and seating areas. Also includes construction of 1,800 SF drain-to-waste splashpad system with multiple spray features and seating areas with shelters. The project includes over 3,000 SY of various pavement types, multiple structural concrete seatwalls and retaining walls, utility improvements, lighting improvements, site restoration and other miscellaneous improvements throughout.

PROPOSAL: PART B – ACKNOWLEDGMENT OF ADDENDA

The Bidder hereby acknowledges that all addenda become a part of the contract documents when issued and that each such addendum has been received and utilized in the preparation of this bid. The Bidder hereby acknowledges receipt of the following addenda by inserting the number of each addendum in the blanks below:

ADDENDUM NUMBER _____

ADDENDUM NUMBER _____

ADDENDUM NUMBER _____

ADDENDUM NUMBER _____

and certifies that said addenda were utilized in the preparation of this bid.

PROPOSAL: PART C – BID ITEMS AND QUANTITIES

UNIT BID PRICE CONTRACTS: The Bidder must provide the Unit Bid Price, the Total Bid Price, any Alternate Prices, and the Total Construction Costs on the Proposal Attachment: Part C – Bid Items and Quantities. In case of discrepancy, the Unit Bid Price governs. The quantities shown on the Proposal Attachment: Part C – Bid Items and Quantities are approximate only, but are considered sufficiently adequate for the purpose of comparing bids. The Total Construction Cost shall be used only for the comparison of bids. The jurisdiction shall only use the Total Construction Cost for determining the sufficiency of the bid security.

BASE BID CONTRACTS: The Bidder must provide any Bid Prices, any Alternate Prices, and the Total of the Base Bid plus any Add-Alternates on the Proposal Attachment: Part C – Bid Items and Quantities. The Jurisdiction shall only use the Total Construction Cost for comparison of bids. The Total Construction Cost, including any Add-Alternates shall be used for determining the sufficiency of the bid security.

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>AMOUNT</u>
2023 Colby Park Improvements		
	TOTAL BASE BID	LUMP SUM \$ _____
Bid Alternate A:		
	TOTAL BID ALTERNATE A	LUMP SUM \$ _____
Bid Alternate B:		
	TOTAL BID ALTERNATE B	LUMP SUM \$ _____
Bid Alternate C:		
	TOTAL BID ALTERNATE C	LUMP SUM \$ _____
Bid Alternate D:		
	TOTAL BID ALTERNATE D	LUMP SUM \$ _____
Bid Alternate E:		
	TOTAL BID ALTERNATE E	LUMP SUM \$ _____
	TOTAL – BASE BID PLUS BID ALTERNATES A, B, C, D, AND E	\$ _____

PROPOSAL: PART D – GENERAL

The Bidder hereby acknowledges that the Jurisdiction, in advertising for public bids for this project reserves the right to:

1. Reject any or all bids. Award of the contract, if any, to be to the lowest responsible, responsive bidder; and
2. Reject any or all alternates in determining the items to be included in the contract. Designation of the lowest responsible, responsive bidder to be based on comparison of the total bid only, not including any alternates; and
3. Make such alterations in the contract documents or in the proposal quantities as it determines necessary in accordance with the contract documents after execution of the contract. Such alterations shall not be considered a waiver of any conditions of the contract documents, and shall not invalidate any of the provisions thereof; and

The Bidder hereby agrees to:

1. Enter into a contract, if this proposal is selected, in the form approved by the Jurisdiction, provide proof of registration with the Iowa Division of Labor in accordance with Chapter 91C of the Iowa Code, and furnish a performance, maintenance, and payment bond; and
2. Forfeit bid security, not as a penalty but as liquidated damages, upon failure to enter into such contract and/or to furnish said bond; and
3. Commence the work upon written Notice to Proceed; and
4. Substantially complete the work on or before September 30, 2024 with seeding and plantings to be installed by the end of the 2024 spring SUDAS seeding and planting windows: and
5. Pay liquidated damages for noncompliance with said completion provisions at the rate of Five hundred dollars (\$500.00) for each calendar day thereafter that the work remains incomplete.

PROPOSAL: PART E – NON-COLLUSION AFFIDAVIT

The Bidder hereby certifies:

1. That this proposal is not affected by, contingent on, or dependent on any other proposal submitted for any improvement with the Jurisdiction; and
2. That no individual employed by the Bidder has employed any person to solicit or procure the work on this project, nor will any employee of the Bidder make any payment or agreement for payment of any compensation in connection with the procurement of this project; and
3. That no part of the bid price received by the Bidder was or will be paid to any person, corporation, firm, association, or other organization for soliciting the bid, other than the payment of their normal compensation to persons regularly employed by the Bidder whose services in connection with the construction of the project were in the regular course of their duties for the Bidder; and
4. That this proposal is genuine and not collusive or sham; that the Bidder has not colluded, conspired, connived, or agreed, directly or indirectly, with any bidder or person, to submit a sham bid or to refrain from bidding; and
5. That the bid has not in any manner, directly or indirectly, sought, by agreement or collusion, or communication or conference, with any person, to fix the bid price of the Bidder or of any other bidder; and
6. That all statements in this proposal are true; and
7. That the individual(s) executing this proposal have the authority to execute this proposal on behalf of the Bidder.

PROPOSAL: PART F – ADDITIONAL REQUIREMENTS

The Bidder hereby agrees to comply with the additional requirements listed below which are included in this proposal and identified as proposal attachments:

ITEM NO.	DESCRIPTION OF ATTACHMENT
1.	None

PROPOSAL: PART G - IDENTITY OF BIDDER

The Bidder shall indicate whether the bid is submitted by a/an:

☐ Individual,
Sole Proprietorship

Bidder

☐ Partnership

Signature

☐ Corporation

By

Name (Print/Type)

☐ Limited Liability Company

Title

☐ Joint-venture; all parties must join-in and
execute all documents

Street Address

☐ Other

City, State, Zip Code

The bidder shall enter its Public
Registration Number _____ - _____
issued by the Iowa Commissioner of Labor
Pursuant Section 91C.5 of the Iowa Code.

Telephone Number

**Type or print the name and title of the company's
owner, president, CEO, etc. if a different person
than entered above**

Failure to provide said Registration
Number shall result in the bid being read
under advisement. A contract will not be
executed until the Contractor is registered.

Name

Title

**NOTE: The signature on this proposal must be an original signature in ink; copies, facsimiles, or
electronic signatures will not be accepted.**

All bidders must submit the following completed form to the governmental body requesting bids per
875 Iowa Administrative Code Chapter 156.

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 non-resident 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: _____
(mm/dd/yyyy) City, State, Zip: _____

Dates: _____ to _____ Address: _____
(mm/dd/yyyy) City, State, Zip: _____

Dates: _____ to _____ Address: _____
(mm/dd/yyyy) City, State, Zip: _____

You may attach additional sheet(s) if needed.

To be completed by non-resident bidders

Part C

1. Name of home state or foreign country reported to the Iowa Secretary of State: _____
2. Does your company's home state or foreign country offer preferences to bidders who are residents? ☐ Yes ☐ No
3. If you answered "Yes" to question 2, identify each preference offered by your company's home state or foreign country and the appropriate legal citation.

You may attach additional sheet(s) if needed.

To be completed by all bidders

Part D

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

Firm Name: _____
Signature: _____ Date: _____

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.

2023 Colby Park Improvements
City of Windsor Heights
Windsor Heights, IA

PROPOSAL ATTACHMENT: PART C – BID ITEMS AND QUANTITIES

This is a UNIT BID PRICE CONTRACT. The bidder must provide the Unit Bid Price, the total Bid Price, any alternate price(s), and the Total Base Bid Amount plus any add alternates; in case of discrepancy, the Unit Bid Price governs. ONLY ONE SCHEDULE OF UNIT PRICES from each BIDDER shall be considered for the project. When more than one SCHEDULE OF UNIT PRICES from an individual BIDDER is received, only the last submittal meeting the bidding requirements shall be considered and all other copies shall be left unopened. The Quantities shown on the Proposal Attachment: Part C – Bid Items and quantities are approximate only but are considered adequate for the purpose of comparing bids. **The total Base Bid plus any alternates selected by the Authority will be used for comparison of bids.** The total Base Bid plus any add-alternates will be used for determining the sufficiency of the bid security.

BASE BID					
ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	EXTENSION
1	CLEARING AND GRUBBING	LS	1		
2	TOPSOIL, COMPOST AMENDED	CY	500		
3	EXCAVATION, CLASS 13	CY	2500		
4	SUBBASE, MODIFIED, BERM	TON	255		
5	LINEAR TRENCH DRAIN, 8 INCH	LF	75		
6	SUBDRAIN, SOLID WALL PVC, 4 INCH	LF	50		
7	SUBDRAIN, SOLID WALL PVC, 8 INCH	LF	288		
8	SUBDRAIN, HDPE, 8 INCH	LF	85		
9	SUBDRAIN CLEANOUT, 8 INCH, TYPE A-1	EA	2		
10	SUBDRAIN OUTLETS AND CONNECTIONS, 8 INCH, TO STRUCTURE	EA	2		
11	WATER SERVICE	LS	1		
12	WATER SERVICE, WATER FOUNTAIN	LS	1		
13	VALVE, GATE, 4 INCH	EA	1		
14	BACKFLOW PREVENTER	EA	1		
15	METER PIT	EA	1		
16	PRESSURE REDUCING VALVE	EA	1		

BASE BID					
ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	EXTENSION
17	FLUSHING DEVICE (BLOW OFF), 4 INCH	EA	1		
18	PREPARE EXCAVATION FOR TAPPING SLEEVE AND VALVE	EA	1		
19	INTAKE, SW-512, 48 INCH	EA	2		
20	NYLOPLAST DRAIN BASIN, 12 INCH	EA	3		
21	EXTERNAL DROP CONNECTION	EA	1		
22	MANHOLE ADJUSTMENT, MINOR	EA	1		
23	MANHOLE ADJUSTMENT, MAJOR	EA	2		
24	MANHOLE ADJUSTMENT, MAJOR, WRA	EA	1		
25	REMOVE INTAKE	EA	2		
26	PAVEMENT, PCC, 7 INCH	SY	345		
27	PAVEMENT, PCC, 5 INCH, REINFORCED (SPLASHPAD)	SY	258		
28	PAVEMENT, PCC, 7 INCH, INTEGRAL COLOR	SY	305		
29	CURB AND GUTTER, 2 FT, 7 INCH	LF	45		
30	REMOVAL OF SIDEWALK	SY	1275		
31	SIDEWALK, PCC, 5 INCH	SY	2410		
32	SIDEWALK, PCC, 6 INCH	SY	175		
33	PAVEMENT REMOVAL	SY	895		
34	SALVAGE BRICK PAVERS	SY	250		
35	CURB AND GUTTER REMOVAL	LF	45		
36	PCC EDGE RESTRAINT, FLUSH, 2 FEET	LF	210		
37	TEMPORARY TRAFFIC CONTROL	LS	1		
38	CONVENTIONAL SEEDING, SEEDING, FERTILIZING, AND MULCHING (LOW GROW FESCUE)	AC	1		
39	SOD	SQ	250		
40	DECIDUOUS SHRUBS	EA	195		
41	ORNAMENTAL TREE	EA	18		

BASE BID					
ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	EXTENSION
42	PERENNIAL GROUND COVER (1 GAL)	EA	897		
43	DECIDUOUS TREE	EA	19		
44	EVERGREEN TREE	EA	7		
45	SWPPP PREPARATION	LS	1		
46	SWPPP MANAGEMENT	LS	1		
47	FILTER SOCK, 8", INSTALL, MAINTAIN, AND REMOVE	LF	5000		
48	HANDRAIL, PAINTED	LF	442		
49	MOBILIZATION	LS	1		
50	CONCRETE WASHOUT	LS	1		
51	TENNIS COURT PAVEMENT AND FENCE REMOVAL	LS	1		
52	CONCRETE SURFACE STAIN	SF	1335		
53	NON-SKID RUBBERIZED COATING (SPLASHPAD)	SF	1945		
54	REINFORCED CAST-IN-PLACE CONCRETE RETAINING WALL (PLAYGROUND RAMP WALL)	CY	30		
55	REINFORCED CAST-IN-PLACE CONCRETE PIERS (LEAF SEAT WALLS)	EA	36		
56	REINFORCED CAST-IN-PLACE CONCRETE WALL (LEAF SEAT WALLS)	CF	785		
57	CONCRETE STEPPING PLANKS	EA	7		
58	DRINKING FOUNTAIN	EA	1		
59	SPLASH PAD EQUIPMENT & INSTALLATION	LS	1		
60	SALVAGE & REINSTALL FURNISHINGS	LS	1		
61	PLAYGROUND EQUIPMENT & INSTALLATION	LS	1		
62	FALL ATTENUATION SURFACING, POUR-IN-PLACE	SF	6825		
63	FALL ATTENUATION SURFACING, SYNTHETIC TURF	SF	2000		
64	BIKE RACK	EA	8		

BASE BID					
ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	EXTENSION
65	BENCH (WOOD)	EA	4		
66	STONE BLOCK BENCH	EA	8		
67	ELECTRICAL IMPROVEMENTS, DEMO & SITE PREP	LS	1		
68	ELECTRICAL IMPROVEMENTS, CIRCUITS	LS	1		
69	ELECTRICAL IMPROVEMENTS, POLE-TOP LIGHTS	LS	1		
70	ELECTRICAL IMPROVEMENTS, BOLLARDS	LS	1		
71	ELECTRICAL IMPROVEMENTS, SALVAGE & RELOCATE B-CYCLE	LS	1		
72	SALVAGE AND REINSTALL SCULPTURE (BUTTERFLY)	LS	1		
73	IRRIGATION CAP	LS	1		
TOTAL BASE BID AMOUNT:					
ALTERNATE A					
ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	EXTENSION
A1	PAVEMENT, PCC, 7 INCH	SY	227		
A2	CURB AND GUTTER, 2 FT, 7 INCH	LF	64		
A3	PAVEMENT REMOVAL	SY	155		
A4	CURB AND GUTTER REMOVAL	LF	64		
TOTAL ALTERNATE A AMOUNT:					
ALTERNATE B					
ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	EXTENSION
B1	SPLASH PAD OVERHEAD STRUCTURES	EA	3		
TOTAL ALTERNATE B AMOUNT:					

ALTERNATE C					
C1	CAST STONE CUSTOM WALLS (LEAF SEAT WALLS)	CF	599		
TOTAL ALTERNATE C AMOUNT:					
ALTERNATE D					
D1	IRRIGATION MODIFY AND EXTEND	LS	1		
TOTAL ALTERNATE D AMOUNT:					
ALTERNATE E					
E1	CHAIN LINK FENCE, GALVANIZED, 6'	LF	87		
TOTAL ALTERNATE E AMOUNT:					
TOTAL BASE BID PLUS ALTERNATE A, B, C, D, & E AMOUNT:					

NOTE: IT IS UNDERSTOOD THAT THE ABOVE QUANTITIES ARE ESTIMATED FOR THE PURPOSE OF THIS BID. ALL QUANTITIES ARE SUBJECT TO REVISION BY THE DISTRICT. QUANTITY CHANGES WHICH AMOUNT TO TWENTY (20) PERCENT OR LESS OF THE TOTAL BID SHALL NOT AFFECT THE UNIT PRICE BID.

Bidder Name

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BID BOND

2023 Colby Park Improvements
City of Windsor Heights
Windsor Heights, IA

KNOW ALL BY THESE PRESENTS:

That we, _____, as Principal, and

_____, as Surety, are held and firmly bound unto, City of Windsor Heights as Obligee, (hereinafter referred to as "the Jurisdiction"), in the penal sum of _____ dollars (\$ _____), lawful money of the United States, for which payment said Principal and Surety bind themselves, their heirs, executors, administrators, successors, and assigns jointly and severally, firmly by these presents.

The condition of the above obligation is such that whereas the Principal has submitted to the Jurisdiction a certain proposal, in a separate envelope, and hereby made a part hereof, to enter into a contract in writing, for the following described improvement:

Improvements to Colby Park in Windsor Heights including the demolition of an existing 1,500 SY tennis court and lighting. Includes construction of a 8,500 SF multi-structure accessible playground consisting of poured-in-place rubber surfacing, synthetic turf mounds, iconic tower structures, accessible ramps, and seating areas. Also includes construction of 1,800 SF drain-to-waste splashpad system with multiple spray features and seating areas with shelters. The project includes over 3,000 SY of various pavement types, multiple structural concrete seatwalls and retaining walls, utility improvements, lighting improvements, site restoration and other miscellaneous improvements throughout.

The Surety 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 Jurisdiction may accept such bid or execute such Contract; and said Surety does hereby waive notice of any such extension.

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. If legal action is required by the Jurisdiction against the Surety or Principal to enforce the provisions of the bond or to collect the monetary obligation incurring to the benefit of the Jurisdiction, the Surety or Principal agrees to pay the Jurisdiction all damages, costs, and attorney fees incurred by enforcing any of the provisions of this Bond. All rights, powers, and remedies of the Jurisdiction hereunder shall be cumulative and not alternative and shall be in addition to all rights, powers, and remedies given to the Jurisdiction, by law. The Jurisdiction 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.

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

Signed and sealed this _____ day of _____, 20____.

SURETY:

PRINCIPAL:

By

Surety Company

Signature Attorney-in-Fact/Officer

Name of Attorney-in-Fact/Officer

Company Name

Company Address

City, State, Zip Code

Company Telephone Number

By

Bidder

Signature

Name (Print/Type)

Title

Address

City, State, Zip Code

Telephone Number

NOTE: All signatures on this bid bond must be original signatures in ink; electronic, copies or facsimile of any signature will not be accepted. This bond must be sealed with the Surety's raised, embossing seal or official adhesive seal. The Certificate or Power of Attorney accompanying this bond must be valid on its face and sealed with the Surety's raised, embossing seal or official adhesive seal.

CONTRACT

2023 Colby Park Improvements
City of Windsor Heights
Windsor Heights, IA

THIS CONTRACT, made and entered into at _____
this _____ day of _____, by and between
the City of Windsor Heights hereinafter called the "Jurisdiction", and _____,
hereinafter called the "Contractor".

WITNESSETH:

The Contractor hereby agrees to complete the work comprising the 2023 Colby Park Improvements as specified in the contract documents, which are officially on file with the Jurisdiction, in the office of the City Clerk, City of Windsor Heights, 1145 66th Street, Suite 1, Windsor Heights, IA, Iowa. This contract includes all such contract documents. All work under this contract shall be constructed in accordance with the SUDAS Standard Specifications, 2017 Edition and as further modified by the supplemental specifications and special provisions included in said contract documents and the Contract Attachment which is attached hereto. The Contractor further agrees to complete the work in strict accordance with said contract documents, and to guarantee the work as required by law for the time required in said contract documents after its acceptance by the Jurisdiction.

This contract is awarded and executed for completion of the work specified in the contract documents for the bid prices shown on the Contract Attachment: Bid Items and Quantities which were proposed by the Contractor in its proposal submitted in accordance with the Notice to Bidders and Notice of Public Hearing for the following described improvements:

Improvements to Colby Park in Windsor Heights including the demolition of an existing 1,500 SY tennis court and lighting. Includes construction of a 8,500 SF multi-structure accessible playground consisting of poured-in-place rubber surfacing, synthetic turf mounds, iconic tower structures, accessible ramps, and seating areas. Also includes construction of 1,800 SF drain-to-waste splashpad system with multiple spray features and seating areas with shelters. The project includes over 3,000 SY of various pavement types, multiple structural concrete seatwalls and retaining walls, utility improvements, lighting improvements, site restoration and other miscellaneous improvements throughout.

The Contractor agrees to perform said work for and in consideration of the Jurisdiction's payment of the bid amount of _____ dollars (\$ _____), which amount shall constitute the required amount of the performance, maintenance, and payment bond. The Contractor hereby agrees to commence work as stated in the written Notice to Proceed; and substantially complete the work on or before September 30, 2024 with seeding and plantings to be installed by the end of the 2024 spring SUDAS seeding and planting windows; and to pay liquidated damages for noncompliance with said completion provisions at a rate of Five hundred dollars (\$500.00) for each calendar day that the work remains incomplete.

IN WITNESS WHEREOF, the Parties hereto have executed this instrument, in triplicate on the date first shown written.

JURISDICTION: City of Windsor Heights

CONTRACTOR:

By _____
Mike Jones, Mayor

(Seal)
ATTEST:

Adam Strait, City Clerk

By _____
Contractor's Contact Name
Contractor's Title

Street Address

City, State, Zip Code

Telephone

CONTRACTOR PUBLIC REGISTRATION INFORMATION to be Provided By:

1. All Contractors: The Contractor shall enter its Public Registration No. _____ issued by the Iowa Commissioner of Labor pursuant to Section 91C.5 of the Iowa Code.
2. Out-of-State Contractors:
 - A. Pursuant to Section 91C.7 of the Iowa Code, an out-of-state contractor, before commencing a contract in excess of five thousand dollars in value in Iowa, shall file a bond with the division of labor services of the department of workforce development. The contractor should contact 515-242-5871 for further information. Prior to contract execution, the Jurisdictional Engineer may forward a copy of this contract to the Iowa Department of Workforce Development as notification of pending construction work. It is the contractor's responsibility to comply with said Section 91C.7 before commencing this work.
 - B. Prior to entering into contract, the designated low bidder, if it is a corporation organized under the laws of a state other than Iowa, shall file with the Jurisdictional Engineer a certificate from the Secretary of the State of Iowa showing that it has complied with all the provisions of Chapter 490 of the Code of Iowa, as amended, governing foreign corporations. For further information contact the Iowa Secretary of State Office at 515-281-5204.

Bond No. _____

Name of Surety _____

NOTE: All signatures on this contract must be original signatures in ink; electronic, copies or facsimile of any signature will not be accepted.

CORPORATE ACKNOWLEDGMENT

State of _____)
_____) SS
_____ County)

On this ____ 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 in and for the State of _____
My commission expires _____ 20, _____

PARTNERSHIP ACKNOWLEDGMENT

State of _____)
_____) SS
_____ County)

On this ____ day of _____, 20 ____, before me, the undersigned, a Notary Public in and for the State of _____, personally appeared _____ to me personally known, who being by me duly sworn, did say that the person is one of the partners of _____, a partnership, and that the instrument was signed on behalf of the partnership by authority of the partners and the partner acknowledged the execution of the instrument to be the voluntary act and deed of the partnership by it and by the partner voluntarily executed.

Notary Public in and for the State of _____
My commission expires _____ 20, _____

INDIVIDUAL ACKNOWLEDGMENT

State of _____)
_____) SS
_____ County)

On this ____ day of _____, 20 ____, before me, the undersigned, a Notary Public in and for the State of _____, personally appeared _____ and _____, to me known to be the identical person(s) named in and who executed the foregoing instrument, and acknowledged that (he) (she) (they) executed the instrument as (his) (her) (their) voluntary act and deed.

Notary Public in and for the State of _____
My commission expires _____ 20, _____

LIMITED LIABILITY COMPANY ACKNOWLEDGMENT

State of _____)
_____) SS
_____ County)

On this ____ day of _____, 20 ____, before me a Notary Public in and for said county, personally appeared _____, to me personally known, who being by me duly sworn did say that person is _____ of said _____, that (the seal affixed to said instrument is the seal of said OR no seal has been procured by the said) _____, and that said instrument was signed and sealed on behalf of the said _____, by authority of its managers and the said _____ acknowledged the execution of said instrument to be the voluntary act and deed of said _____, by it voluntarily executed.

Notary Public in and for the State of _____
My commission expires _____ 20, _____

CONTRACT ATTACHMENT: ITEM 1: GENERAL - NONE

CONTRACT ATTACHMENT: ITEM 2: BID ITEMS AND, QUANTITIES

THIS CONTRACT IS AWARDED AND EXECUTED FOR COMPLETION OF THE WORK SPECIFIED IN THE CONTRACT DOCUMENTS FOR THE BID PRICES TABULATED BELOW AS PROPOSED BY THE CONTRACTOR IN ITS PROPOSAL SUBMITTED IN ACCORDANCE WITH NOTICE TO BIDDERS AND NOTICE OF PUBLIC HEARING. ALL QUANTITIES ARE SUBJECT TO REVISION BY THE JURISDICTION. THE JURISDICTION RESERVES THE RIGHT TO ADJUST QUANTITIES AS NECESSARY TO MAXIMIZE FUNDS BUDGETED FOR THIS PROJECT.

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PERFORMANCE, PAYMENT AND MAINTENANCE BOND

2023 Colby Park Improvements
City of Windsor Heights
Windsor Heights, IA

KNOW ALL BY THESE PRESENTS:

That we, _____, as Principal (hereinafter the "Contractor" or "Principal" and _____, as Surety are held and firmly bound unto _____, as Oblige (hereinafter referred to as "the Jurisdiction"), and to all persons who may be injured by any breach of any of the conditions of this Bond in the penal sum of _____ DOLLARS (\$ _____), lawful money of the United States, for the payment of which sum, well and truly to be made, we bind ourselves, our heirs, legal representatives and assigns, jointly or severally, firmly by these presents.

The conditions of the above obligations are such that whereas said Contractor entered into a contract with the Jurisdiction, bearing date the _____ day of _____, _____, hereinafter the "Contract" wherein said Contractor undertakes and agrees to construct the following described improvements:

Improvements to Colby Park in Windsor Heights including the demolition of an existing 1,500 SY tennis court and lighting. Includes construction of a 8,500 SF multi-structure accessible playground consisting of poured-in-place rubber surfacing, synthetic turf mounds, iconic tower structures, accessible ramps, and seating areas. Also includes construction of 1,800 SF drain-to-waste splashpad system with multiple spray features and seating areas with shelters. The project includes over 3,000 SY of various pavement types, multiple structural concrete seatwalls and retaining walls, utility improvements, lighting improvements, site restoration and other miscellaneous improvements throughout.

and to faithfully perform all the terms and requirements of said Contract within the time therein specified, in a good and workmanlike manner, and in accordance with the Contract Documents. Provided, however, that one year after the date of acceptance as complete of the work under the above referenced Contract, the maintenance portion of this Bond shall continue in force for the stated maintenance period.

It is expressly understood and agreed by the Contractor and Surety in this bond that the following provisions are a part of this Bond and are binding upon said Contractor and Surety, to-wit:

PERFORMANCE: The Contractor shall well and faithfully observe, perform, fulfill, and abide by each and every covenant, condition, and part of said Contract and Contract Documents, by reference made a part hereof, for the above referenced improvements and shall indemnify and save harmless the Jurisdiction from all outlay and expense incurred by the Jurisdiction by reason of the Contractor's default of failure to perform as required. The Contractor shall also be responsible for the default or failure to perform as required under the Contract and Contract Documents by all its subcontractors, suppliers, agents, or employees furnishing materials or providing labor in the performance of the Contract.

PAYMENT: The Contractor and the Surety on this Bond are hereby agreed to pay all just claims submitted by persons, firms, subcontractors, and corporations furnishing materials for or performing labor in the performance of the Contract on account of which this Bond is given, including but not limited to claims for all amounts due for labor, materials, lubricants, oil, gasoline, repairs on machinery, equipment and tools, consumed or used by the Contractor or any subcontractor, wherein the same are not satisfied out of the portion of the contract price which the Jurisdiction is required to retain until completion of the improvement, but the Contractor and Surety shall not be liable to said persons, firms, or corporations unless the claims of said claimants against said portion of the contract price shall have been established as provided by law.

The Contractor and Surety hereby bind themselves to the obligations and conditions set forth in Chapter 573, Code of Iowa, which by this reference is made a part hereof as though fully set out herein.

MAINTENANCE: The Contractor and the Surety on this Bond hereby agree, at their own expense:

To remedy any and all defects that may develop in or result from work to be performed under the Contract within the 4-year period from the date of acceptance of the work under the Contract, by reason of defects in workmanship or materials used in construction of said work;

To keep all work in continuous good repair; and

To pay the Jurisdiction's reasonable costs of monitoring and inspection to assure that any defects are remedied and to repay the Jurisdiction all outlay and expense incurred as a result of Contractor's and Surety's failure to remedy any defect as required by this section.

Contractor's and Surety's agreement herein made extends to defects in workmanship or materials not discovered or known to the Jurisdiction at the time such work was accepted.

GENERAL: Every Surety on this Bond shall be deemed and held bound, any contract to the contrary notwithstanding, to the following provisions:

To consent without notice to any extension of time to the Contractor in which to perform the Contract;

To consent without notice to any change in the Contract or Contract Documents, which thereby increases the total contract price and the penal sum of this bond, provided that all such changes do not, in the aggregate, involve an increase of more than twenty percent of the total contract price, and that this bond shall then be released as to such excess increase; and

To consent without notice that this Bond shall remain in full force and effect until the Contract is completed, whether completed within the specified contract period, within an extension thereof, or within a period of time after the contract period has elapsed and the liquidated damage penalty is being charged against the Contractor.

The Contractor and every Surety on the bond shall be deemed and held bound, any contract to the contrary notwithstanding, to the following provisions:

That no provision of this Bond or of any other contract shall be valid which limits to less than five years after the acceptance of the work under the Contract the right to sue on this Bond.

That as used herein, the phrase "all outlay and expense" is not to be limited in any way, but shall include the actual and reasonable costs and expenses incurred by the Jurisdiction including interest, benefits and overhead where applicable. Accordingly, "all outlay and expense" would include but not be limited to all contract or employee expense, all equipment usage or rental, materials, testing, outside experts, attorney's fees (including overhead expenses of the Jurisdiction's staff attorneys), and all costs and expenses of litigation as they are incurred by the Jurisdiction. It is intended the Contractor and Surety will defend and indemnify the Jurisdiction on all claims made against the Jurisdiction on account of Contractor's failure to perform as required in the Contract and Contract Documents, that all agreements and promises set forth in the Contract and Contract Documents, in approved change orders, and in this Bond will be fulfilled, and that the Jurisdiction will be fully indemnified so that it will be put into the position it would have been in had the Contract been performed in the first instance as required.

In the event the Jurisdiction incurs any "outlay and expense" in defending itself with respect to any claim as to which the Contractor or Surety should have provided the defense, or in the enforcement of the promises given by the Contractor in the Contract, Contract Documents, or approved change orders, or in the enforcement of the promises given by the Contractor and Surety in this Bond, the Contractor and Surety agree that they will make the Jurisdiction whole for all such outlay and expense, provided that the Surety's obligation under this bond shall not exceed 125% of the penal sum of 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. If legal action is required by the Jurisdiction to enforce the provisions of this Bond or to collect the monetary obligation incurring to the benefit of the Jurisdiction, the Contractor and the Surety agree, jointly and severally, to pay the Jurisdiction all outlay and expense incurred therefor by the Jurisdiction. All rights, powers, and

remedies of the Jurisdiction hereunder shall be cumulative and not alternative and shall be in addition to all rights, powers and remedies given to the Jurisdiction, by law. The Jurisdiction may proceed against surety for any amount guaranteed hereunder whether action is brought against the Contractor or whether Contractor is joined in any such action(s).

NOW THEREFORE, the condition of this obligation is such that if said Principal shall faithfully perform all the promises of the Principal, as set forth and provided in the Contract, in the Contract Documents, and in this Bond, then this obligation shall be null and void, otherwise it shall remain in full force and effect.

When a work, term, or phrase is used in this Bond, it shall be interpreted or construed first as defined in this Bond, the Contract, or the Contract Documents; second, if not defined in the Bond, Contract, or Contract Documents, it shall be interpreted or construed as defined in applicable provisions of the Iowa Code; third, if not defined in the Iowa Code, it shall be interpreted or construed according to its generally accepted meaning in the construction industry; and fourth, if it has no generally accepted meaning in the construction industry, it shall be interpreted or construed according to its common or customary usage.

Failure to specify or particularize shall not exclude terms or provisions not mentioned and shall not limit liability hereunder. The Contract and Contract Documents are hereby made a part of this Bond.

Project No. _____

(CON'T – PERFORMANCE, PAYMENT AND MAINTENANCE BOND)

Witness our hands, in triplicate, this _____ day of _____, _____.

Surety Countersigned By:

PRINCIPAL:

Signature of Iowa Resident Commission Agent as
Prescribed by Chapter 515.52-57, Iowa Code.
(Require only if Attorney-in-Fact is not also an
Iowa Resident Commission Agent).

Contractor

By:

Signature

Name of Resident Commission Agent

Title

Company Name

SURETY:

Company Address

Surety Company

City, State, Zip Code

By:

Signature Attorney-in-Fact Officer

Company Telephone Number

Name of Attorney-in-Fact Officer

Company Name

Company Address

City, State, Zip Code

Company Telephone Number

NOTE: All signatures on this Performance, Maintenance & Payment Bond must be original signatures in ink; electronic, copies, or facsimile of any signature will not be accepted. This bond must be sealed with the Surety's raised, embossing seal or official adhesive seal. The Certificate or Power of Attorney accompanying this bond must be valid on its face and sealed with the Surety's raised, embossing seal or official adhesive seal.

SPECIAL PROVISIONS

FOR

2023 Colby Park Improvements
City of Windsor Heights
Windsor Heights, IA

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20. SOIL BORINGS
21. EXISTING UTILITIES
22. SALVAGE & MATERIALS / DISPOSAL
23. TRAFFIC CONTROL
24. TEMPORARY FENCES
25. DEWATERING
26. INCIDENTAL CONTRACT ITEMS

1) CONTRACT PROVISIONS

a) Completion Date

- i) All work under the Contract must be substantially complete as detailed in Section 00500 – Contract

b) Liquidated Damage

- i) Damages in the amount as detailed in Section 00500 –Contract per day will be assessed for each day the work remains incomplete.

c) Maintenance Bond & Warranty

- i) To remedy any and all defects as detailed in Section 00500 – Contract.

d) Bid Quantity Revisions

- i) All quantities are estimates and subject to revision by the Jurisdiction.
- ii) Quantity changes that do not materially change the character of the work to performed and amount to less than Twenty (20) percent of a given bid item or less than Five (5) percent of the total contract amount shall not affect the unit price bid.

2) DEFINITION AND INTENT

a) The Specifications that apply to the materials and construction practices for this project are defined as follows:

- i) The 2023 Edition of the SUDAS Standard Specifications, except as modified by these Special Provisions to the Technical Specifications.
- ii) 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 unintentional; supply omitted words or phrases by inference.
- iii) “Owner”, “Jurisdiction” and “City” shall mean the City of Windsor Heights, acting through the 2023 Colby Park Improvements project.
- iv) “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.
- v) “Engineer” shall mean the Engineer on Record.
- vi) The intent of the Technical Specifications is to describe the construction desired, performance requirements, and standards of materials and construction.
- vii) “Standard Drawings” shall mean the Figures bound within the SUDAS Standard Specifications and/or the Typical Drawings bound within the plans.
- viii) “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.
- ix) “Or equal” shall follow manufacturers names used to establish standards and, if not stated, is implied.

b) Engineer: Bolton & Menk, Inc., 430 East Grand Ave, Suite 101, Des Moines, IA 50309, (515) 259-9190, desmoines@bolton-menk.com.

3) GENERAL PROVISIONS AND COVENANTS

- a) Division 1 of the General Provisions and Covenants of the 2023 Edition SUDAS Standard Specifications is modified as follows:
 - i) Section 1020.1.09B, Unit Price Attachment.

- (a) A computer generated unit price attachment may be submitted by the Bidder as specified by this Section.
- ii) Section 1050, 1.05 Shop Drawings, Certificates, and Equipment Lists.
 - (a) Electronic submittal of shop drawings will be allowed.
 - (b) If hardcopy submittals are used, the Contractor shall submit a minimum of three (3) copies plus any additional required by the Contractor.
- iii) Section 1050, 1.15 - Additional Contractor Responsibilities.
 - Notify residents a minimum of 48 hours prior to driveway closings.

4) WORK REQUIRED

- a) Work under this contract includes all materials, equipment, transportation, traffic control, and associated work for the construction of the 2023 Colby Park Improvements project as described in the Official Publication.

5) PLANS AND SPECIFICATIONS

- a) The Owner will furnish five (5) sets of plans and specifications to the Contractor after award of the contract. The Contractor shall compensate the Owner for printing costs for additional copies required.
- b) Contractor shall provide one set of plans and specifications for each foreman and superintendent in charge of each crew on the job.

6) SUBMITTALS

- a) Contractor shall provide a construction schedule showing dates of starting and completing various portions of work. Schedule shall be updated as needed or as requested by Engineer due to changes in progress of construction from original schedule. Updates shall be completed within one week of request.
- b) Contractor shall submit the following information for Engineer's review. Three (3) copies plus any additional copies required by Contractor shall be submitted to the Engineer at the preconstruction conference or at least 14 days prior to utilization of the particular item on this project.
 - i) Testing reports.
 - ii) Manufacturer's data for materials that are to be permanently incorporated into the project.
 - iii) Details of proposed methods of any special construction required.
 - iv) Purchase orders and subcontracts without prices.
 - v) Traffic control and staging plan.
 - vi) Such other information as the Engineer may request to insure compliance with contract documents.
 - vii) List of Subcontractors and Suppliers.

7) STANDARDS AND CODES

- a) Construct improvements with best present day construction practices and equipment.

- b) Conform with and test in accordance with applicable sections of the following standards and codes.
 - i) American Association of State Highway and Transportation Officials (AASHTO).
 - ii) American Society for Testing and Materials (ASTM).
 - iii) Iowa Department of Transportation Standard Specifications (Iowa DOT).
 - iv) American National Standards Institute (ANSI).
 - v) American Water Works Association (AWWA).
 - vi) American Welding Society (AWS).
 - vii) Federal Specifications (FS).
 - viii) Iowa Occupational Safety and Health Act of 1972 (IOSHA).
 - ix) Manual of Accident Prevention in Construction by Associated General Contractors of America, Inc. (AGC).
 - x) Standards and Codes of the State of Iowa and the ordinances of the Owner.
 - xi) Other standards and codes which may be applicable to acceptable standards of the industry for equipment, materials and installation under the contract.

8) CONSTRUCTION GENERAL

- a) Procedures outlined herein are not intended to fully cover all special construction procedures but are offered as an aid to the Contractor in planning work.
- b) Contractor shall cooperate with the City of Windsor Heights, Iowa and the Engineer to minimize inconvenience to property owners, other jurisdictions and motorists and to prevent delays in construction and interruption to continuous operation of utility services and site access.
- c) The Contractor is expected to provide adequate personnel and equipment to perform work within the specified time of construction.
- d) Contractor shall install and maintain orange safety fence around all open trenches or open structures when left unattended.
- e) Contractor shall complete surface restoration and clean up activities as construction progresses.

9) EMPLOYMENT PRACTICES

- a) Neither the Contractor nor the Contractor's subcontractors shall employ any person whose physical or mental condition is such that their employment will endanger the health and safety of anyone employed on the Project.
- b) The Contractor shall not commit any of the following employment practices and agrees to include the following clauses in any subcontracts:
 - i) To discharge from employment or refuse to hire any individual because of sex, race, color, religion, national origin, sexual orientation, marital status, age, or disability unless such disability is related to job performance of such person or employee.

- ii) To discriminate against any individual in terms, conditions, or privileges or employment because of sex, race, color, religion, national origin, sexual orientation, marital status, age, or disability unless such disability is related to job performance of such person or employee.

10) RESPONSIBILITY OF CONTRACTOR

- a) Contractor shall provide supervision of the work.
- b) Contractor shall provide protection of all property from injury or loss resulting from construction operations.
- c) Contractor shall replace or repair objects sustaining any such damage, injury, or loss, to the satisfaction of Owner and Engineer.
- d) Contractor shall cooperate with Owner, Engineer, and representatives of utilities in locating underground utility lines and structures. Incorrect, inaccurate, or inadequate information concerning location of utilities or structures shall not relieve the Contractor of responsibility for damage thereto caused by construction operations.
- e) Contractor shall keep cleanup current with construction operations.
- f) Contractor shall comply with all Federal, State of Iowa, and local laws and ordinances.

11) WORK HOURS/COMMUNITY EVENTS

- a) The Contractor will be required to limit work hours on the Project from 7:00 a.m. to 7:00 p.m., Monday through Saturday, unless otherwise directed by the Engineer.
- b) The following Community Events are scheduled. Contractor is required to coordinate with the Owner as needed to allow use of public property as necessary for the event. If contract continues for multiple years, event is still in force even though dates and locations may change.

12) CONSTRUCTION FACILITIES

- a) Contractor shall provide telephone numbers where Contractor's representative can be reached during work days and on nights and weekends in event of emergency.
- b) Contractor shall provide and maintain suitable sanitary facilities for construction personnel for duration of work; remove upon completion of work.
- c) Contractor shall not store construction equipment, employee vehicles, or materials on streets open to traffic.
- d) Contractor shall provide suitable storage facilities necessary for proper storage of materials and equipment. Location for storage of equipment by Contractor is subject to approval of Engineer.
- e) 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.

13) PROJECT SUPERVISION

- a) The Contractor shall be represented in person at the construction site at all times that construction operations are proceeding. Representation constitutes a qualified superintendent or other designated, qualified representative capable of providing adequate supervision. The representative must be duly authorized to receive and execute instructions, notices, and written orders from the Engineer.

- b) Resolution of issues that arise during construction relating to traffic control, construction staging, etc. is the responsibility of the Contractor.
- c) Weekly progress meetings, if specified at the preconstruction conference may be held at the project site to review project schedule, coordinate activities, resolve conflicts, and coordinate the construction work. The day and time for this meeting will be set at the preconstruction conference. The Contractor shall provide qualified representation at each meeting.
- d) Refer to Division 1 – General Provisions and Covenants, Section 1080 – Contractual Provisions, Part 1 – Prosecution and Progress of the Work, Section 1.10 Contractors Employees, Methods and Equipment for additional requirements.
- e) Contractor shall provide supervision of all sub-contractors and their personnel while on the site.

14) COORDINATION WITH OTHERS

- a) Contractor shall cooperate and coordinate construction with the Owner, utility companies, affected property owners, and other contractors working in vicinity of this project.
- b) It is the Contractor's responsibility to schedule and coordinate work to minimize construction delays and conflicts.
- c) Contractor shall cooperate and coordinate with property owners prior to beginning work that will affect their parcel.

15) CONSTRUCTION LIMITS

- a) Contractor shall confine the construction operations within the construction limits shown on the plans.
- b) Contractor shall not store equipment, vehicles, or materials within the right-of-way of any streets open to traffic or on temporary access roads at any time.
- c) Areas disturbed outside of construction limits shall be restored at the contractor's expense to the satisfaction of the Jurisdiction.
- d) Contractor shall protect trees, fences, and landscaping within the construction limits not marked for removal.
- e) All work on this project will be within City Right-of-Way, Easements or Public Property.

16) CONSTRUCTION SCHEDULE

- a) The Contractor will prepare and submit to the Engineer a project schedule that will assure the completion of the project within the time specified within the Contract.
- b) Adequate equipment and forces shall be made available by the Contractor to start work immediately upon receipt of the Notice to Proceed.
- c) Contractor shall submit a construction schedule at the preconstruction conference.
- d) Contractor shall periodically update it as needed due to changes in progress of construction from original schedule or as requested by the Engineer. Updates shall be completed within one week of request.
- e) The Contractor shall be required to meet the final completion date as specified in the written Notice to Proceed.

- f) Contractor shall notify the City and property owners at least 48 hours prior to any street closures.
- i) Notification shall be provided by written notice placed on the front door. The following items shall be included within the notice:
 - (a) The street name, location and proposed date of street closure
 - (b) The estimated schedule for completion of work
 - (c) The estimated date for reopening of the street
 - (d) Procedure for garbage collection recycling and postal service

17) CONSTRUCTION PHASING

- a) Contractor shall refer to construction staging and traffic control plans when included in construction plans.
- b) Contractor shall include construction phasing on the required construction schedule submittal.

18) CONSTRUCTION SURVEY DOCUMENTATION & RESPONSIBILITIES OF ENGINEER AND CONTRACTOR

- a) Survey shall be the responsibility of Contractor per SUDAS requirements.

19) MATERIALS TESTS

- a) Material testing as specified for construction will be completed by an independent testing laboratory retained by the Contractor and approved by the Engineer. Testing shall meet the requirements of the SUDAS Standard Specifications.
- b) The Contractor shall coordinate all material testing with the Engineer.
- c) The Contractor shall provide transportation of all samples to the laboratory.
- d) The Contractor shall not deliver materials to the project site until laboratory tests have been furnished which verify compliance of materials with specifications.
- e) Contractor shall provide gradation and materials certifications for all granular materials. Certify that sources of Portland Cement and aggregate sources are Iowa DOT approved.
- f) Contractor shall certify that materials and equipment are manufactured in accordance with applicable specifications.

20) SOIL BORINGS

- a) N/A

21) EXISTING UTILITIES

- a) Location of utility lines, mains, cables, and appurtenances shown on plans are from information provided by utility companies and records of the Owner.
- b) Prior to construction, Contractor shall contact all utility companies and have all utility lines and services located. The Contractor is responsible for excavating and exposing underground utilities in order to confirm their locations ahead of the work.

- c) The Contractor is solely responsible for damage to utilities or private or public property due to utility disruption.
- d) The Contractor shall notify utility company immediately if utility infrastructure is damaged during construction.
- e) The Contractor shall support and protect all utilities that are not moved.
- f) Utility services are not generally shown on plans; protect and maintain services during construction. Notify Jurisdiction and affected property Jurisdictions 48 hours prior to any planned utility service interruptions.
- g) If private utility work occurs within/adjacent to the site during the construction period, Contractor shall coordinate work schedules with the Engineer.
- h) Existing utilities shall remain in substantially continuous operation during construction. Contractor shall select the order and methods of construction that will not interfere with the operation of the utility systems. Interrupt utility services only with approval of Jurisdiction and Engineer.
- i) No claims for additional compensation or time extensions will be allowed to the Contractor for interference or delay caused by utility companies.

22) SALVAGE OF MATERIALS / DISPOSAL

- a) The Contractor shall remove from the project site and dispose of trees, shrubs, vegetation, excess soil excavation, rubbish, concrete, granular materials, and other materials encountered as shown on plans and as specified. Excess soil excavation not designated for waste locations shall be disposed as directed by the Engineer.
- b) The Contractor shall dispose of materials in accordance with applicable laws and ordinances. Disposal sites are subject to the review and approval of the Engineer.
- c) Burning of brush and other debris is not permitted. Contractor is responsible for selecting disposal location off site.
- d) The Contractor shall dispose of broken concrete, asphalt, granular material, rubble, and excess or unsuitable excavated material. Contractor is responsible for selecting disposal location off site.
- e) The Contractor shall cooperate with all applicable City, State and Federal agencies concerning disposal of materials.
- f) The City of Windsor Heights, Iowa retains first right of refusal for retaining any existing materials removed by the construction.
- g) The Contractor shall carefully remove, in a manner to prevent damage, all materials and equipment specified or indicated as salvage. The Contractor shall protect and store items specified.
- h) Any items damaged in removal, storage, or handling through carelessness or improper procedures shall be replaced by the Contractor in kind with new items.

23) TRAFFIC CONTROL

- a) Contractor shall furnish, erect, and maintain traffic control devices as specified in the construction drawings and directed by the Engineer including signs, barrels, cones, and barricades to direct traffic and separate traffic from work areas. Traffic control shall be in place prior to the closing of any streets.

- b) Contractor shall provide traffic control devices in accordance with the Iowa DOT Standard Specification, Section 2528, Traffic Control, and the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
- c) Adjustments to the traffic control or the addition of flaggers will be required if, in the opinion of the Engineer, undue traffic congestion occurs.
- d) Contractor shall provide continuous access for police, fire, and other emergency vehicles.
- e) Contractor shall notify the Engineer in writing at least 72 hours prior to the start of any construction operation that will necessitate land closure or internal traffic control signing.

24) TEMPORARY FENCES

- a) Contractor shall install temporary fencing around open excavations or material storage areas and as directed by Engineer to prevent access of unauthorized persons to construction areas.
- b) Contractor shall provide orange plastic mesh safety fence with a nominal height of 48". Support fence securely on driven posts in vertical position without sagging.
 - i) Refer to Iowa DOT Section 4188.03 for fence materials.
- c) Temporary fencing installed around open excavations or material storage areas is incidental to construction and will not be measured for payment.
- d) Contractor shall remove temporary fencing upon completion of construction.

25) DEWATERING

- a) Contractor shall perform all construction work in dry conditions.
- b) Unless specified in the Bid Items, all costs associated with Dewatering activities shall be incidental to the project.
- c) Contractor shall submit dewatering methods to the Engineer for review. Obtain the Engineer's approval on methods prior to construction.
- d) Groundwater levels are subject to variation. No additional compensation will be permitted due to high groundwater conditions.
- e) Should cohesive soils with no wet sand seams or layers be encountered, it may be possible to control water seepage by draining groundwater to temporary construction sumps and pumping it outside the perimeter of the excavation.
- f) The Contractor shall not pump water from open excavation in sand and gravel below the natural ground water level.
- g) Contractor shall maintain water levels 2 feet or more below the bottom of excavations in saturated cohesionless (sand and/or gravel) soils to prevent upward seepage, which could reduce subgrade support.
 - i) A dewatering system (well points or shallow wells) shall be installed when working in cohesionless soils.
 - ii) Costs of installing and operating dewatering system are incidental, unless specified otherwise.
- h) Contractor shall provide means for conveying surface water encountered during construction.

- i) Surface water shall be prevented from flowing into excavation and accumulated water shall be removed.
- ii) Surface water and storm sewer flows shall be diverted around areas of construction.
- iii) Sanitary sewers shall not be used for the disposal of dewatering or trench water.
- i) Contractor shall backfill pipe and structures prior to stopping dewatering operations. Contractor shall not lay pipe or construct concrete structures on excessively wet soils.
- j) Costs of conveying both surface water and groundwater are incidental.

26) INCIDENTAL CONTRACT ITEMS

- a) The furnishing and installing of specific items and/or the performance of work under certain circumstances shall not be individually paid in the absence of a specific bid item for the work. These costs shall be included in the Unit Price bid for the individual items associated with the stated specific item or work effort. Such items of work include, but are not limited to:

- Concrete header removal
- Connections to existing storm sewer structures and pipes unless specified for separate payment
- Construction and removal of temporary access roads
- Construction fencing
- Construction staging & phasing
- Coordination and cooperation with affected property owners
- Coordination and cooperation with the City of Windsor Heights
- Coordination and cooperation with other Contractors
- Coordination and cooperation with other projects in the area
- Coordination and cooperation with utility companies
- Dewatering and handling storm water flow during construction
- Dust control measures
- Engineering Fabric
- Excavation, verification and protection of existing utilities
- Field and wood fence removal
- Field testing
- Finish grading
- Full depth sawcutting of existing pavement
- Granular surfacing removal
- Maintenance and watering for seeding and sodding
- Maintenance of erosion control measures, including silt removal
- Material testing
- Monitoring weather conditions
- Mowing
- Overhaul
- Proof rolling
- Protection of existing hydrant(s) and valve(s)
- Protection of existing trees and plantings not shown as removals
- Protection of existing utilities and light poles
- Removing and reinstalling existing signs
- Reseeding
- Site cleanup/restoration
- Temporary safety closures
- Working backfill to reduce moisture content
- Working subgrade to achieve acceptable moisture content

****END OF SECTION****

TECHNICAL SPECIFICATIONS

TS1 – SHELTERS

PART 1 - GENERAL

[reference CSI 2020 MasterFormat™ Division 10
(Specialties Manufacturers) category 7300 (Protective Covers)]

1.01 DESCRIPTION OF PRODUCT

A. SECTION INCLUDES

Specifications and requirements for procurement and installation of:

1. SPLASH PAD OVERHEAD STRUCTURES

B. RELATED SECTIONS

1. TS2 – Splash Pad Equipment and Installation, TS7 – High Performance Coatings,

C. MEASUREMENT AND PAYMENT

1. SPLASH PAD OVERHEAD STRUCTURES shall be paid per each (EA) structure installed. This item includes all excavation, formwork for footings, reinforcement, placement of footings, backfill, structural engineering, manufacturer's fees, assembling, and installation, or other items as listed in the estimate reference notes to completely construct and install overhead structures.

1.02 REFERENCES

A. REFERENCE STANDARDS:

1. AISC - American Institute of Steel Construction Manual of Steel Construction.
2. ASTM - American Society for Testing and Materials.
3. AWS - American Welding Society.
4. LEED - Leadership in Energy and Environmental Design.
5. OSHA – Occupational Safety and Health Administration Steel Erection Standard 29 CFR 1926 Subpart R- Steel Erection.
6. PCI - Powder Coating Institute.
7. SSPC – The Society for Protective Coatings.
8. Architecturally Exposed Structural Steel (AESS) – as defined by the American Institute of Steel Construction (AISC)

1.03 SUBMITTALS

A. GENERAL SUBMITTAL:

Submit two (2) sets of engineered drawings and two (2) sets of engineered calculations, both signed and sealed by a Professional Engineer licensed in the State of Iowa.

B. PRODUCT DESIGN REQUIREMENTS:

The building shall meet the following design requirements as shown on the drawings:

1. Building Code: See drawings.
2. Ground Snow Load (Pg): See drawings.
3. Basic Wind Speed (V): See drawings.
4. Seismic Design: See drawings.

C. SUBMITTAL REQUIREMENTS:

Calculations and Submittal drawings shall include, at a minimum:

1. Calculations:
 - a. References to building codes and design manuals used for calculations.
 - b. Identification of lateral force resisting system.
 - c. Formulas used for determining snow, wind, and seismic loads to specific project location.
 - d. Three dimensional modeling input, model geometry, and analysis results.
 - e. Member design results and controlling load combinations.
 - f. Connection design for structural bolts, welds, plate thicknesses, and anchorage to the foundation.
 - g. Foundation designs shall include the required combinations of gravity and lateral loads.
2. Submittal Drawings:
 - a. Anchor bolt layout.
 - b. Foundation design.
 - c. Three dimensional views of frame.
 - d. Member sizes and locations.
 - e. Structural connection details, including bolt sizes and plate thicknesses.
 - f. Roof trim and connection details for installation clarity.

D. FOUNDATION DESIGN:

1. The shelter shall be set on foundations designed by manufacturer.
2. Foundation materials shall be provided by contractor.
3. Owner shall provide manufacturer with complete information about the site including soil bearing capacity and lateral load capacity.
4. If soil data are not provided, foundations will be designed to the minimum values identified in the governing building code.

E. ANCHOR RODS:

Anchor rods shall be provided by manufacturer.
Hooked anchors are not permitted per AISC requirements.

1.04 QUALITY ASSURANCE

A. MANUFACTURER QUALIFICATIONS:

1. Minimum of (10) years in the shelter construction industry.
2. Full time on-staff Licensed Engineer.
3. Full time on-staff Quality Assurance Manager.
4. Full time on-staff LEED AP.
5. All welders AWS Certified.
6. Manufacturer owned and controlled finishing system to include shot blast, pretreatment, primer, and top coat.
7. Published Quality Management System.
8. Annual audit of Quality System and Plant Processes by Third Party Agency.
9. Annual audit of powder coat finish system by Third Party Agency (PCI).

B. MANUFACTURER'S CERTIFICATONS:

1. AISC Certified Building Fabricator, (American Institute of Steel Construction) Certified Building Fabricator is an AISC Quality Management Systems (QMS) Certification which sets the quality standard for the structural steel industry.
2. PCI 4000 S Certified, Certification thru Powder Coating Institute for original equipment manufacturers (OEMs) to evaluate process on entire finish system to add powder coat over steel.
3. City of Los Angeles, CA Approved Fabricator Type I Steel.
4. Clark County, NV Approved Fabricator steel.

5. City of Houston, TX Approved Fabricator for Structural Steel.
6. Miami Dade County Certificate of Competency for Structural Steel.
7. State of Utah Approved Fabricator for Medium and High Strength Steel.
8. City of Riverside, CA Approved Fabricator Type I Steel.
9. City of Phoenix, AZ Approved Steel Fabricator.

1.05 FIELD OR SITE CONDITIONS

- A. Foundations shall be at the same elevation unless specifically noted otherwise on the drawings.

1.06 MANUFACTURER WARRANTY

- A. Shelter must have a (10) year limited warranty on steel frame members.
- B. Shelter must have a (10) year limited warranty on paint system.
- C. Pass through warranty of Metal Roof manufacturer shall be provided upon request.

PART 2 - PRODUCTS

2.01 SHELTER SYSTEM AND MATERIALS

- A. PRODUCT:
 1. **CWE 8X12 with Multi-rib metal roof.**
 2. ROOF SLOPE: **12/2.**
 3. Minimum Clearance Height (MCH): **7.5 ft.** Minimum clearance height under the structure indicates the lowest height of a member from finish grade for clearance under the structure. This is generally the clearance under roof eave or frame, whichever is lower.
- B. MANUFACTURER:
 1. Acceptable Manufacturer: Poligon, a Product of PorterCorp, 4240 N 136th Ave., Holland, MI 49424; 616.399.1963; E-mail: info@poligon.com; www.poligon.com.
 2. Talk to a local rep agency. Receive pricing from Mark Boland at 800-798-7589.
 3. The product shall be designed, produced, and finished at a facility operated and directly supervised by the supplier who has a minimum of (10) years in the business of making pre-manufactured shelters.
 4. Manufacturer must be an AISC Certified Building Fabricator.
- C. SUBSTITUTION LIMITATIONS:
 - a. Substitutions
 - i. Substitutions for cause: Will only be considered when circumstances, outside of the contractor's control, will create a substantial delay in the completion of the project. Approval of substitution requests is at the discretion of the architect, owner, and/or their designated consultants. Architect will only consider contractor's request for substitution when the following conditions are satisfied:
 1. Requested substitution meets or exceeds requirements as per the Contract Documents and will produce indicated results
 2. Requested substitution provides equal design characteristics that specified product provides
 3. Substitution request is fully documented and properly submitted.

- ii. If those conditions are not satisfied, Architect may return requests without action, except to record noncompliance with these requirements. It is required that the contractor provide the following:
 1. Documentation that the proposed substitution complies with all requirements as stated or shown in the contract documents and/or drawings
 2. Proof of meeting or exceeding specified warranty and/or certifications. Example: Fabricator Qualifications, such as AISC or PCI4000
 3. Detailed comparison of significant qualities of proposed substitutions with those of the specified product. Include annotated copy of applicable Specification Section. Product data, including drawings and descriptions of products and fabrication
 4. Documentation of any deviations from the specified material/product
 5. Architect may request additional information and documentation prior to rendering a decision
 6. If substitution approval happens during bidding, Architect will approve substitution requests by issuing an Addendum. Substitutions not approved by addendum are rejected. This information will be provided in an expeditious manner.
 7. Substitutions for convenience: Will not be considered

C. PRODUCT REQUIREMENTS AND MATERIALS:

1. GENERAL: The pre-engineered package shall be pre-cut unless otherwise noted and pre-fabricated which will include all parts necessary to field construct the shelter. The shelter shall be shipped knocked down to minimize shipping expenses. Field labor will be kept to a minimum by pre-manufactured parts. Onsite welding is not necessary.
2. REINFORCED CONCRETE:
 - a. Concrete shall have minimum 28-day compressive strength of 3,000 psi and slump of 4" (+/- 1"), unless otherwise noted on the drawings.
 - b. Reinforcing shall be ASTM A615, grade 60.
3. STEEL COLUMNS:
 - a. Hollow structural steel tube minimum ASTM A500 grade B with a minimum wall thickness of 3/16".
 - b. Unless columns are direct buried, columns shall be anchored directly to concrete foundation with a minimum of four anchor rods to meet OSHA requirement 1926.755(a)(1).
4. STRUCTURAL FRAMING:

Hollow Structural Steel tube minimum ASTM500 grade B. "I" beams, tapered columns, or open channels shall not be accepted for primary beams. Frame will have a **STANDARD POLI-5000** finish. Color chosen from manufacturer's standard color chart.
5. COMPRESSION MEMBERS:

Compression rings of structural channel or welded plate minimum ASTM A36 or compression tubes or structural steel tube minimum ASTM A500 grade B shall only be used.
6. CONNECTION REQUIREMENTS:
 - a. Anchor bolts shall be ASTM F1554 (Grade 36) unless otherwise noted.
 - b. Structural fasteners shall be zinc plated ASTM A325 high strength bolts and A563 high strength nuts.
 - c. Structural fasteners shall be hidden within framing members wherever possible.
 - d. Structural fasteners shall be manufactured in the U.S
 - e. No field welding shall be required to construct the shelter.
 - f. All welds shall be free of burrs and inconsistencies.
 - g. Exposed fasteners shall be powder coated by manufacturer prior to shipment to match frame or roof colors as applicable.
 - h. Manufacturer shall provide extra structural and roofing fasteners.

7. ROOFING MATERIALS:

a. PRIMARY ROOF DECK: "R" PANEL METAL ROOFING (MR):

1. Roofing shall be 24-gauge ribbed galvalume steel sheets, with ribs 1 3/16" high and 12" on center.
2. Roof surface shall be painted with Kynar 500; contractor to supply manufacturer's physical color chips for selection by the landscape architect from the manufacturer's standards colors. Ceiling surface shall be a "wash coat" primer.
3. Roof panels shall be factory pre-cut to size and angled to provide ease of one-step installation.
4. Metal roofing trim shall match the color of the roof and shall be factory made of 26-gauge Kynar 500 painted steel.
5. Trim shall include panel ridge caps, hip caps, eave trim, splice channels, rake trim, roof peak cap, and corner trim as applicable for model selected. Trim may need to be cut to length and notched. Installation drawings shall have detailed information on how to cut and affix roof trim.
6. Ridge, hip, and valley caps shall be pre-formed with a single central bend to match the roof pitch and shall be hemmed on the sides.
7. Roof peak cap shall be pre-manufactured.
8. Manufacturer shall supply painted screws and butyl tape.

8. FINISHES:

a. STANDARD POLI-5000 FINISH:

- 1) Steel shall be cleaned, pretreated, and finished at a facility owned and directly supervised by the manufacturer.
- 2) Steel shall be shot blasted to SSPC-SP10 near-white blast cleaning. SSPC-SP2 hand tool cleaning will not be an acceptable alternative.
- 3) Parts shall be pretreated in a (3) stage iron phosphate or equal washer.
- 4) Epoxy primer powder coat shall be applied to parts for superior corrosion protection.
- 5) Top coat of Super Durable TGIC powder coat shall be applied over the epoxy primer.
- 6) Finish shall not have any VOC emissions.
- 7) Sample production parts shall have been tested and meet the following criteria:
 - a) Salt spray resistance per ASTM B 117/ ASTM D 1654 to 10,000 hours with no creep from scribe line and rating of 10.
 - b) Humidity resistance per ASTM D2247-02 to 5,000 hours with no loss of adhesion or blistering.
 - c) Color/UV resistance per ASTM G154-04 to 2,000 hours exposure, alternate cycles with results of no chalking, 75% color retention, color variation maximum 3.0 E variation CIE formula (before and after 2,000 hours exposure).
- 8) The manufacturer shall be PCI 4000 S Certified
- 9) Exposed fasteners for frame and ornamentation shall be powder coated to match structure.

PART 3 - EXECUTION

3.01 INSTALLERS STORAGE AND HANDLING

- A. Protect building products after arrival at destination from weather, sunlight, and damage.
- B. Installer shall store product elevated to allow air circulation and to not introduce mold, fungi decay or insects to the product.
- C. Product must be handled with protective straps or padded forks if lifting with mechanical equipment. Use of chain or cable to lift product into place will not be accepted and may void manufacturer's warranty.

3.02 ERECTION

A. INSTALLATION:

The shelter shall be erected by a Certified Installer who has a demonstrated ability to construct the shelter in the manner recommended by the shelter manufacturer.

B. GENERAL CONTRACTOR:

Interface with other work is to be coordinated by the customer or the customer's agent.

C. TOLERANCES:

Tolerances on steel structural members are set according to AISC construction practices, abided in the factory, and cannot be increased. No field slotting or opening of holes will be allowed. It is therefore essential that contractors conform to the tolerances specified on the installation drawings for anchor bolt or column layout details.

D. OSHA COMPLIANCE:

OSHA Compliance to Steel Erection Standard 29CRF 1926 Subpart R-Steel Erection.

3.03 REPAIR

- A. Do not attempt any field changes without first contacting Poligon.

3.04 FIELD OR SITE QUALITY CONTROL

- A. Field or Site Tests and Inspections are not required by Poligon but may be required by the customer or by the local building inspector.

END OF SECTION

TS2 - SPLASH PAD EQUIPMENT & INSTALLATION

Part 1 – GENERAL

1.1 SCOPE OF WORK

- A. Under this Section, the Contractor shall be responsible for the installation of a recreational aquatic play area consisting of water play features, water piping, electrical wiring, control system and installation of spray features. All work shall be performed as indicated on the specifications and include every aspect of work as obvious or implied and necessary to make the project complete and fully operational.

Splash pad size: 1,779 SF
Feature flow rate: 106 GPM

Apron size: 649 SF

- B. Work included in this section.

1. Supply all products and materials based on Aquatix base bid design.
2. Supply complete installation drawings for review and approval by owner.
3. Health Department submission and review fee.
4. County and or City permitting submission and review fee.
5. Provide onsite project supervision for project construction and coordination.
6. On site temporary power, water, waste and trash removal services.
7. Site drainage as needed to prevent wash outs and damage to installation work.
8. Stripping of site vegetation and topsoil. These materials to be stock piled on site.
9. Installation and compaction of granular fill under splash pad.
10. Bulk excavation and backfilling of plumbing trenches.
11. Installation of all splash pad embed fixtures and route plumbing to equipment systems.
12. Installation of splash pad domestic, single pass systems.
13. Construction of concrete perimeter apron.
14. Construction of concrete splash pad area.
15. Installation of Aquatix water structures onto splash pad.
16. Electrical power hookup to systems control panel and power distribution to activation device and any other system components.
17. Grounding requirements for splash pad reinforcement, embeds and systems.
18. Final hookup of waste piping from equipment systems and components.
19. Final clean-up of splash pad and equipment room prior to system startup.
20. Splash pad system startup and balancing by Aquatix certified technician.
21. Splash pad final site inspections as required by City, County and State Health Departments scheduling and overview.
22. Splash pad system operation instructions to owner's personnel.
23. Provide (2) operation and maintenance manuals.

1.2 CODES AND ORDINANCES

- A. All materials shall be in conformance with the City Standards, Uniform Building Codes, Uniform Plumbing Codes, Uniform National Plumbing Codes, and all other applicable codes and ordinances that govern the type of work. Nothing in the Plans and Specifications shall be construed to permit work not conforming to the applicable codes and ordinances.

- B. Should any change in the Plans and Specifications be required to comply with the applicable codes and ordinances, the Contractor shall notify the Architect at the time of submitting his bid. After entering into the Contract, the contractor shall be held responsible for completing all work necessary to meet these codes and ordinances without additional cost to the Owner.
- C. Should the Contractor perform any work that does not comply with all applicable codes and ordinances, he shall bear all costs arising in correcting the deficiencies.
- D. Permits and Fees: The contractor shall obtain and pay for all permits and fees required.

1.3 QUALITY ASSURANCE

- A. All products or items described herein shall be new, unless otherwise specified and shall be from the specified manufacturer. Products shall be complete in all respects and in perfect working order.
- B. Manufacturer directions and detailed drawings shall be followed in all cases where the manufacturer of articles used in this contract furnish directions covering points not shown in the drawings.
- C. All water play equipment, systems and design shall be from a single source manufacturer located in the United States of America.
- D. All mechanical systems are to be pre-fabricated, pre-plumbed, pre-wired, pre-tested and UL listed as provided by the specified manufacturer.
- E. To ensure the highest quality of splash pad infrastructure construction, the following guidelines are required:
 - 1. Sub-cut excavation under splash pad slab min. 18" for granular fill (modified subbase).
 - 2. Construction of splash pad structure to be 5" thick, 4000 psi concrete with #4 bars spaced 24" o.c. each way. Concrete pad to have required expansion joints every 20' x 20', saw-cut joints every 10' x 10' and thickened profiles at edge of pad and at each structure / embed.
 - 3. Construction of apron around perimeter of splash pad to be 5" thick, wire mesh reinforced, 3500 psi concrete. Apron to include expansion joint at perimeter edge of splash pad and needed saw-cut joints.
 - 4. Schedule 80 PVC plumbing to be utilized for all splash pad mechanical system piping.

1.4 COORDINATION

- A. The Contractor shall be charged with the responsibility of making arrangements for the coordination of delivery of all equipment to the job site.
- B. The Contractor shall place order for all water feature equipment immediately after award of bid and approval of product submittals to ensure adequate time for manufacturing and shipping. If any materials or equipment are not ordered in time, additional costs made by equipment manufacturers to their equipment in time to meet delivery schedule together with any special handling costs, shall be borne by the Contractor. No project extension shall be granted due to improper lead time in ordering.
- C. Contractor to coordinate with other contractors or subcontractors on this project.

1.5 EXPLANATION OF DRAWINGS

- A. Manufacturer drawings provided in the bid set are schematic and not for construction.
- B. Manufacturer to provide complete set of construction drawings per local codes, including: All design and construction drawings for splash pad project construction to consist of construction of the mechanical system, electrical and control systems, embed spray fixtures / drain box installation details, rain diverting electric valves, water play structure assembly / installation on concrete splash pad, equipment systems installation and hookups.

1.6 SUBMITTALS

A. Materials List

- 1. Complete materials list with data cut sheets (3 copies) shall be submitted prior to ordering or performing any work. Materials list shall include manufacturer's name, product name, product cut sheet, specifications, finishes and description of all materials and equipment to be used.

B. Shop Drawings

- 1. Equipment manufacturer shall provide three (3) sets of complete splash pad design and construction documents and water feature product installation drawings indicating all materials, equipment and installation required.

C. Equipment, Operation and Maintenance Manuals (to be provided prior to system start-up)

- 1. Prepare and deliver (2) manuals with the following information to the construction manager
 - a. Product cut sheets and parts sheets with all material and equipment installed. Include manufacturer's name, location and phone numbers for each product.
 - b. Complete operations and maintenance instructions for all products.

1.7 APPROVED INSTALLERS

- A. If the contractor has previous splash pad installation experience similar to this size and type of this project, they may request to be an approved Aquatix certified contractor. To be certified the contractor must submit the following information to Aquatix:
 - 1. (5) Referenced splash pad projects with owner contact information.
 - 2. Resume of lead field supervisor experience in splash pad projects.
 - 3. Conference call with Aquatix technical department to review project.

Part 2 – PRODUCTS

2.1 GENERAL

- A. Contractor shall be responsible for purchasing all specialized water feature mechanical and electrical materials and tools for the splash pad. Contractor is responsible for coordinating storage, acceptable to the owner, until contractor is ready to install water feature system equipment.

- B. Materials not listed within these specifications but required for the complete installation of the feature mechanical and/or electrical systems, shall be furnished by the contractor.
- C. Materials not specified herein, shall be provided in accordance with information shown on the drawings and the general provisions of this part of the specification.

2.2 SPECIFIED SPLASH PAD MATERIAL MANUFACTURER

- A. The following is the manufacturer/supplier for specified splash pad system equipment listed in this specification unless otherwise noted. The water spray features, prefabricated mechanical systems, design services and final commissioning shall be provided by:

Manufacturer:
 Aquatix by Landscape Structures
 6500 Carlson Drive
 Eden Prairie, MN 55346
 P: 1-877-632-0503.

Contact:
 Diane Witt, PLA
 Outdoor Recreation Products
 West Des Moines, IA
 P: 515.802.9861
 E: diane@outdoorrec.net

- B. All splash pad water play equipment specified and supplied to the contractor shall be supplied by a single equipment supplier/manufacturer located in the United States of America.
- C. The aquatic play products shall be suitable for installation in municipal and commercial aquatic facilities and public play areas.
- D. Products shall be manufactured by a company that has at least ten (10) years of experience in the design and engineering of children's aquatic play areas. The contractor or manufacturer must demonstrate meeting specifications by providing technical documents and drawings for review and approval by architect or owner.
- E. The equipment supplier shall have previously supplied splash pad system designs, drawings and equipment, similar in size and complexity for at least ten (10) years.

2.3 MATERIAL MANUFACTURER WARRANTY

- A. Warranty: Product warranty on all mechanical system components shall be a one-year warranty against defects in workmanship and materials. The warranty on all stainless-steel products shall be a twenty-five-year warranty against defects in workmanship and materials. All finishes on stainless steel structures shall have a two-year warranty. Warranty period starts on date of shipment. Warranties exclude normal wear and tear, abuse, improper installation and maintenance.
- B. Scope of Responsibility: The liability of the manufacturer under this warranty is limited to the replacement of defective materials within the warranty period.

2.4 WATER PLAY FEATURES

- A. As shown on the drawings and as provided by Aquatix by Landscape Structures.
- B. Water features have been chosen for a specific size, budget, age appropriate activity, interactive value, style and look of product, custom color palette, flow rate, durability, maintenance and ease of installation.

2.5 WATER FEATURE CONSTRUCTION

- A. Structure Components: The manufacturer shall supply a complete assembly including: pipe structure, nozzle(s), product attachments, decorative acrylic panels, two piece base skirt, two piece collar, mounting system, gasket, hardware, and fasteners. All components to be ADA compliant and free of sharp edges, pinch points and protruding nozzles.
- B. Stainless Steel Structures: Above grade water play structures to be fabricated of type 304L stainless steel designed to resist damage from wind speed of 100 mph and seismic Zone (4) classification. Structural tube to have standard 150# flanged connection on mounting base. Structures shall be surface mounted using epoxy anchor to concrete pad. Structures to be removable and interchangeable which allows them to be removable for winterization, maintenance, repair and swapping out products. Structure shape, size, function and design are specific to Aquatix by Landscape Structures.
- C. Fiberglass Structures: Above ground water play structures to be fabricated from fiberglass reinforced polyester resin. Structures are designed to resist damage from wind speed of 100 mph and seismic Zone (4) classification. Structural tube to have standard 150# flanged connection on mounting base. Structures shall be surface mounted using epoxy anchor to concrete pad. Structures to be removable and interchangeable which allows them to be removable for winterization, maintenance, repair and swapping out products. Structure shape, size, function and design are specific to Aquatix by Landscape Structures.
- D. Structure Mounting Systems: Structure to be anchored to a thickened concrete slab with 5/8 inch stainless steel studs. Studs to be drilled and anchored into place with fast setting two-part component adhesive per manufacturer installation instructions.
- E. Structure Finishes: All structure finishes are to be a multi-step industrial grade Polyurethane finishing system that is non-toxic, compatible with treated water, impact resistant, abrasion resistant and corrosion resistant. UV stabilizers are to be added to the finish coat to provide color protection in indoor or outdoor installations. Colors and coordinated color palettes are specific to Aquatix by Landscape Structures.
- F. Decorative Acrylic Panels: Acrylic panels to be fabricated from high quality, light weight, chemical resistant acrylic that has excellent outdoor stability. Colors and coordinated color palettes are specific to Aquatix by Landscape Structures.
- G. Structure Base Skirt: Base skirt to be fabricated from fiberglass reinforced plastic with durable finish and fit over base mounting flange and mounting hardware. Base skirt to be a two-piece fabrication with vandal proof stainless steel security fasteners for securing skirt to structure mounting flange. Colors and coordinated color palettes are specific to Aquatix by Landscape Structures.

- H. Structure Collar: Collar to be fabricated from urethane with durable finish and fit over the base skirt with mounting hardware. The collar is a two-piece fabrication with vandal proof stainless steel security fasteners and e-clips for securing the collar to the base skirt. Colors and coordinated color palettes are specific to Aquatix by Landscape Structures.
- I. Ground Spray Components: The manufacturer shall supply a complete assembly including: spray jet pod, non-slip cover plate, nozzle, vandal proof stainless steel hardware, and winterization cover plate. All components to be ADA compliant and free of sharp edges, pinch points and protruding nozzles
- J. Ground Spray Nozzles: To be fabricated of injection molded Kynar (PVDF) plastic, cast bronze or stainless steel. Nozzles to be debris and corrosion resistant to reduce clogging and necessary maintenance. Nozzles to be flush with the concrete.
- K. Ground Spray Jet Pods: Jet pods to be fabricated of heavy-duty gas welded PVC or stainless steel. Jet pods to be designed to be completely encapsulated into thickened concrete slab. The face plate shall be removable for nozzle alignment and cleaning by using the supplied security key.
- L. Ground Spray Cover Plate: The cover plate is to be constructed of a heavy-duty PVC plastic material with a colored, non-slip coating. The cover plate is to be secured to jet pod with tamper resistant stainless steel fasteners. Colors and coordinated color palettes are specific to Aquatix by Landscape Structures.
- M. Ground Spray Winterization: Ground spray embeds shall come complete with winterization cover plate. All water to be evacuated from structure by either blowing out plumbing lines or by gravity draining back to valve vaults. Prior to plugging, use of a biodegradable swimming pool anti-freeze is recommended.
- N. Ground Spray LED: To be fabricated of a stainless steel jet pod with an internal supply pipe with brass manual flow control valve. Jet to be illuminated by an internal LED light ring. Jet pod to have a decorative stainless steel grate cover.
- O. Ground Spray Jumping LED: To be a Flush-Mounted 'Sequencing' type Nozzle/LED Light Assembly, consisting of a stainless steel niche body with integral water stop key flange, threaded inserts to accept eye-bolts and jamb-nuts (included) for installation, in conjunction with Installer provided 3/8" threaded rod, flat washers and nuts; Stainless Steel Grate and Nozzle insert with choice from desired water spray patterns, Rapid-acting 24VDC sequencing valve with cord, one 2" (F) N.P.T. threaded drain return connection, one 1" (F) N.P.T. threaded supply connection, internal balancing valve and two (2) 3/4" (F) N.P.T. conduit connections (one for sequence valve and one for LED light) and one 12VDC high output 'Donut Hole' LED light fixture with cord ('White' or 'RGB') recessed into the niche.
- P. Products Flow Rate Design: Feature flow rates are designed for interaction value and product function. Products must have designed flow rate and supply lines as specified.

2.6 MECHANICAL SYSTEM- DOMESTIC

- A. Splash pad project design to consist of a single pass domestic water system to be housed in an above grade mechanical room/enclosure or in-ground vault located within fifty feet of splash pad. Domestic mechanical system shall be provided by Aquatix.
- B. Domestic operating system to be designed per local codes and consist of all mechanical components necessary for a fully operating splash pad system.

- C. Mechanical components: Splash pad manufacturer to supply a fully integrated domestic system consisting of: activation device, UL listed control panel, distribution manifold, and drain box. Mechanical enclosure or in-ground vault can be supplied by splash pad manufacturer on a per project basis.
- Q. Activation Device: Activation device to consist of a low voltage proximity sensor enclosed within a foot activation device or Aquavator structure. Patrons touch the top of the structure to send a signal to the control panel to activate water flow. Aquavator to be a 4" diameter tubular structure with UV resistant finish. Aquavator to be provided with complete assembly including stainless steel tubular structure, acrylic accent, graphic face plate, two-piece base skirt and two-piece collar. Colors and coordinated color palettes are specific to Aquatix by Landscape Structures.
- E. UL Listed Control Panel: Control panel to be a PLC interface UL listed and incorporate adjustable time clock controls to set hours of operation and set duration time of activated devices, individual controlled sequencing of spray events and activation bollard relay switches for splash pad system. Main power supply and connection to be provided by contractor.
- F. Distribution Manifold: Distribution manifold to be a pre-plumbed water delivery system from feature water supply to water play features. Distribution manifold to be constructed of heavy-duty gas welded schedule 80 PVC materials. Distribution manifold to be pre-plumbed with manual flow control valves that regulate water flow levels to each water element and electric solenoid valves for sequencing of water play elements.
- G. Drain Box: Drain box to consist of a 12" diameter plastic basin with grate top and 6" outlet. Each drain box has a nominal capacity of 120 gpm gravity supply.
- H. Mechanical Enclosure: Mechanical enclosure to be powder coated steel with lockable access panels and anchoring that is completely internal for vandalism concerns and adjustable for mounting on uneven surfaces. Enclosure to be ASSE 1060 Certified.
- D. Rain diverter valve box: Electric-controlled valve and below grade vault as provided by the manufacturer. Rain diverter valve box designed and provided by Aquatix.

Part 3 – EXECUTION

3.1 GENERAL

- A. Carefully examine all the contract documents and requirements that affect the work of this section. Prior to starting any work, notify the owner of defects requiring correction.
- B. Protect all materials and work completed from damage while completing this work.
- C. Immediately after unloading specialty aquatic products, contractor to inspect all materials and notify Manufacturer of any damaged goods or missing parts.
- D. Verify benchmark and spray pad location prior to layout.
- E. If field measurements differ from the construction drawing dimensions, notification shall be given to the Owner, Architect or Manufacturer prior to proceeding with work.
- F. Underground plumbing to be tested for water tightness prior to burying and placement of concrete. Air test must be witnessed and signed off by owner representative.

- G. All products to be installed straight, plumb and level.
- H. Contractor to thoroughly clean and flush out plumbing, water tank and splash pad surface prior to commissioning.
- I. The manufacturer shall furnish the purchaser with at least two sets of complete installation and operating manuals and as built drawings. The installation manual will illustrate the installation of the entire system.
- J. Upon completion of construction, the contractor shall coordinate with Aquatix and the owner for training of splash pad operations and maintenance. An Aquatix technician to provide final inspection of systems installation, operations and to provide owner training.

*****END OF SECTION*****

TS3 – PAVING SPECIALTIES

PART 1 -- GENERAL

1.1 SUMMARY

A. SECTION INCLUDES

1. Specifications and requirements for coloring and installation of:

- (a) PAVEMENT, PCC, 7 INCH, INTEGRAL COLOR
- (b) CONCRETE SURFACE STAIN

B. RELATED SECTIONS

1. TS4 – Concrete Formwork and Liners, TS7 – High Performance Coatings, TS12 – Non-skid Rubberized Coating

C. MEASUREMENT AND PAYMENT

1. PAVEMENT, PCC, 7 INCH, INTEGRAL COLOR shall be paid on a per square yard (SY) basis for integral colored pavement placed. This item includes all sub-grade preparation, excavation, sawn control joints, and expansion joints including sealant colored to match, or other items as listed in the estimate reference notes.
2. CONCRETE SURFACE STAIN shall be paid as per square foot (SF) each installed complete. Items considered incidental are, but not limited to, mockups, stenciling and/or taping, sandblasting, staining, and all items necessary to install complete as defined in the plans and details.

1.2 SUBMITTALS

A. Product Data: For the following products:

1. Integral Color
2. Water Based Stain
3. Curing compound and sealer with Matte Finish

B. Samples for Initial Selection: Manufacturer's color charts showing full range of colors available.

C. Samples for Final Selection: Contractor to provide physical samples of selected integral color products.

D. Qualification Data: For manufacturer and Installer.

E. Only one brand of cement shall be used on the project unless written permission to use another brand of cement is granted by the Project Manager and/or Owner Representative.

1.3 QUALITY ASSURANCE

A. Manufacturer Qualifications: Minimum 10 years of documented experience producing the specified products.

B. Installer Qualifications: Minimum 5 years of documented experience with work of similar scope and complexity required by this Project and acceptable to, or certified by, manufacturer of specified materials.

C. Material Source: Obtain each specified material from the same source to ensure consistency and uniformity.

D. Notification: Give a minimum 7 calendar days' notice to manufacturer's authorized field representative before date established for commencement of work.

1.4 REQUIRED MOCK-UP

- A. Contractor shall construct two (2) 6 foot by 6 foot mockups per each specified paving specialty at location to be selected by Landscape Architect. For each paving specialty type, the second of the two required mockups will be one additional color/type of the landscape architect's choosing.
- B. Provide individual mockups for each color and/or process required, including jointing and embedding technique.
- C. Construct mockup using materials, processes, and techniques required for the work, including curing procedures. Incorporate representative control, construction, and expansion joints according to Project requirements.
- D. Notify Architect and Owner a minimum of seven calendar days in advance of the date scheduled for each mockup construction.
- E. Obtain the Architect's and Owner's acceptance of each mockup prior to commencement of the work.
- F. Each mockup to remain until completion of the work to serve as a quality control standard for the work. Provide suitable protections to preclude damage to mockup.
- G. Demolish and remove each mockup from site when directed.

1.5 PROJECT CONDITIONS

- A. Schedule placement to minimize exposure to wind and hot sun before curing materials are applied.
- B. Do not place concrete if rain, frost, or snow is forecast within 24 hours of placement. Protect fresh concrete from moisture and freezing conditions.
- C. Compliance Standards: ACI 305R and ACI 306R.

PART 2 -- PRODUCTS

2.1 PAVEMENT, PCC, 7", INTEGRAL COLOR

- A. For Types 1 & 2 Integral colored concrete Types 1 and 2 with thickness of pavement as indicated in the plans.
 - 1. Type 1: Grey (to be selected from manufacturers standard colors)
 - 2. Type 2: Dark Grey (to be selected from manufacturers standard colors)
 - 3. Product: Integral color to be selected from manufacturers standard color palette for Types 1 & 2 by Owners Representative. Approved Integrally Colored Concrete include the following:
 - (a) Davis Colors (800) 356-4848
 - (b) Cemstone (651) 688-9292
 - (c) Or approved equal

2.2 CONCRETE SURFACE STAIN

- A. For Types 1-5, sandblasted and stained surface over standard concrete walk shall receive a medium sandblasting to 1/16" and receive a concrete stain on the recessed area as identified per plans and details. Sealer to be applied after staining is complete per stain manufacturer recommendations.
- B. Product: Water-Based Decorative Concrete Stain
 - 1. Water Based Floor Stain with Base Boost by Smith Paints 717-233-8781
 - 2. Or approved equal

C. Colors:

1. Type 1: Green (to be selected from manufacturer's Bright Lights Series colors)
2. Type 2: Yellow (to be selected from manufacturer's Bright Lights Series colors)
3. Type 3: Tan (to be selected from manufacturer's Bright Lights Series colors)
4. Type 4: Dark Grey (to be selected from manufacturer's Classic Series standard colors)
5. Type 5: Grey (to be selected from manufacturer's Classic Series standard colors)

2.3 CURING AND SEALING MATERIALS

- A. Curing and sealing product to be applied to integral colored concrete and concrete surface stain as recommended by the manufacturer of the sealing compound and the integral color and stain manufacturers.
- B. Clear, Solvent-Borne, Membrane-Forming Curing and Sealing Compound: ASTM C 309, non-yellowing, **matte finish**, clear liquid. Contractor responsible to ensure curing and sealing compound is compatible with stain and integral color products used.
1. CS-309-25 Acrylic Curing and Sealing Compound by W.R. Meadows 800-342-5973
 2. Acrylic Cure & Seal Matte Finish by Euclid Chemical 216-531-9596
 3. Or approved equal.

PART 3 -- EXECUTION

3.1 CONCRETE PLACEMENT

- A. General: Place and spread concrete to completely fill all space inside forms. Move concrete into place with square-tipped shovels or concrete rakes.
- B. Consolidate concrete by tamping or vibrating to provide a suitable surface for finishing.
- C. Prior to appearance of excess moisture or bleed water, screed concrete with wood or magnesium straight edge or mechanical vibrating screed.
- D. Continue concrete surface leveling and consolidation with highway magnesium straight edge and (or) magnesium bull float.
- E. Mechanically float concrete surfaces to required flatness and levelness as soon as concrete surface has taken its initial set and will support weight of a power float machine equipped with float shoes or combination blades and operator.
- F. Comply with ACI 302.1R for acceptable tolerances.

3.2 SEALING

- A. Prior to sealing, the following conditions must be present:
1. No evidence of free water on concrete surfaces to receive curing and sealing compound.
 2. Seal all specialty concrete with liquid membrane curing and sealing compounds as recommended by manufacturer and compatible with stain and integral color concrete material used.
 3. Apply two coats of specified curing and sealing compound according to manufacturer's written instructions.

3.3 PROTECTION OF FINISHED WORK

- A. Prohibit foot or vehicular traffic on the new concrete surface.
- B. Protect surface from damage throughout remainder of construction period until Final Acceptance of the work. If a covering material is necessary, surfaces must remain uncovered for a minimum of four days after which they may be covered with a new, smooth, nonstaining reinforced kraft curing paper. Plastic sheeting is unacceptable as a covering material.

******END OF SECTION******

TS4 – CAST IN PLACE CONCRETE – EXPOSED VERTICAL WALLS

PART 1 -- GENERAL

1.1 SECTION INCLUDES

- A. Reinforced cast-in-place concrete retaining wall (ramp)
- B. Reinforced cast-in-place concrete wall (leaf seat walls)

1.2 MEASUREMENT AND PAYMENT

- A. REINFORCED CAST-IN-PLACE CONCRETE RETAINING WALL (RAMP) as indicated on the plans, will be measured and paid for by the cubic yard (CY) as described in the estimate reference notes. This item includes labor, materials and equipment to furnish materials and construct the concrete retaining walls for the pedestrian ramp system at the playground. See B sheets and sheets S0.01 and S1.01 for details and specifications. Item is to be measured and paid for on a cubic yard basis of concrete retaining wall and footings constructed. All items necessary for complete excavation, compaction, formwork, reinforcing, testing and placement of concrete, backfill, reinforcing ties to ramp surface pavement, and any other items required for complete construction of the walls are considered incidental to this item. Mockups to be used for quality control, as stated in the spec, are also incidental to this item.
- B. REINFORCED CAST-IN-PLACE CONCRETE WALL (LEAF SEAT WALLS) as indicated on the plans, will be measured and paid for by the cubic foot (CF) as described in the estimate reference notes. This item includes labor, materials and equipment to furnish materials and construct the decorative concrete leaf seatwalls in the playground and plaza areas. Item is to be measured and paid for on a cubic foot basis of concrete seatwalls constructed. All items necessary for complete excavation, compaction, formwork, void forms, reinforcing, testing and placement of concrete, backfill and any other items required for complete construction of the walls are considered incidental to this item. Mockups to be used for quality control, as stated in the spec, are also incidental to this item.

1.3 REQUIREMENTS

- A. All formwork shall comply with all the recommendations of ACI 347 "Recommended Practice for Concrete Formwork" except as modified herein.
- B. The CONTRACTOR shall assume full responsibility for the design and construction of all formwork and placement of concrete.

1.4 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

A. Commercial Standards

- ACI 117 Specifications for Tolerances for Concrete Construction and Materials.
- ACI 301 Specifications for Structural Concrete for Buildings.
- ACI 347 Recommended Practice for Concrete Formwork.

1.5 SUBMITTALS

A. Product Data

- 1. Reinforcement
- 2. Supports for reinforcement
- 3. Forming accessories
- 4. Admixtures
- 5. Patching compounds
- 6. Waterstops

7. Joint systems
8. Others items as requested by landscape architect.

B. Shop Drawings

1. Reinforcement: Submit original shop drawings for fabrication, bending, and placement of concrete reinforcement. Comply with ACI 315 "Details and Detailing of Concrete Reinforcement" showing bar schedules, stirrup spacing, diagrams of bent bars, arrangement of concrete reinforcement. The shop drawings shall be prepared only by competent detailers, checked by the contractor prior to submission.
 - (a) The shop drawings shall show construction, contraction and isolation joint locations and the added reinforcement required at same.
 - (b) Obtain and coordinate information for sleeves and openings in concrete, which are required for the work of other trades. Make coordinated drawings showing size and location of openings and sleeves and incorporate this information on the reinforcing drawings.
 - (c) Only those splices indicated on the approved shop drawings will be permitted.
2. Provide elevations of all foundation walls and other structural elements to a minimum 1/4" scale.
3. Shop Drawings Formwork: Submit shop drawings for fabrication and erection of specific finished concrete surfaces. Show form construction including jointing, special form joint or reveals, location and pattern of form tie placement, and other items which affect exposed concrete visually. Architect's review is for general architectural applications and features only. Design of formwork for structural stability and efficiency is Contractor's responsibility, prepared by or under the supervision of a qualified professional engineer detailing fabrication, assembly, and support of formwork.
 - (a) Shoring and Reshoring: Indicate proposed schedule and sequence of stripping formwork, shoring removal, and reshoring installation and removal.
4. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
 - (a) Indicate amounts of mixing water to be withheld for later addition at project site.
5. Construction Joint Layout: Indicate proposed construction joints required to construct the structure.
 - (a) Location of construction joints is subject to approval of the landscape architect.
6. Contraction Joint Layout: Indicate proposed contraction joints required per applicable codes and drawings.
 - (a) Location of contraction joints is subject to approval of the landscape architect.

1.6 QUALITY ASSURANCE

A. Acceptable Installers

1. Installer shall have a minimum of five (5) years of experience pouring vertically formed architectural concrete. The manufacturer shall provide onsite review and inspection by a trained representative as required by this specification.

- B. The CONTRACTOR shall set and maintain concrete forms and perform finishing operations so as to ensure that the completed work conforms to the shape, line, grade and dimensions as shown on the Drawings. Formwork tolerances shall not exceed permissible deviations given in ACI 117. Use Class A formwork facing material offset. Use “very flat floor” finishing tolerance. Tolerance is the specified permissible variation from lines, grades or dimensions shown. Surface defects and irregularities are defined as finishes and are to be distinguished from tolerances.

PART 2 -- PRODUCTS

2.1 MATERIALS

- A. For all concrete surfaces to be unexposed, form surfaces that will be in contact with concrete shall be of No. 2 common or better lumber or other material producing equivalent finish.
- B. For all concrete surfaces to be exposed, finishes shall be:
 - 1. Smooth form, free of defects.
 - 2. Chamfer all exterior corners and edges.
 - 3. Formwork to be installed so pattern is continuous in appearance and panel seems cannot be seen.
 - 4. Evenly spaced rustication joints to be installed as indicated on the plans.
- C. Form ties shall be factory-fabricated, snap-off metal ties of design that will not allow form deflection and will not spall concrete upon removal. Wire ties will not be permitted. Ties shall be free of devices that will leave a hole larger than 1-inch or less than 1/4-inch in diameter in the concrete surface. The portion of the tie remaining in the concrete after removal of the exterior parts shall not project beyond the surface of the concrete and shall be at least 1-1/2 inches back from any surface of the concrete that will be exposed, painted, damp-proofed, waterproofed, or receive direct applications of plaster.
- D. Forms for exposed or painted surfaces shall be coated with a form release agent before reinforcement is placed. The form release agent shall be a commercial formulation of satisfactory and proven performance that will not bond with, stain, or adversely affect concrete surfaces, and will not impair subsequent treatment of concrete surfaces. Release agent shall be used as recommended in the manufacturers printed or written instructions. Forms for unexposed surfaces, other than retained in-place metal forms, may be wet with water in lieu of coating immediately before placing concrete, except that in cold weather with probable freezing temperatures, coating shall be mandatory. Surplus de-bonding agent on form surfaces, reinforcing steel and construction joints shall be removed before concrete is placed.
- E. Prior to coating with the above specified release agent, wood forms shall be sealed with a penetrating-type wood sealer. The sealer shall be applied in strict accordance with the manufacturer’s recommendations.

2.2 DESIGN

- A. Formwork must be designed, constructed, supported, braced and maintained so that it will safely support all dead and live loads to which it may be subjected. Formwork shall be sufficiently tight to prevent leakage of mortar so finished concrete will conform to shapes, lines, grades, and dimensions indicated on the Drawings.
- B. The weight of the formwork, freshly placed concrete, workmen and equipment, rate of placement and temperature, tamping and vibration of the concrete shall all be considered in the design of the formwork. Forms and false work to support roof and floor slabs shall be designed for a loading of at least that required by ACI 347.
- C. Contractor to submit shop drawings showing plan, elevation, and details to show the overall pattern with joint locations, form tie locations, and end, edge, and other special conditions.
- D. Material Requirements
 - 1. Form ties: Shall be made of either metal or fiberglass. Metal ties shall be designed to separate at least one inch back from the finished surface, leaving only a neat hole that can be plugged with patching material.

PART 3 -- EXECUTION

3.1 PRE-INSTALLATION REQUIREMENTS

- A. Contractor to conduct a pre-installation meeting one (2) weeks in advance of construction of a full-scale mockup with the landscape architect and applicable subcontractors.
- B. Mockup: Contractor shall construct a mockup onsite using the same materials, methods, and work force that will be used for the overall work. At the contractor's discretion and risk, the mockup may be requested to be incorporated into the final product, pending acceptance by Engineer and Owner on quality and workmanship.
 - 1. Size: 50 sq. ft. or larger if needed to adequately illustrate workmanship and finish.
 - 2. Include an area large enough to demonstrate surface finish and texture, rustication joints, chamfers, form ties, expansion joints if required, and other representative elements of the wall system.
 - 3. Protect the mockup through substantial completion of the project.

3.2 CONSTRUCTION

- A. Formwork - Contractor shall strictly follow all manufacturer procedures for handling, storage, installation, and removal of formwork. Forms shall be designed, constructed and maintained to insure that after removal of forms the finished concrete members will have true surfaces free of deformities, bulges or visible seams, conforming accurately to the indicated shapes, dimensions, lines, elevations, and positions. Recommendations given in ACI 347 shall be followed. Form surfaces that will be in contact with concrete shall be thoroughly cleaned before each use.
- B. Studs - Studs shall be spaced to prevent deflection of form material. Forms and joints shall be sufficiently tight to prevent leakage of grout and cement paste during placing of concrete. Joints in forms shall be arranged vertically or horizontally to conform to the pattern of the design. Insofar as practicable, juncture of formwork panels shall occur at architectural lines, vertical control joints, including alignment with masonry control joints, and construction joints. Forms placed on successive units for continuous surfaces shall be fitted to accurate alignment to assure smooth completed surfaces free from irregularities. Temporary openings shall be arranged in wall and column forms and where otherwise required to facilitate cleaning and inspection. Forms shall be readily removable without impact, shock or damage to the concrete.
- C. External Corners - External corners of walls that will be exposed shall be chamfered by moldings placed in the forms unless the drawing specifically states that chamfering is to be omitted.

3.3 FORM TIES

- A. Embedded Ties: Wire ties for holding forms will not be permitted. No form-tying device or part thereof, other than metal, shall be left embedded in the concrete. Ties shall not be removed in such manner as to leave a hole extending through the interior of the concrete members. The use of snap-ties which cause spalling of the concrete upon form stripping or tie removal will not be permitted. If steel panel forms are used, rubber grommets shall be provided where the ties pass through the form in order to prevent loss of cement paste. Where metal rods extending through the concrete are used to support or to strengthen forms, the rods shall remain embedded and shall terminate not less than 1-1/2-inch back from the formed face or faces of the concrete.
- B. Removable Ties: Where taper ties are approved for use, after the taper tie is removed, the hole shall be thoroughly cleaned and roughened for bond. A precast neoprene or polyurethane tapered plug shall be located at the wall centerline. The hole shall be completely filled with non-shrink or regular cement grout. Exposed faces of walls shall have at least the outer 2 inches of the exposed face filled with a cement grout which shall match the color and texture of the surrounding wall surface. The CONTRACTOR shall be responsible for water-tightness and any repairs needed.

3.4 CONCRETE PLACEMENT

- A. Ready-mix concrete shall comply with the requirements of ASTM C 94 and ACI 304. All plant and transporting equipment shall comply with the concrete plant standards and truck mixer and agitator standards of the National Ready Mix Concrete Association.
- B. Cold weather mixing procedures shall be submitted to the architect for approval.
- C. Notify Architect and Owner's Inspector at least 36 hours (1 1/2 regular working days) before each pour so that forms and reinforcing may be examined. Do not place concrete until inspection has been made or waived.
- D. Preplacement Inspection: Before placing concrete, inspect and complete formwork installation, steel, and items to be embedded or cast-in. Notify other crafts to permit installation of their work; cooperate with other trades in setting such work. Moisten wood forms immediately before placing concrete where form coatings are not used.
 - 1. Apply temporary protective covering to lower 2' of finished walls adjacent to poured floor slabs and similar conditions, and guard against spattering during placement.
- E. General: Comply with ACI 304 "Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete," and as herein specified.
 - 1. Deposit concrete continuously or in layers of such thickness that no concrete will be placed on concrete which has hardened sufficiently to cause the formation of seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as herein specified. Deposit concrete as nearly as practicable to its final location to avoid segregation. Segregated concrete sections are defective and will not be accepted.
- F. Placing Concrete in Forms: Deposit concrete in forms in horizontal layers not deeper than 18" and in a manner to avoid inclined construction joints. Where placement consists of several layers, place each layer while preceding layer is still plastic to avoid cold joints. Use internal vibrators penetrating both the top and preceding layers.
- G. Consolidate placed concrete by mechanical vibrating equipment supplemented by hand-spading, rodding or tamping. Use equipment and procedures for consolidation of concrete in accordance with ACI recommended practices.
- H. Use and type of vibrators shall conform to ACI 309 "Recommended Practice for Consolidation of Concrete." Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations not farther than visible effectiveness of machine. Place vibrators to rapidly penetrate placed layer and at least 6" into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to set. At each insertion limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing segregation of mix.

3.5 FORM REMOVAL

- A. Form release agent: Apply following manufacturer's recommendations.
- B. Form stripping and related construction shall avoid creating defects in the finished surface.
- C. Forms shall be removed in a manner to ensure complete safety of the structure. Where the structure as a whole is supported on shores, forms for beam and girder sides, columns, and similar vertical structural members may be removed after 48 hours, provided concrete is sufficiently hard not to be injured thereby. Supporting forms or shoring shall not be removed until structural members have acquired sufficient strength to support safely their own weight and any construction and/or storage load to which they may be subjected, but in no case shall they be removed in less than 7 days, nor shall forms used for curing be removed before expiration of curing period. Care shall be taken to avoid spalling the concrete surface or damaging concrete edges. Wood forms shall be completely removed.

- D. Supporting forms or shoring shall not be removed until strength of control test specimens has attained a value of at least 3,000 psi for column and 3,000 psi for all other work. Test specimens required for control tests to determine form removal time shall be provided in numbers as directed and shall be in addition to those otherwise required for concrete control. Test specimens shall be removed from molds after 24 hours and stored adjacent to that portion of the structure which they represent and shall receive, insofar as practicable, the same protection from the elements during curing as is given those portions of the structure which they represent, and shall not be removed from the structure for transmittal to the laboratory prior to expiration of three-fourths of the proposed period before removal of the forms. Care shall be exercised to assure that the newly unsupported portions of the structure are not subjected to heavy construction or material loading.
- E. Forms for all parts of the work not specifically mentioned herein shall remain in place for periods of time as determined by the ENGINEER.
- F. Recommendations for shoring given in ACI 347 shall be followed for all re-shoring.

3.6 PROTECTION OF FINISHED WORK

- A. Protect surface from damage throughout remainder of construction period until Final Acceptance of the work. If a covering material is necessary, surfaces must remain uncovered for a minimum of four days after which they may be covered with a new, smooth, nonstaining reinforced kraft curing paper. Plastic sheeting is unacceptable as a covering material.

****** END OF SECTION ******

TS5 – CAST STONE

PART 1 -- PART 1 GENERAL

1.1 SECTION INCLUDES - CAST STONE.

- A. Scope - All labor, materials and equipment to provide the Cast Stone shown on architectural drawings and as described in this specification.
 - 1. Manufacturer shall comply with all material set forth in this specification.
 - 2. Installing contractor shall unload, store, furnish all anchors if not supplied by manufacturer, set, patch, clean and seal (optional) the Cast Stone as required.

1.2 METHOD OF MEASUREMENT AND PAYMENT

- A. Measurement and compensation for the following items shall be paid according to the referenced specification or as modified below.
 - 1. Measurement and payment for CAST STONE CUSTOM WALLS (LEAF SEATWALLS) will be by the cubic foot (CF) of wall installed complete at the bid price for the additional cost to upgrade the material from reinforced cast-in-place concrete. The following shall be considered incidental to the unit price: testing, furnishing of product samples, procurement and delivery of manufactured cast stone, staging, installation, silicon sealant of joints, repairs and/or replacements of cast stone units necessitated by contractor mishandling and as deemed necessary by the landscape architect, and site cleanup.

1.3 REFERENCES

- A. ACI 318 – Building Code Requirements for Reinforced Concrete.
- B. ASTM A 185 - Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete.
- C. ASTM A 615/A 615M - Standard Specification for Deformed and Plain Billet-Steel Bars for Reinforced Concrete.
- D. ASTM C 33 – Standard Specification for Concrete Aggregates.
- E. ASTM C 150 - Standard Specification for Portland Cement.
- F. ASTM C 173 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volume Method.
- G. ASTM C 231 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
- H. ASTM C 260 - Standard Specification for Air-Entrained Admixtures for Concrete.
- I. ASTM C 270 - Standard Specification for Mortar for Unit Masonry.
- J. ASTM C 426 – Standard Test Method for Linear Shrinkage of Concrete Masonry Units
- K. ASTM C 494/C 494M - Standard Specification for Chemical Admixtures for Concrete.
- L. ASTM C 618 – Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete.
- M. ASTM C 666 – Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing.
- N. ASTM C 979 - Standard Specification for Coloring Pigments for Integrally Pigmented Concrete.
- O. ASTM C 989 – Standard Specification for Ground Granulated Blast-Furnace Slag for Use in Concrete.
- P. ASTM C 1194 - Standard Test Method for Compressive Strength of Architectural Cast Stone.
- Q. ASTM C 1195 - Standard Test Method for Absorption of Architectural Cast Stone.
- R. ASTM C 1364 - Standard Specification for Architectural Cast Stone.

- S. ASTM D 2244 – Standard Test Method for Calculation of Color Differences from Instrumentally Measured Color Coordinates.

1.4 DEFINITIONS

- A. Cast Stone – a refined architectural concrete building unit manufactured to simulate natural cut stone.

1.5 SUBMITTALS

- A. Contractor to provide color and texture chart for initial color selection.
- B. Samples: Submit (4) 6" x 6" samples of the Cast Stone that represent the specific finish and color proposed to be furnished for the project.
- C. Test results: Submit manufacturers test results of Cast Stone previously made by the manufacturer in the last 90 days, for the following:
 - 1. Compressive Strength
 - 2. Absorption
 - 3. Air Content (wet cast)
- D. Shop Drawings: Prepare Project-specific information, drawn accurately to scale including,
 - 1. Detail drawings of each distinct unit required to assemble cast stone walls.
 - (a) Piece profiles
 - (b) Cross-sections
 - (c) Reinforcement
 - (d) Exposed faces
 - (e) Arrangement of Joints
 - (f) Anchoring methods
 - (g) Anchors
 - (h) Annotation of stone types and their location

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications:
 - 1. A current producer member of Cast Stone Institute, with a minimum of 10 years of experience in producing cast stone of types required for project.
 - 2. Manufacturer must follow EPA (Environmental Protection Agency) and DNR (Department of Natural Resources) regulations regarding:
 - (a) Permits
 - (b) Storm water runoff
 - (c) Waste water management
 - (d) Air emission control
 - 3. Manufacturer shall have sufficient plant facilities to produce the shapes, quantities and size of Cast Stone required in accordance with the project schedule.
 - 4. Manufacturer shall submit a written list of projects similar in scope and at least three (3) years of age, architect and contractor references.

B. Standards:

1. Comply with the requirements of the Cast Stone Institute Technical Manual and the project specifications. Where a conflict may occur, the contract documents shall prevail.

PART 2 -- PART 2 PRODUCTS

2.1 CAST STONE

A. Manufacturer

1. Edwards Cast Stone
777 Edwards Road
Dubuque, Iowa 52003
563-556-0535
2. Or Approved Equal Manufacturer of Cast Stone

B. Casting method

1. Wet cast

C. Comply with ASTM C 1364

D. Physical properties: Provide the following:

1. Compressive Strength - ASTM C 1194: 6,500 psi (45 Map) minimum for products at 28 days.
2. Absorption - ASTM C 1195: 6% maximum by the cold water method, or 10% maximum by the boiling method for products at 28 days.
3. Air Content – ASTM C173 or C 231, for wet cast product shall be 4-8% for units exposed to freeze-thaw environments. Air entrainment is not required for VDT products.
4. Freeze-thaw – ASTM C 1364: The CPWL shall be less than 5% after 300 cycles of freezing and thawing.
5. Linear Shrinkage – ASTM C 426: Shrinkage shall not exceed 0.065%.

E. Job Site Testing: One (1) sample from production units may be selected at random from the field for each 500 cubic feet delivered to the job site.

1. Three (3) field cut cube specimens for each of the samples shall have an average minimum compressive strength of not less than 85% with no single specimen testing less than 75% of design strength as allowed by ACI 318
2. Three (3) field cut cube specimens from each of these samples shall have an average maximum cold-water absorption of 6%
3. Field specimens shall be tested in accordance with ASTM C 1194 and C1195

2.2 RAW MATERIALS

- A. Portland cement – Type I or Type III, white and/or grey, ASTM C 150.
- B. Coarse aggregates - Granite, quartz or limestone, ASTM C 33, except for gradation, and are optional for the VDT casting method.
- C. Fine aggregates - Manufactured or natural sands, ASTM C 33, except for gradation.
- D. Colors - Inorganic iron oxide pigments, ASTM C 979 except that carbon black pigments shall not be used.
- E. Admixtures- Comply with the following:
 1. ASTM C 260 for air-entraining admixtures.
 2. ASTM C 494/C 495M Types A - G for water reducing, retarding, accelerating and high range admixtures.

3. Other admixtures: integral water repellents and other chemicals, for which no ASTM Standard exists, shall be previously established as suitable for use in concrete by proven field performance or through laboratory testing.
 4. ASTM C 618 mineral admixtures of dark and variable colors shall not be used in surfaces intended to be exposed to view.
 5. ASTM C 989 granulated blast furnace slag may be used to improve physical properties. Tests are required to verify these features.
- F. Water – Potable
- G. Reinforcing bars (as required):
1. ASTM A 615/A 615M. Grade 40 or 60 steel galvanized or epoxy coated when cover is less than 1.5 in. (37 mm).
 2. Welded Wire Fabric: ASTM A 185 where applicable for wet cast units.
 3. All anchors, dowels and other anchoring devices and shims shall be standard building stone anchors commercially available in a non-corrosive material such as zinc plated, galvanized steel, brass, or stainless steel Type 302 or 304.

2.3 COLOR AND FINISH

- A. Color to be selected by the landscape architect from manufacturer's physical samples of manufacturer's standard colors. Contractor to deliver physical samples to the landscape architect for color selection.
- B. All surfaces intended to be exposed to view shall have a fine-grained texture similar to natural stone, with no air voids in excess of 1/32 in. (0.8 mm) and the density of such voids shall be less than 3 occurrences per any 1 in.2 (25 mm2) and not obvious under direct daylight illumination at a 5 ft (1.5m) distance.
- C. Units shall exhibit a texture equal to the approved sample when viewed under direct daylight illumination at a 10 ft (3 m) distance.
 1. ASTM D 2244 permissible variation in color between units of comparable age subjected to similar weathering exposure.
 - (a) Total color difference – not greater than 6 units.
 - (b) Total hue difference – not greater than 2 units.
- D. All Cast Stone shall be hand-sanded and acid washed with a 10% muriatic acid solution.
- E. Minor chipping resulting from shipment and delivery shall not be grounds for rejection. Minor chips shall not be obvious under direct daylight illumination from an 8-ft distance.
- F. The occurrence of crazing or efflorescence shall not constitute a cause for rejection.
- G. Remove cement film, if required, from exposed surfaces prior to packaging for shipment

2.4 REINFORCING

- A. Minimum reinforcing of the cast stone units shall be determined by the manufacturer's structural engineer licensed in the State of Iowa and documented in manufacturer's signed shop drawings. Reinforcing shall account for safe handling and structural stress in addition to final in situ placement of cast stone.
- B. Reinforcement shall be noncorrosive where faces exposed to weather are covered with less than 1.5 in. (38 mm) of concrete material. All reinforcement shall have minimum coverage of twice the diameter of the bars or as required by the manufacturer.
- C. Welded wire fabric reinforcing shall not be used in dry cast products.

2.5 CURING

- A. Cure units in a warm curing chamber approximately 100°F (37.8°C) at 95 percent relative humidity for approximately 12 hours, or cure in a 95 percent moist environment at a minimum 70°F (21.1°C) for 16 hours after casting. Additional yard curing at 95 percent relative humidity shall be 350 degree-days (i.e. 7 days @ 50°F (10°C) or 5 days @ 70°F (21°C)) prior to shipping. Form cured units shall be protected from moisture evaporation with curing blankets or curing compounds after casting.

2.6 MANUFACTURING TOLERANCES

- A. Cross section dimensions shall not deviate by more than $\pm 1/8$ in. (3 mm) from approved dimensions.
- B. Length of units shall not deviate by more than length/ 360 or $\pm 1/8$ in. (3 mm), whichever is greater, not to exceed $\pm 1/4$ in. (6 mm).
 - 1. Maximum length of any unit shall not exceed 12 times the average thickness of such unit unless otherwise agreed by the manufacturer.
- C. Warp, bow or twist of units shall not exceed length/ 360 or $\pm 1/8$ in. (3 mm), whichever is greater.
- D. Location of dowel holes, anchor slots, flashing grooves, false joints and similar features – On formed sides of unit, $1/8$ in. (3 mm), on unformed sides of unit, $3/8$ in. (9 mm) maximum deviation.

2.7 PRODUCTION QUALITY CONTROL

- A. Testing.
 - 1. Test compressive strength and absorption from specimens selected at random from plant production.
 - 2. Samples shall be taken and tested from every 500 (14 m³) cubic feet of product produced.
 - 3. Perform tests in accordance ASTM C 1194 and C 1195.
 - 4. New and existing mix designs shall be tested for strength, absorption and Freeze Thaw compliance prior to producing units.

2.8 DELIVERY, STORAGE AND HANDLING

- A. Piece Marks
 - 1. Clearly label each piece with project name, piece weight and corresponding identifier from shop drawings.
- B. Packaging
 - 1. Protect cast stone units from stains or damage during shipping and storage.
 - 2. Provide pallet label consisting of job name, piece identifier and total pallet weight.
 - 3. Provide detailed shipping information consisting of each item per pallet per truck.

PART 3 -- DELIVERY, STORAGE AND HANDLING

3.1 EXAMINATION

- A. Installing contractor shall check Cast Stone materials for fit and finish prior to installation. Do not set unacceptable units.

3.2 SETTING TOLERANCES

- A. Comply with Cast Stone Institute Technical Manual
- B. Set stones $1/8$ in. (3 mm) or less, within the plane of adjacent units.
- C. Joints, plus - $1/16$ in. (1.5 mm), minus - $1/8$ in. (3 mm).

3.3 JOINTING

A. Joint size:

1. At stone/brick joints 3/8 in. (9.5 cm).
2. At stone/stone joints in vertical position 1/4 in. (6 mm) (3/8 in. (9.5 mm) optional).
3. Stone/stone joints exposed on top 3/8 in. (9.5 mm).

B. Joint materials:

1. Mortar, Type N, ASTM C 270.
2. Use a full bed of mortar at all bed joints.
3. Flush vertical joints full with mortar.
4. Leave all joints with exposed tops or under relieving angles open for sealant.
5. Leave head joints in copings and projecting components open for sealant.

C. Location of joints:

1. As shown on shop drawings.
2. At control and expansion joints unless otherwise shown.

3.4 SETTING

- A. Drench units with clean water prior to setting.
- B. Fill dowel holes and anchor slots completely with mortar or non-shrink grout.
- C. Set units in full bed of mortar, unless otherwise detailed.
- D. Rake mortar joints 3/4 in. (18 mm) in. for pointing.
- E. Remove excess mortar from unit faces immediately after setting.
- F. Tuck point unit joints to a slight concave profile.

3.5 JOINT PROTECTION

- A. Prime ends of units, insert properly sized backing rod and install required sealant.

3.6 REPAIR AND CLEANING

- A. Repair chips with touchup materials furnished by manufacturer.
- B. Saturate units to be cleaned prior to applying an approved masonry cleaner.
- C. Consult with manufacturer for appropriate cleaners.

3.7 INSPECTION AND ACCEPTANCE

- A. Do not field apply water repellent until repair, cleaning, inspection and acceptance is completed.

*****END OF SECTION*****

TS6 – HANDRAILS AND RAILINGS

PART 1 -- GENERAL

1.1 SECTION INCLUDES:

- A. This section includes all labor, materials, equipment, supervision and all items of pertinence required to provide and install guardrails and handrails as indicated on plans and details
 - 1. Contractor shall furnish and install guardrails and handrails as indicated complete
 - 2. All guardrails and handrails shall be designed and installed in conformance with current OSHA and State Building Code standards.
 - 3. Complete shop drawings of all components, certified by a professional structural engineer, shall be submitted.

1.2 MEASUREMENT AND PAYMENT

- A. Handrails as indicated on the plans and details, complete-in-place and accepted will be measured and paid for by lineal foot (LF) quantity measured down centerline of the handrails.
- B. Guardrails as indicated on the plans will be paid for as an incidental item to playground equipment as noted in the plans.
- C. All of the above items include furnishing all labor, materials, equipment, fabrication, installation, supervision and items of pertinence required to fabricate and install all guardrails or handrails.

1.3 SUBMITTALS

- A. Qualifications:
 - 1. Furnish (5) five reference projects of similar size and scope
 - 2. Provide not less than five years of documented experience for handrail manufacturer/fabrication
- B. Shop Drawings:
 - 1. Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories.
 - 2. Include erection drawings, elevations, and details of connections and metal work.
 - 3. Indicate welded connections using standard AWS A2.0 welding symbols; indicate net weld lengths.
 - 4. Indicate layout of handrails and guardrails with dimensions, details, and finishes of components, accessories, and post foundations.
- C. Drawing Certification: Railing shall be certified by a Professional Structural Engineer experienced in the design of guardrails and handrails and licensed in the State of Iowa.
- D. It is the Contractor's responsibility to field verify all dimensions prior to the fabrication of any handrail or guardrail.

1.4 QUALITY ASSURANCE

- A. Regulatory Requirements:
 - 1. Components and installation are to be in accordance with state and local code authorities
 - 2. Components and installation are to follow current ADA and ICC/ANSI A117.1 guidelines.
- B. Certifications
 - 1. Furnish certification that all components and fittings are furnished by the same manufacturer or approved by the primary component manufacturer.

2. Furnish certification that components were installed in accordance to the manufacturer's engineering data to meet the specified design loads.
 3. Design, fabricate, and test railing assemblies in accordance with the most stringent requirements of ASTM E 985 and applicable local code.
- C. Load Conditions:
1. Design railing assembly, wall rails, and attachments to resist force of 100 lbs per lf (333 n) at any point without damage or permanent set and concentrated load of 300lbs. Test in accordance with ASTM E 935.
- D. Pre-Installation Meeting
1. Prior to the beginning of work, conduct a pre-job conference at the job site.
 2. Provide seven calendar days advance written notice ensuring the attendance by competent authorized representatives of the fabricator, building owner's representative, architect and subcontractors whose work interfaces with the work of this section.
 3. Review the specifications to determine any potential problems, changes, scheduling, unique job site conditions, installation requirements and procedures and any other information pertinent to the installation.
- E. Materials and Methods:
1. Codes and Standards:
 - (a) American Welding Society (AWS).
 - (b) American Society for Testing and Materials (ASTM).
 - (c) National Association for Architectural Metal Manufacturers (NAAMM).
- F. Welding:
1. Comply with American Welding (AWS) Structural Welding Code D1.1.
 2. Qualify welding procedures, welders, and welding operations in accordance with AWS Standard Qualification Procedure.
- G. Fabricator Qualifications:
1. Guardrail and handrail fabrication to be completed by an experienced metal fabricator specializing in manufacturing products specified in this section, with not less than five years of documented experience.
 2. Fabricator will have capacity to produce the required components without causing a delay in the project work.
 3. Fabricator shall perform all portions of fabrication complete.

1.5 ORDERING, DELIVERY, HANDLING, AND STORAGE

- A. Contractor shall execute all phases of work, including ordering, shipping, storage, and installation.
- B. Assure handrails and guardrails are not damaged during shipping, storage, and installation; protect all elements from damage by construction and clean-up activities following installation until acceptance of project by Owner.

PART 2 -- PRODUCTS

2.1 Handrails

- A. Galvanized steel: ASTM A 500, grade B cold-formed structural tubing, ASTM A 123 Zinc (Hot Dip Galvanized coatings for all steel products).

- B. Welding fittings: factory- or shop-welded from matching pipe or tube; seams continuously welded; all welds shall be ground smooth.
- C. Exposed fasteners: no exposed bolts or screws.
- D. Straight splice connectors: steel concealed spigots.
- E. Structural sizing is the responsibility of the contractor to ensure structural compliance of all handrails.
- F. Finish coating system to be galvanized with Duplex system per High Performance Coating technical specification TS7.
 - 1. Color to match existing handrails on-site noted to be protected unless specified otherwise on the drawings. Contractor to provide color matching color chips for approval.

2.2 Guardrails

A. Approved Manufacturer:

Landscape Structures

Contact: Diane Witt

Phone: 402-289-0400

Email: diane@outdoorrec.net

****Or approved equal****

- B. Galvanized steel: ASTM A 500, grade B cold-formed structural tubing, ASTM A 123 Zinc (Hot Dip Galvanized coatings for all steel products).
- C. Welding fittings: factory- or shop-welded from matching pipe or tube; seams continuously welded; all welds shall be ground smooth.
- D. Exposed fasteners: no exposed bolts or screws.
- E. Straight splice connectors: steel concealed spigots.
- F. Structural sizing is the responsibility of the manufacturer and contractor to ensure structural compliance of all guardrails.
- G. Finish coating system to be manufacturer's proprietary Proshield coating system.
 - 1. Color to be selected from manufacturer's standard colors.

PART 3 -- EXECUTION

3.1 EXAMINATION AND PREPARATION

- A. Verify that field conditions are acceptable and completed to final grades and elevations, and are ready to receive work. Field verify dimensions.
- B. Make provisions for erection loads with temporary bracing and keep work in alignment.

3.2 FABRICATION

- A. Form metal fabrications from materials of size, thickness, and shapes indicated, but not less than that needed to comply with performance requirements indicated.
- B. Work to dimensions indicated or accepted on shop drawings, using proven details of fabrication and support.
- C. Use type of materials indicated or specified for various components of each metal fabrication.
- D. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges.

- E. Allow for thermal movements resulting from the following maximum change (range) in ambient temperature in the fabrication of metal assemblies to prevent buckling, opening up of joints, and over stressing of welds and fasteners.
 - 1. Temperature Change (Range): 100 deg. F (55.5 deg. C).
- F. Base design calculations on actual surface temperatures of metal due to both solar heat gain and nighttime sky heat loss.
- G. Shear and punch metals cleanly and accurately; remove burrs.
- H. Ease exposed edges to a radius of approximately 1/32 inch, unless otherwise indicated. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
- I. Weld corners and seams continuously to comply with AWS recommendations.
- J. Fabricate support brackets and other anchoring devices to provide adequate support for intended use.
- K. Pre-assemble in shop to greatest extent possible to minimize field splicing and assembly; disassemble units only as necessary for shipping and handling limitations. Use connections which maintain structural value of joined pieces. Clearly mark units for re-assembly and coordinated installation.
- L. Fabricate joints which will be exposed to weather in a manner to exclude water or provide weep holes where water may accumulate.

3.3 INSTALLATION

- A. Place anchor bolts and/or core drillings as shown in the plans and per fabricator's instruction.
- B. Check each post for vertical and top alignment.
- C. Install panels plumb and level, accurately fitted, free from distortion or defects.
- D. Allow for erection loads and provide temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.
- E. Contractor's responsibility to verify installed railing dimensions meets drawings and code requirements.

3.4 CLEANING

- A. Leave the site in a neat, clean condition.
- B. Upon completion of the work, remove from site all excess materials, debris, tools, and equipment. Repair damage resulting from work.

*******END OF SECTION*******

TS7 - HIGH PERFORMANCE COATINGS

PART 1 -- GENERAL

1.1 SECTION INCLUDES:

- A. High performance coatings to be galvanized with duplex system.
- B. Finish to be applied to handrails as indicated on the plan sheets, and all other metal components identified in the plans unless noted otherwise in the drawings or other technical specifications for the project.

1.2 SUMMARY

- A. Painting includes surface preparation, priming, finish coats, inspection, cleaning, and touch-up of surfaces and equipment in addition to shop priming and surface treatment.
- B. The painting subcontractor shall examine the specifications for the various other trades and shall thoroughly become familiar with all of their provisions regarding their painting; painting subcontractor shall understand that all surfaces that are left unfinished by requirements of other specifications shall be painted or finished as a part of this contract.
- C. Unless otherwise approved by the Engineer in writing, all coatings applied under a single paint system shall be the product of a single manufacturer.
- D. All paints supplied for projects in the State of Minnesota shall comply with Minnesota statutes 115A.9651 Toxics in Specified Products.

1.3 SUBMITTALS

- A. Information submitted shall include, but not be limited to the following:
 - 1. Paint manufacturer's name with paint specification details.
 - 2. Color charts and physical sample chips of materials for selection of color.
 - 3. Technical and material safety data sheets on each paint material used.
 - 4. Manufacturer's recommended application procedures.

1.4 QUALITY ASSURANCE

- A. The label of Containers shall include the manufacturer's name, type of paint (stock number), color and instructions for reducing where applicable, mixing and application instructions, drying or curing time, storage and temperature limits.
- B. The painting work shall be in conformance with the following applicable standards:
 - 1. Steel Structures Painting Council (SSPC) Surface Preparation Specifications.
 - (a) SP 1 - Solvent cleaning. Removes oil grease, soil, etc., with other methods to remove rust, paint, and mill scale.
 - (b) SP 3 - Power Tool Cleaning. Removes loose material. Not intended to remove all scale or rust.
 - (c) SP 5 - White Metal Blast Cleaning. Removes all scale, rust, foreign matter. Leaves surface gray-white uniform metallic color.
 - (d) SP 6 - Commercial Blast Cleaning. Two-thirds of each square inch free of all visible residues; remainder only light discoloration.
 - (e) SP 7 - Brush-Off Blast Cleaning. Removes only loose material, remaining surface tight and abraded to give anchor pattern.
 - (f) SP 10 - Near-White Blast Cleaning. At least 95 percent of each square inch shall be free of all visible residues.

PART 2 -- PRODUCTS

2.1 MANUFACTURERS

- A. Sherwin Williams Protective & Marine Coatings
 - 1. Coating System Schedule
 - (a) Primer – Macropoxy 646 Fast Cure Epoxy (3.0-5.0 mils)
 - (b) Finish Coat – Sher-Loxane 800 Polysiloxane (3.0-5.0 mils)
 - (c) Total Dry Film Thickness: 6.0-10.0 mils
- B. Or approved equal.

PART 1 -- EXECUTION

1.1 SUBSTRATE EXAMINATION

- A. Examine substrates and surfaces and conditions under which work is to be performed. Notify, in writing of any conditions detrimental to performance of the work. Do not proceed with this work until unsatisfactory conditions have been corrected; starting of painting work shall be construed as acceptance of surface and conditions within any particular area.
- B. Do not paint over dirt, rust, scale, grease, moisture, or conditions otherwise detrimental to formation of a durable paint film.

1.2 SURFACE PREPARATION

- A. Prior to application of primer, all surfaces shall be prepared in compliance with manufacturer's recommendations and specifications of the Society of Protective Coatings (SSPC) as follows:
 - 1. SSPC-SP 16 Brush-off Blast Cleaning of Coated and Uncoated Galvanized Steel

1.3 MATERIAL PREPARATION

- A. Prepare painting materials in accordance with manufacturers directions. Mix materials before application to produce uniform density. Stir as required during application of materials. Do not stir surface film into material; remove film and if necessary, strain materials before using.
- B. Store materials not in actual use in tightly covered containers. Maintain containers used in storage, mixing and application of paint in a clean condition, free of foreign materials and residue.

1.4 APPLICATION

- A. All coatings shall be applied by experienced and qualified painting subcontractors.
- B. Apply coating system in compliance with manufacturer's instructions and using application method best suited for obtaining full, uniform cover and hide of surfaces to be coated Apply Manufacturer's instructions shall be strictly followed in the application of proprietary coatings.
- C. Apply primer and finish coats to comply with wet and dry film thickness and spreading rates for each type of material as recommended by the manufacturer.
- D. Stripe Coat all crevices, welds, and sharp angles to prevent early failure in these areas
- E. Closely adhere to recoat times recommended by manufacturer
- F. Allow each coat to dry thoroughly before applying next coat
- G. Paint shall not be applied in extreme heat, nor in dust or smoke laden air, nor in damp or humid weather. Temperature must be 50°F or higher and relative humidity must be less than 85 percent.
- H. Spray painting shall be conducted under controlled conditions, and the Contractor shall be fully responsible for any damage to adjacent work or adjoining property occurring from spray painting.

- I. Cover or otherwise protect surfaces not being painted, areas not to be painted, and the work of other trades. Remove protective materials when appropriate.
- J. Install adequate ventilation equipment in all areas of application to ensure that at no time does the content of air exceed the Threshold Limit Value given on the manufacturer's Material Safety Data Sheets for the specific coatings being applied.

1.5 FIELD QUALITY CONTROL

- A. Perform inspection after application of the primer and finish coat
 - 1. Correct/touch up any deficiencies observed or detected
- B. Contractor shall provide all necessary equipment to monitor and record application and environmental information on a Daily Inspection Form
 - 1. Equipment shall be in good condition
 - 2. Operated within it's design range
 - 3. Calibrated as required by the specified standard for use of each device

1.6 PROTECTION

- A. Protect work of other trades, whether to be painted or not, against damage by painting and finishing work. Correct any damages by cleaning, repairing or replacing and repainting.
- B. Provide "wet paint" signs as required to protect newly painted surfaces. Remove temporary protective wrappings provided by others for protection of their work after completion of painting operations.

1.7 CLEAN-UP

- A. During progress of work, dispose of discarded paint materials, rubbish, cans and rags. Upon completion of painting work, clean all paint spattered surfaces by proper methods of washing and scraping, using care not to scratch or otherwise damage finished surfaces.

******END OF SECTION*****

TS8 - IRRIGATION SYSTEM

PART 1 -- GENERAL

1.1 SUMMARY

A. SECTION INCLUDES

1. Performance specification for irrigation system design and installation complete.
2. This section applies to bid items IRRIGATION CAP and IRRIGATION MODIFY AND EXTEND.

B. MEASUREMENT AND PAYMENT

1. Measurement and payment for irrigation will be per LUMP SUM (LS) designed, furnished and installed as specified for each irrigation bid item listed. Payment shall be compensation in full for all costs relative thereto including but not limited to: Shop drawings submittals with system layout and components, connection and modification to existing system as required, and all associated irrigation equipment including labor, materials, equipment, apparatus, and services for testing, adjusting, retesting, and readjusting as required to place the system in an approved operating condition, system start-ups, and training of City staff on controller and system functionality.

1.2 DESCRIPTION

- A. Design, furnish and install the complete underground irrigation system specified herein and as indicated on the plans.
- B. Irrigation system when fully completed shall water all areas as indicated on the plans.
- C. Contractor to provide design build irrigation shop drawings displaying the proposed zoning, schedule, layout, and all proposed products to be used for approval by Owner's Representative prior to irrigation work subject to the requirements herein.
- D. Contractor to provide all design, labor, materials, equipment, and supervision required to construct the irrigation system complete including but not limited to:
 1. Valves, mechanical and electrical;
 2. Controllers, remote radio and wiring;
 3. Piping;
 4. Sleeves/conduits;
 5. Irrigation heads.
 6. Meter pit, backflow, RPZ, and connection to curb stop.
- E. The Contractor shall design, furnish, and install an underground irrigation system which shall be installed as a complete coordinated, functional system. All equipment whether specifically called out herein or not, shall be provided if necessary for the proper operation of a zoned irrigation system. The system shall be installed and operate in accordance with manufacturer's recommendations and to the satisfaction of the Owner. All system components shall be coordinated to provide a fully compatible functioning system.
- F. The materials comprising the system shall be uniformly consistent, commercial grade, and compatible with the existing system. Materials from multiple manufacturers shall not be allowed. All products shall be of consistent model.
- G. As a part of the complete system, the Contractor shall provide and install the following:
 1. Connection to the existing irrigation system.
 2. Contractor to inspect existing backflow, RPZ and controller and inform the Owner's Representative of any necessary modifications to said items for the proper operation of the irrigation system.

3. Contractor to inspect existing meter pit with meter and inform the Owner's Representative of any necessary modifications to said items for the proper operation of the irrigation system.
 4. Provide and install sleeves under walks, roads, and other paved areas as necessary for complete installation and operation of the system. The size and material of all sleeves shall be subject to the approval of the Engineer. In general, sleeves shall be 4" diameter, schedule 40 PVC.
 5. All irrigation lines and heads
- H. The Contractor shall coordinate with the Landscape Contractors to ensure adequate and timely irrigation of all plant materials and to establish the correct location of irrigation components relative to plant material beds.
- I. Delivery, Handling, and Storage of Materials
1. Materials shall be delivered to the site in accordance with manufacturer's recommendations for shipment and protection of materials.
 2. Handling of materials shall be conducted in a manner consistent with the manufacturer's recommendations.
 3. Storage of all materials shall occur in locations approved by Owner.
- J. Codes, Required Permits, and Required Inspections
1. The entire installation and system shall fully comply with all local and state laws and ordinances, and with all the established codes applicable thereto.
 2. The Contractor shall be responsible for securing 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.
- K. The Contractor shall provide minimum of 48-hour notice to Owner and Owner's Representative and receive written notice to proceed before interrupting any utility. Interruption of utility service shall only be allowed if approved by the Owner.
- L. Warranty
1. For a period of two (2) years from date of Substantial Completion of work performed under this Section, the Contractor shall promptly furnish and install any and all parts and equipment which prove defective in materials, workmanship, or installation at no additional cost to Owner.
 2. During the two (2) year guarantee period, the Contractor shall drain the irrigation system and winterize for each winter and shall put the irrigation system back into operation each spring at no additional cost to Owner. The Contractor shall be responsible for scheduling by September 15th winterization with the Public Works Department of each calendar year. Performance of winterization shall be completed within one week of a date selected by the Owner at the time of scheduling.
- M. Required Submittals
1. Submit the manufacturer's technical data and specifications for all component parts of the irrigation system.
 2. Contractor shall submit sleeve plan for review and approval by project engineer so the installation of sleeves can coincide with the utility construction.
 3. Submit design and installation drawings for the underground irrigation system including plan layout and details illustrating zoning, location and type of heads, valves, piping circuits, controls, and accessories.
 4. At the time of submittal, the Contractor shall specifically identify any proposed deviation or variance from the equipment or installation described herein.

PART 2 -- PRODUCTS

2.1 MATERIALS

A. GENERAL

1. All irrigation equipment must be purchased by a local authorized serviced regional distributor.
2. All equipment must be compatible with the existing irrigation system.

B. COPPER PIPING

1. Type "K" Hard Copper, 2" Diameter. All fittings for pipe 4 inches and over shall be ductile iron.

C. P.V.C.

1. Sizes 1" diameter and larger.
2. Virgin, high impact, poly-vinyl chloride (P.V.C.) pipe, Schedule 1120-1220. Mainline piping: 1-1/2" 200 PSI SDR 2 PVC, having a minimum of 200 psi working pressure rating. Lateral piping: polyethylene, having a minimum of 100 psi working pressure rating. Continuously and permanently marked with manufacturer's name, material, size, and schedule or type.
3. Pipe: Conform to CS 207-60 or latest revision.
4. Material: Conform to CS 256-63 or latest revision.

D. P.V.C. PIPE FITTINGS

1. Sch. 40 P.V.C. solvent weld or belled fittings; saddles prohibited. Conform to ASTM D1784, ASTM D2466.

E. POLYETHYLENE PIPE

1. Flexible polyethylene pipe rated at 100-psi minimum working pressure. 1" through 1 1/2" diameter allowed. Product Standard PS11-69 or ASTM D2239-73 for PE 2306, SDR-15.

F. POLYETHYLENE FITTINGS

1. Schedule 100 P.V.C. All fittings larger than 1" shall be secured with double stainless steel clamps.

G. SADDLE TEES

1. Kwik-seal saddle tee for polyethylene pipe with T-bolt and nut made of glass reinforced nylon and without clamps. 1" only.

H. SPRINKLER RISER OFF POLYETHYLENE PIPE

1. Cut-off funny pipe mounted on saddle tees.

I. ELECTRICAL CONTROL VALVES

1. Globe valves operated by low-power solenoid, normally closed, manual flow adjustment.

J. CONTROL CABLE

1. All electrical control and ground wire shall be "UF" direct burial. 12 ga. white common neutral 14 ga. red control wire. A separate common neutral wire is required from controller along entire main line and dropped in marked valve box. Provide one spare control wire from controller along entire main line.
2. No aluminum wire allowed.
3. Wiring used for connecting automatic remote control valve to automatic controllers shall be type "UF", 600 volt, solid copper, single conductor wire with P.V.C. insulation and bear "UL" approval for direct underground burial feeder cable.
4. Direct Bury Splice Kit: 3M DBY/3M DBR.

K. SPRINKLER HEADS

1. Heads shall be the manufacturer's standard commercial unit designed to provide uniform coverage over entire designated area and shall be readily available for purchase.
2. Spacing of heads shall not exceed manufacturer's maximum recommendations. The design and installation of head layout shall allow the system to conform to manufacturer's specifications concerning diameter of throw and gallons at given pressures. Matched precipitation will be required on all heads operating on the same zone.

L. CONTROL EQUIPMENT & MAINTENANCE RADIOS W/RECEIVERS

1. Contractor to provide connection for zones within controller

M. REDUCED PRESSURE BACKFLOW DEVICE

1. If new reduced pressure backflow device is required, provide manufacturer's standard, to suit sprinkler system and jurisdiction codes.

N. QUICK COUPLING VALVES

1. When specified on the plans, locate in intervals along all mainline pipe as identified on plans. Verify final locations with Owner. Quick coupling valves shall be installed in a 10" Valve Box.
2. Provide matching quick coupler keys. One key for each 3 coupling valves.

O. ISOLATION VALVES

1. Shall be provided for functional operation of the system. Locations shall be verified with the Owner.
2. Install isolation ball valves shall be placed in 12" valve boxes.

PART 3 -- EXECUTION

A. SYSTEM DESIGN The Contractor shall stake out all proposed lines prior to trenching operations.

1. Design Pressure: Upon request, the Owner can furnish a design pressure. The contractor shall verify the design pressure is met and notify the landscape architect if pressures are less. For the purposes of bidding, the design static pressure shall be 60 psi.
2. Locate heads as per manufacturer's recommendations for suitable coverage. The heads shall be located to avoid plantings and other obstructions and to provide proper elevation relative to finished plant beds. Exact locations of piping, sprinkler heads, valves, and other components shall be established by the Contractor and labeled on the approved shop drawings. Minor adjustments in the field to proposed locations in the approved shop drawings shall be allowed provided the finished system meets all specified requirements.
3. Minimum Water Coverage: Design to deliver the equivalent of 1.5" of rainfall per week. System total operating time not to exceed 1 hour per 24-hour day and operate every other day of the week.

B. TIMING

1. Coordinate time schedule with Owner's representative

C. INSTALLATION

1. Excavating and backfilling:
 - (a) Excavate trenches of sufficient depth and width to permit proper handling and installation of pipe and fittings.
 - (b) If the pulling method is used, the pipe "plow" shall be a vibratory type. Starting and finishing holes for pipe pulling shall not exceed a 1'-0" by 3'-0" opening.
 - (c) Excavate to depths required to provide 2" depth of earth fill or sand bedding for piping when rock or other unsuitable bearing material is encountered.

- (d) Fill to match adjacent grade elevations with approved earth fill material. Place and compact fill in layers not greater than 8" depth.
 - (1) Provide approved earth fill or sand to a point 4" above the top of pipe.
 - (2) Overfill with approved excavated or borrow fill materials free of lumps or rocks larger than 3" in any dimension. Level, compact and water settle.
 - (3) The Contractor shall be solely responsible for repair of surface improvements in the event of settlements.
 - (e) Unless approved otherwise by the landscape architect, install irrigation mains with a minimum cover of 18" based on finished grades. Install irrigation laterals with a minimum cover of 12" based on finished grades.
 - (f) Excavate trenches and install piping and fill during the same working day. Do not leave open trenches or partially filled trenches open overnight.
2. Plastic Pipe:
- (a) Install plastic pipe in accordance with manufacturer's installation instructions. Provide for thermal expansion and contraction.
 - (b) Saw cut plastic pipe. Use a square-in-sawing vice to ensure a square cut. Remove burrs and shavings at cut ends prior to installation.
 - (c) Make plastic to plastic joints with solvent welded joints or slip seal joints. Use only solvent recommended by the pipe manufacturer. Install plastic pipe fittings in accordance with pipe manufacturer's instructions. Contractor shall make arrangements with pipe manufacturer for all necessary field assistance.
 - (d) Make plastic to metal joints with toe nipples, no male adaptors.
 - (e) Make solvent weld joints in accordance with manufacturer's recommendations.
 - (f) Allow joints to set at least 24 hours before pulling or pressure is applied to the system.
 - (g) Uncoil poly-pipe and insert fitting full depth. Secure poly-pipe to insert fittings with stainless steel clamps. Double clamp pipe over 1" diameter.
 - (h) Maintain pipe interiors free of dirt and debris. Close open ends of pipe by acceptable methods when pipe installation is not in progress and over all non-working hours.
3. Sprinklers, fittings, valves, and accessories:
- (a) Install fittings, valves, sprinkler heads, risers, and accessories in accordance with manufacturer's instructions, except as otherwise indicated.
 - (b) Set sprinkler heads ½" below grades.
 - (c) Install pop-up spray heads with polyethylene "cut-off" risers
 - (d) Obtain Owner's Representative's review and acceptance of height for proposed sprinkler heads and valves prior to installation.
 - (e) Locate sprinkler heads to assure proper coverage of indicated areas. Do not exceed sprinkler head spacing distances indicated on the approved drawings.
 - (f) Install quick-coupling valves in 10" valve box on 360-degree swing joint assembly as per manufacturer's recommendation with stabilizer.
 - (g) Install valve access boxes on a suitable base of gravel to provide a level foundation at proper grade to provide drainage of the access box.

- (h) Seal threaded connections on pressure side of control valves as per manufacturer's recommendations.
- 4. Control wiring:
 - (a) Install electric control cable in the piping trenches wherever possible. Place wire in trench adjacent to pipe. Install wire with slack to allow for thermal expansion and contraction. Expansion joints in wire shall be provided at 200-foot intervals by making 5-6 turns of the wire around a piece of 1/2" pipe instead of slack. Where necessary to run wire in a separate trench, provide a minimum cover of 12".
 - (b) Provide sufficient slack at site connections at remote control valves in control boxes, and at all wire splices to allow raising the valve bonnet or splice to the surface without disconnecting the wires when repair is required.
 - (c) Connect each remote control valve to one station of a controller except as otherwise indicated.
 - (d) Connect remote control valves to a common ground wire system independent of all other controllers. A separate common neutral wire is required for each controller.
 - (e) Make wire connections to remote control electric valves and splices of wire in the field, using 3M DBY or 3M DBR Direct Bury Splice Kit (or approved equal).
 - (f) Provide tight joints to prevent leakage or water and corrosion build-up on the joint.
- 5. Flushing, testing, and adjustment:
 - (a) After sprinkler piping and risers/swing joints are installed and before sprinkler heads are installed, open control valves and flush out the system with full head of water.
 - (b) Perform system testing upon completion of each section. Make necessary repairs and re-test repaired sections as required.
 - (c) Adjust sprinklers after installation for proper and adequate distribution of the water over the coverage pattern. Adjust for the proper arc of coverage.
 - (d) Tighten nozzles on spray type sprinklers after installation. Adjust sprinkler adjusting screw on lateral line or circuit as required for proper radius. Interchange nozzles patterns as directed by the Owner's representative to give best arc of coverage.
 - (e) Adjust all electric remote control valve flow control stems for system balance.
 - (f) Test and demonstrate the controller by operating appropriate day, hour, and station selection features as required to automatically start and shut down irrigation cycles to accommodate plant requirements and weather conditions.

D. RECORD DRAWING

- 1. Furnish accurate reproducible "Record" drawings of all components. State the size, manufacturer, model number, part number, size, and exact location of every item furnished and installed by this Contractor. Final payment may be withheld until "record drawings" have been provided to the Owner and approved by Owner or Owner's Representative.
- 2. Contractor will furnish Owner with 2 bound copies of instruction sheets and parts lists covering all operating equipment.

E. DISPOSAL OF WASTE MATERIAL

- 1. Stockpile, haul from site, and legally dispose of waste materials, including unsuitable excavated materials, rock, trash, and debris.
- 2. Maintain disposal route clear, clean, and free of debris.
- 3. Repair any damage resulting from irrigation system installation.

F. WINTERIZATION AND SPRING START-UP OF IRRIGATION SYSTEM

1. The contractor shall prepare the entire irrigation system for one winter by removing all water within the mainline and lateral piping. Water shall be diverted so as not erode existing landscaping or final grades. If damage does occur, the contractor shall make repairs to the owner's satisfaction at no additional cost.
2. The contractor shall provide one Spring Start-up of the entire irrigation system by filling the mainline and lateral piping with water and operate all control valves with the automatic controller. The contractor shall also set the controller timing for spring irrigation.
3. During Winterizing and Spring Start-up the contractor shall contact the owner and current landscape maintenance provider responsible for the project site and educate them to the operations of the system. Also, the contractor shall provide a written copy to the owner of the irrigation timing required for establishing plants during late spring, summer and fall schedules.

G. ACCEPTANCE

1. Test and demonstrate to the Owner the satisfactory operation of the system free of leaks.
2. The Contractor shall instruct the Owner in the operation of the system, including adjustment of sprinklers, controller(s), valves, and pump controls, and provide all manuals for equipment in the installed system.
3. Upon acceptance, the Owner will assume operation of the system.

H. SPECIAL INSTRUCTIONS

1. Contractor shall coordinate work with any other project in the area.
2. The Contractor shall coordinate and cooperate with all contractors working in the area of the proposed system. The contractor shall coordinate with the utility contractor installing new watermain and a proposed water service.

******END OF SECTION******

TS9 - STONE BLOCK MASONRY

PART 1 -- GENERAL

1.1 SECTION INCLUDES

- A. STONE BLOCK BENCH

1.2 MEASUREMENT AND PAYMENT

- A. STONE BLOCK BENCH as indicated on the plans, complete-in-place will be measured and paid as per each (EA) stone block bench installed complete. Unit bid price includes all items necessary for furnishing and placing the stone blocks, including but not limited to modified subbase base material and minor shaping to fit next to concrete slabs.

1.3 RELATED WORK

- A. None

1.4 SUBMITTALS

- A. Product Data: Provide data on stone units including chemical analysis.
- B. Submit 3 samples 6 inches by 6 inches showing, color range, vein direction, markings, surface finish of each product specified.

PART 2 -- PRODUCTS

2.1 STONE PRODUCT

- A. Supplier
 - 1. Iowa Landscape Supply
4041 E 16th St., Des Moines, IA 50313
Phone: 515-262-2367
- B. Product
 - 1. Larger Iowa Buff Wallstone from Iowa Landscape Supply
 - 2. Finish
 - a. Splitface front, back, and sides
 - b. Bedface top and bottom
 - 3. Meet dimensional requirements indicated in the drawings
- C. Or Approved Equal
- D. Owner to review and approve stone from contractors submitted samples.

PART 3 -- EXECUTION

3.1 PREPERATION

- A. Stone shall be brushed free of dust and foreign matter.
- B. Wet stone sufficiently to take up surface absorption

3.2 SETTING SPLITFACE STONE

- A. Lay stone in accordance with manufacturer's instructions, approved shop drawings and/or plans and details
- B. Execute splitface stonework by skilled masons and employ skilled stone fitters at site to do necessary shaping as stones are set.
- C. Stone is to be selected so colors are evenly distributed throughout the job.

3.3 CLEANING

- A. Keep stone work as clean as possible as work progresses. Upon completion, clean stone thoroughly with water and fiber brushes. Thoroughly rinse when complete with clean water. Do NOT use acids, detergents, or wire brushes.

*****END OF SECTION*****

PART 1 – GENERAL

1.01 SUMMARY

A. Section Includes: Fall Attenuation Surfacing, Pour-in-Place Playground Surfacing System: Extreme-10 (when aliphatic urethane for the top surface is specified) with a 10-year warranty.

B. Measurement and Payment: “Fall attenuation surfacing, Pour-in-Place” will be measured and paid for by the square foot (SF) and includes all testing, labor, materials, and equipment to place poured-in-place fall attenuation surfacing in the playground area as indicated in the documents. Incidental to this item is all base material, including concrete paving, aggregate subbase, and any subgrade preparation as necessary to obtain proper compaction levels.

C. Related Sections:

1. 2023 Edition of the “Iowa Statewide Urban Specifications for Public Improvements”.
2. TS3 – Paving Specialties
3. TS11 – Fall Attenuation Surfacing, Synthetic Turf

1.02 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. ASTM D412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers-Tension.
2. ASTM D624 Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers.
3. ASTM D2047 Standard Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces as Measured by the James Machine.
4. ASTM D2859 Standard Test Method for Flammability of Finished Textile Floor Covering Materials.
5. ASTM E303 Standard Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester.
6. ASTM F1292 Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment.
7. ASTM F1951 Standard Specification for Determination of Accessibility of Surface Systems Under and Around Playground Equipment.

1.03 SYSTEM DESCRIPTION

A. Performance Requirements: Provide a 2-layer rubber-urethane playground surfacing system which has been designed, manufactured and installed to meet the following criteria:

1. Shock Attenuation (ASTM F1292):
 - a. Gmax: Less than 200.
 - b. Head Injury Criteria: Less than 1000.
2. Flammability (ASTM D2859): Pass.
3. Tensile Strength (ASTM D412): 60 psi (413 kPa).
4. Tear Resistance (ASTM D624): 140%.
5. Water Permeability: 0.4 gal/yd²/second.
6. Accessibility: Comply with requirements of ASTM F1951.

1.04 SUBMITTALS

A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures Section.

B. Product Data: Submit manufacturer's product data and installation instructions.

C. Verification Samples: Submit manufacturer's standard verification samples of 9" x 9" (229 x 229 mm) minimum.

D. Quality Assurance/Control Submittals: Submit the following:

1. Certificate of qualifications of the playground surfacing installer.

E. Closeout Submittals: Submit the following:

1. Warranty documents specified herein.

1.05 QUALITY ASSURANCE

A. Qualifications: Utilize an installer approved and trained by the manufacturer of the playground surfacing system, having experience with other projects of the scope and scale of the work described in this section.

B. Certifications: Certification by manufacturer that installer is an approved applicator of the playground surfacing system.

C. International Play Equipment Manufacturers Association (IPEMA) certified.

1.06 DELIVERY, STORAGE & HANDLING

A. General: Comply with Division 1 Product Requirement Section.

B. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

C. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at a minimum temperature of 40 degrees F (4 degrees C) and a maximum temperature of 90 degrees F (32 degrees C).

1.07 PROJECT/SITE CONDITIONS

A. Environmental Requirements: Install surfacing system when minimum ambient temperature is 40 degrees F (1 degree C) and maximum ambient temperature is 90 degrees F (32 degrees C). Do not install in steady or heavy rain.

1.08 WARRANTY

A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions.

B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under contract documents.

C. Proper drainage is critical to the longevity of the PlayBound Poured-in-Place surfacing system. Inadequate drainage will cause premature breakdown of the poured system in affected areas; and void the warranty.

D. Warranty Period: Extreme-10 (aliphatic urethane top surface is specified): 10 years from date of completion of work.

PART 2 – PRODUCTS

2.01 POURED-IN-PLACE PLAYGROUND SURFACING SYSTEM

A. Manufacturer: Surface America, Inc.

1. Contact: PO Box 157, Williamsville, NY 14231; Telephone: (800) 999-0555, (716) 632-8413; Fax: (716) 632-8324; E-mail: info@surfaceamerica.com; website: <http://www.surfaceamerica.com>.

B. Proprietary Products/Systems. Poured-in-place playground surfacing system, including the following:

1. PlayBound Poured-In-Place Primer:

- a. Material: Urethane.

2. PlayBound Poured-in-Place Basemat:

- a. Material: Blend of 100% recycled SBR (styrene butadiene rubber) and urethane.

- b. Thickness: 5" (76 mm) minimum for 12' critical fall height. See grading plan for more detailed thicknesses based on depth of concrete subbase.

- c. Formulation Components: Blend of strand and granular material.

3. PlayBound Poured-In-Place Top Surface:

- a. Material: Blend of recycled EPDM (ethylene propylene diene monomer) rubber and aliphatic urethane binder.
- b. Thickness: Nominal 1/2" (12.7 mm), minimum 3/8" (9.5 mm), maximum 5/8" (15.9 mm).
- c. Colors: Up to five (5) colors shall be selected by the landscape architect for the preliminary pattern shown in the plans. No more than 25% of the pattern will be comprised of manufacturer's premium colors as listed below.
 - 1. Standard colors: Terra Cotta Red, Orange, Gold, Beige, Bright Green, Hunter Green, Sky Blue, Royal Blue, Pearl, Eggshell, Light Gray, Dark Gray, Black.
 - 2. Premium colors: Brown, Teal, Yellow, Purple, Primary Red.
 - 2. Preliminary pattern shown in the plans. Final pattern to be provided by owner.
 - 3. Granule mix ratio to be manufacturer's standard: 50% color, 50% black
- d. Dry Static Coefficient of Friction (ASTM D2047): 1.0.
- e. Wet Static Coefficient of Friction (ASTM D2047): 0.9.
- f. Dry Skid Resistance (ASTM E303): 89.
- g. Wet Skid Resistance (ASTM E303): 57.

2.02 PRODUCT SUBSTITUTIONS

A. Substitutions: Proposed substitutions must be submitted to owner for approval prior to commencement of construction and must meet all specifications of this section.

2.03 MIXES

A. Required mix proportions by weight:

- 1. Basemat: 16+% urethane (as ratio: 14% urethane divided by 86% rubber). 14% urethane, 86% rubber (based on entire rubber & urethane mix).
- 2. Top Surface: 22% urethane (ratio: 18% urethane divided by 82% rubber). 18% urethane, 82% rubber (based on entire rubber & urethane mix).

PART 3 – EXECUTION

3.01 MANUFACTURER'S INSTRUCTIONS

A. Comply with the instructions and recommendations of the playground surfacing manufacturer.

3.02 EXAMINATION

- A. Substrate preparation must be in accordance with surfacing manufacturer's specification. New concrete must be fully cured – up to 7 days. Asphalt is not specified for this project.
- B. Proper drainage is critical to the longevity of the PlayBound Poured-in-Place surfacing system. Inadequate drainage will cause premature breakdown of the poured system in affected areas; and void the warranty.
- C. Ensure proper installation of trench drains in concrete base. Follow manufacturer recommendations for catch basin type and installation techniques.

3.03 PREPARATION

- A. Surface Preparation: Using a brush or short nap roller, apply primer to the substrate perimeter and any adjacent vertical barriers such as playground equipment support legs, curbs or slabs that will contact the surfacing system at the rate of 300 ft²/gal (7.5 m²/L).

3.04 INSTALLATION

- A. Do not proceed with playground surfacing installation until all applicable site work, including substrate preparation, fencing, playground equipment installation and other relevant work, has been completed.
- B. Basemat Installation:
 - 1. Using screeds and hand trowels, install the basemat at a consistent density of 29 pounds, 1 ounce per cubic foot (466 kg/m³) to the specified thickness.
 - 2. Allow basemat to cure for sufficient time so that indentations are not left in the basemat from applicator foot traffic or equipment.
 - 3. Do not allow foot traffic or use of the basemat surface until it is sufficiently cured.
- C. Primer Application: Using a brush or short nap roller, apply primer to the basemat perimeter and any adjacent vertical barriers such as playground equipment support legs, curbs or slabs that will contact the surfacing system at the rate of 300 ft²/gal (7.5 m²/L).
- D. Top Surface Installation:
 - 1. Using a hand trowel, install top surface at a consistent density of 58 pounds, 9 ounces per cubic foot (938 kg/m³) to a nominal thickness of 1/2" (12.7 mm).
 - 2. Allow top surface to cure for a minimum of 48 hours.
 - 3. At the end of the minimum curing period, verify that the top surface is sufficiently dry and firm to allow foot traffic and use without damage to the surface.
 - 4. Do not allow foot traffic or use of the surface until it is sufficiently cured.

3.05 PROTECTION

A. Protect the installed playground surface from damage resulting from subsequent construction activity on the site through final acceptance of the project.

*****END OF SECTION*****

PART 1 – GENERAL

1.01 SUMMARY

A. Section Includes: Fall Attenuation Surfacing, Synthetic Turf (PlayBound™ TurfTop™) playground surfacing system.

B. Measurement and Payment: “Fall attenuation surfacing, Synthetic Turf” will be measured and paid for by the square foot (SF) and includes all testing, labor, materials, and equipment to place synthetic turf fall attenuation surfacing and system buildup in the playground area as indicated in the documents and as required by the manufacturer. Incidental to this item is all manufacturer provided base matting, and concrete skim coat required for the construction of the synthetic turf mounds. Increased material square footage resulting from vertical dimensions of synthetic turf berms are incidental to this item.

C. Related Sections:

1. 2023 Edition of the “Iowa Statewide Urban Specifications for Public Improvements”.
2. TS3 – Paving Specialties
3. TS10 – Fall Attenuation Surfacing, Pour in Place

1.02 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. ASTM D412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers-Tension.
2. ASTM D624 Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers.
3. ASTM D2047 Standard Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces as Measured by the James Machine.
4. ASTM D2859 Standard Test Method for Flammability of Finished Textile Floor Covering Materials.
5. ASTM E303 Standard Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester.
6. ASTM F1292 Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment.
7. ASTM F1951 Standard Specification for Determination of Accessibility of Surface Systems Under and Around Playground Equipment.

1.03 SYSTEM DESCRIPTION

A. Performance Requirements: Provide a 2-layer (bottom layer rubber-polyurethane / top layer synthetic grass playground surfacing system that has been designed, manufactured and installed to meet the following criteria:

1. Shock Attenuation (ASTM F1292):

- a. Gmax: Less than 200.
- b. Head Injury Criteria: Less than 1000.
- 2. Flammability (ASTM D2859): Pass.
- 3. Tensile Strength (ASTM D412): 60 psi (413 kPa).
- 4. Tear Resistance (ASTM D624): 140%.
- 5. Water Permeability: 0.4 gal/yd²/second.
- 6. Accessibility: Comply with requirements of ASTM F1951.

1.04 SUBMITTALS

A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures Section.

B. Product Data: Submit manufacturer's product data and installation instructions.

C. Verification Samples: Submit manufacturer's standard verification samples of 9" x 9" (229 mm x 229 mm) minimum.

D. Quality Assurance/Control Submittals: Submit the following:

- 1. Certificate of qualifications of the playground surfacing installer.

E. Closeout Submittals: Submit the following:

- 1. Warranty documents specified herein.

1.05 QUALITY ASSURANCE

A. Qualifications: Utilize an installer approved and trained by the manufacturer of the playground surfacing system, having experience with other projects of the scope and scale of the work described in this section.

B. Certifications: Certification by manufacturer that installer is an approved applicator of the playground surfacing system.

C. International Play Equipment Manufacturers Association (IPEMA) certified.

1.06 DELIVERY, STORAGE & HANDLING

A. General: Comply with Division 1 Product Requirement Section.

B. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

C. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at a minimum temperature of 40 degrees F (4 degrees C) and a maximum temperature of 90 degrees F (32 degrees C).

1.07 PROJECT/SITE CONDITIONS

A. Environmental Requirements: Install surfacing system when minimum ambient temperature is 40 degrees F (1 degree C) and maximum ambient temperature is 90 degrees F (32 degrees C). Do not install in steady or heavy rain.

1.08 WARRANTY

A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions.

B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under contract documents.

1. Warranty Period: 7-year warranty from completion of work.

PART 2 – PRODUCTS

2.01 PLAYBOUND TURFTOP PLAYGROUND SURFACING SYSTEM

A. Manufacturer: Surface America, Inc.

1. Contact: PO Box 157, Williamsville, NY 14231; Telephone: (800) 999-0555, (716) 632-8413; Fax: (716) 632-8324; E-mail: info@surfaceamerica.com; website: <http://www.surfaceamerica.com>.

B. Proprietary Products/Systems. PlayBound TurfTop playground surfacing system, including the following:

1. PlayBound Primer:

- a. Material: Polyurethane.

2. PlayBound TurfTop Basemat:

- a. Material: Blend of 100% recycled SBR (styrene butadiene rubber) and polyurethane.
- b. Thickness: 3-3/4" (95.25 mm) for 8' fall height.

3. PlayBound TurfTop:

- a. The synthetic turf material shall be in accordance with the following:

1. Turf surface includes two fibers: polyethylene monofilament with polypropylene thatch.
2. The fiber shall be low friction fiber, measuring not less than 1-1/4" high. The low friction fiber shall be specifically designed to virtually eliminate abrasion.
3. The total fabric weight shall not be less than 87 ounces per square yard. The fiber shall be tufted on a 3/8" tufting machine at a rate of 3 stitches per inch minimum. The low friction non-abrasive fiber shall be treated with a UV inhibitor.
4. The primary backing shall consist of a polyethylene backing. The secondary backing shall consist of an application of polypropylene; heat activated to permanently lock fiber tufts in place. Products using latex based secondary backings will not be acceptable. The synthetic grass system shall be perforated with 3/16" holes every four (4") inches in both directions to provide for maximum drainage. Complete synthetic grass system (including base pad) shall drain in excess of

15" per hour. Non-perforated systems shall not be acceptable alternates for purposes of this specification.

5. The carpet shall be delivered in 15' wide rolls by lengths best suited for the project.

6. The fiber shall be field green in color to simulate natural grass as closely as possible and treated with UV inhibitor, guaranteed a minimum of five years.

2.02 PRODUCT SUBSTITUTIONS

A. Substitutions: Proposed substitutions must be submitted to owner for approval prior to commencement of construction and must meet all specifications of this section.

2.03 MIXES

A. Required mix proportions by weight:

1. Basemat: 16+% polyurethane (as ratio: 14% polyurethane divided by 86% rubber). 14% polyurethane, 86% rubber (based on entire rubber & polyurethane mix).

PART 3 – EXECUTION

3.01 MANUFACTURER'S INSTRUCTIONS

A. Comply with the instructions and recommendations of the playground surfacing manufacturer.

3.02 EXAMINATION

A. Site Verification of Conditions: Verify that substrate conditions are suitable for installation of the playground surfacing system. New concrete must be fully cured – up to 7 days. Asphalt is not specified for this project.

B. Proper drainage is critical to the longevity of the playground surfacing system. Inadequate drainage will cause premature breakdown of the poured system in affected areas; and void the warranty.

C. Do not proceed with installation until unsuitable conditions are corrected.

3.03 PREPARATION

A. Surface Preparation:

1. Apply primer to the concrete skim coat base using a brush or short nap roller, apply primer to the substrate perimeter and any adjacent vertical barriers such as playground equipment support legs, curbs or slabs that will contact the surfacing system at the rate of 300 ft²/gal (7.5 m²/L).

3.04 INSTALLATION

A. Do not proceed with playground surfacing installation until all applicable site work, including substrate preparation, fencing, playground equipment installation and other relevant work, has been completed.

B. Basemat Installation:

1. Using screeds and hand trowels, install the basemat at a consistent density of 29 pounds, 10 ounces per cubic foot (466 kg/m³) to the specified thickness.
2. Allow basemat to cure for sufficient time so that indentations are not left in the basemat from applicator foot traffic or equipment.
3. Do not allow foot traffic or use of the basemat surface until it is sufficiently cured.

C. TurfTop installation:

1. Rough cut synthetic grass rolls for installation.
2. Using 15" wide cordura seam tape and 1-part urethane adhesive, seam synthetic grass rolls to form monolithic surface. Adhere synthetic grass to basemat around playground perimeter.

3.05 PROTECTION

- A. Protect the installed playground surface from damage resulting from subsequent construction activity on the site.

*****END OF SECTION*****

TS12 - NON-SKID RUBBERIZED COATING

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A Non-Skid Rubberized Coating (Splash Pad)

1.2 MEASUREMENT AND PAYMENT

- B Non-Skid Rubberized Coating (Splash Pad) will be measured and paid for by the square foot (SF). The item includes all labor, materials, and equipment necessary for furnishing and complete application of non-skid rubberized coating. Measurement and payment shall be per square foot of coating as specified on the drawings. All surface prep and priming coats are considered incidental.

1.3 RELATED SECTIONS

- A TS2 – Splash Pads, TS3 – Paving Specialties, TS7 – High Performance Coatings, TS10 – Fall Attenuation Surfacing, Pour-in-Place, TS11 – Fall Attenuation Surfacing, and Synthetic Turf.

1.4 REFERENCES

American Society for Testing and Materials (ASTM):

1. ASTM D4541-95 Pull Off Adhesion Tests
2. ASTM-F-510 Wear Testing
3. ASTM-D-2794 Impact Resistance
4. ASTM-F-609 Coefficient of Friction Test

1.5 SYSTEM DESCRIPTION

Performance requirements: Provide a single pack, water based, cross linked, UV resistant polyurethane coating which cures in to a tough, textured coating with abrasion, chemical resistance and non-slip properties.

1.6 SUBMITTALS

- A. General: Submit listed submittals in accordance with Condition of the Contract and Division 1 Submittal Procedures Section.
- B. Product Data: Submit manufacturers product data and installation instructions.
- C. Submit manufacturers standard verification samples of 9" x 9" minimum.
- D. Quality Assurance/Control Submittals: Submit Certificate of qualifications of the flooring surface installer.

- E. Closeout Submittals: Submit the Warranty documents specified herein.

1.7 QUALITY ASSURANCE

- A. Qualifications: Utilize an installer approved and trained by the manufacturer of the flooring surface system, having experience with other projects of the scope and scale of the work described in this section.
- B. Certifications: Certification by manufacturer that installer is an approved applicator of the flooring system.

1.8 DELIVERY, STORAGE, & HANDLING

- A. General: Comply with Division 1 Product Requirement Section.
- B. Delivery: Deliver materials in manufacturers original, unopened, undamaged containers with identification labels intact.
- C. Storage & Protection: Store materials protected from exposure to harmful environmental conditions and at a minimum temperature of 40 degrees F (4 degrees C) and a maximum temperature of 90 degrees F (32 degrees C).

1.9 PROTECTIVE/SITE CONDITIONS

Environmental Requirements: Install flooring surface system when minimum ambient temperature is 40 degrees F (4.4 degree C) and maximum ambient temperature is 90 degrees F (32 degrees C). Do not install in steady or heavy rain or freezing conditions.

1.10 WARRANTY

- A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions.
- B. Manufacturer's Warranty: Submit for Owner's acceptance, manufacturers standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under contract documents.

PART 2 - PRODUCTS

2.1 NON-SKID COATING SYSTEM

- A. Manufacturer:

Tuff Coat Rubberized Non-Skid Coatings
2220 US HWY 70 SE, STE 100
Hickory, NC 28602
Telephone: (877) 252-9457; Fax: (970) 240-8963
Website: www.tuffcoat.net

B. Proprietary Products/Systems

Non-Skid Flooring system, including the following:

1. Primer
 - a. UT-80 Adhesion Primer by TuffCoat
2. Top coat:
 - a. UT-200, Submersible Medium Texture
 - b. Color: multicolored pattern to be selected from manufacturer's standard colors.

2.2 PRODUCT SUBSTITUTIONS

Substitutions: No Substitutions Permitted.

2.3 MIXES

- A. Required mix proportions by weight: 31-60% Urethane/Acrylic Copolymer; 10-29% Rubber Crumb; 31-60% Water.

PART 3 EXECUTION

3.1 MANUFACTURERS INSTRUCTIONS

- A. Comply with the instructions and recommendations of the manufacturer of the coating system. Nothing in this specification precludes the contractor from complying with the manufacturer's recommended procedures for application of the coatings.

3.2 EXAMINATION

- A. Site Verification of Conditions: Verify that substrate conditions are suitable for installation of the: flooring system.
- B. Do not proceed with installation until suitable conditions are corrected.

3.3 PREPARATION OF CONCRETE

- A. Concrete Cleaning
1. Clean and degrease all surfaces with Zep Purple Degreaser or similar. Do not use any solvent base products to clean any surface that receives the Tuff Coat.
- B. Concrete Finish
1. The concrete should be hand troweled, with a brush/broom finish to ensure adequate porosity for adhesion. New concrete needs at least 28 days to cure properly, prior to primer application. Unless the new concrete is dry, adhesion problems will be experienced.

2. To make concrete porous then acid etching or shot blasting is necessary. Make sure to use a light acid etch using 2 parts muriatic acid to 1-part water and to remove all remaining acid with soap and water and scrub brush. (If all acid is not properly removed, you will not obtain adhesion).
3. Concrete should be completely clean and dry.
4. Patch all imperfections, cracks, etc., with concrete patch filler and flexible joint fillers. DO NOT USE SILICONE PRODUCTS. The Product will not adhere to silicone.
5. Prime with CP-10 as per manufacturer's instructions. When primer has properly cured, perform test patch to insure adhesion.

3.4 INSTALLATION

A. Types of Applications.

1. Roller Application

- a. Use Tuff Coat Texture Roller, only available from Tuff Coat Manufacturing Inc or a Tuff Coat Distributor. Other rollers may not pick up and spread the product evenly. The roller must be capable of lifting the rubber crumb within the product, to the surface. This will not occur using soft paint rollers.
- b. Soak roller in water - remove excess water prior to application.
- c. Roll Tuff Coat directly from a 5-gallon bucket. Make sure to completely saturate roller with product, leaving no bare spots on roller.
- d. Apply the first coat as a thin coat. Re-saturate roller each pass. Make 4 - 5 consecutive passes in the same direction, with each pass right next to the other. When applying, roll in one direction first, then roll in the opposite direction in order to properly blend the product and create a uniform textured surface.
- e. Once an area is covered, run the roller very lightly over it to ensure even distribution and blending of color and rubber crumb.
- f. When touch dry, apply two further subsequent coats.
- g. Do not apply too thick to avoid "mud cracking".

2. Spray Application

- a. Mask off area as needed
 - a. Use only the spray gun recommended or supplied by Tuff Coat. Superior brand "Spraying Mantis" hand held Hopper gun or equivalent. Or for larger projects
 - b. Graco brand "Tex-Spray Compact" or equivalent
- b. Attach spray gun to a compressor airline giving pressure of at least 40 psi.
- c. Spray water out of the gun to prime.
- d. Before starting the job, spray a few short bursts away from the surface to test that everything is working properly.
- e. Holding gun approximately 12-24" away from surface, spray an even, light

coat over the entire surface. DO NOT APPLY TOO THICK.

- f. Keep spray gun at a 90-degree angle to the surface.
- g. Spray gun should make a slight "spitting" sound. This is a characteristic of the guns and is necessary for an even texture. The product will self-level.
- h. When surface becomes touch dry, spray subsequent coats.
- i. While spraying, be careful not to blow rubber crumb away from the area you are working on as this can accumulate in other areas of the job and prevent the polyurethane from bonding with the substrate.
- j. If the rubber is bouncing back at you, lower the pressure or hold the gun further from the surface.
- k. The further away from the surface you hold the gun, the greater the texture, the closer, the finer.
- l. Remove any overspray immediately with cloth and water.

B. Application Temperature and Curing Time

- 1. Under normal working conditions the product will be touch dry within 1 hour and can be subjected to light foot traffic within 24 hours. Full curing time only affects the amount of time required to wait before subjecting the surface to cleaning, heavy loads and chemical exposure. Surface can be subjected to normal loads well before this minimum time requirement.
- 2. The coating should not be subjected to cleaning, heavy loads or chemical exposure until fully cured after 7 days, less in hot-humid conditions, more in cold, dry weather. Dry times in this manual are based on a temperature of 77 degrees Fahrenheit and 50% humidity. The product should not be used under 40 degrees Fahrenheit. Do not allow product to freeze.
- 3. DO NOT USE ANY SOLVENTS, SOLVENT BASED ALCOHOLS, THINNERS OR LACQUERS, TO THIN THE PRODUCT.

3.5 PROTECTION

Protect the installed surface from damage resulting from subsequent construction activity on the site

3.6 STORAGE AND REPAIR

- A. To store partially used cans, seal can well (airtight) and place in cool, dry place. The contents should be usable for at least 12 months. DO NOT LET FREEZE.
- B. The evaporation of the water within the product will cause the product to cure. If some water content has evaporated, reconstitution with clean water may restore product viability if the curing process within the can is not too advanced.

3.7 REPAIRING

In the event that the Product is damaged, it can easily be repaired, or over coated, due to self-bonding.

- A. Remove all damaged product. Use a sharp knife as a utility knife to make a well-defined area such as a square and eliminate uneven edges
- B. Sand area with 36 or 40 grit sandpaper so that the new application can get a good grip. Slightly bevel the edges of the existing product so that the new product can fill in the cutout area and go slightly onto the existing product.
- C. Clean area with water.
- D. Test for adhesion first, before completing job. Then apply the product to the affected area.

3.8 MAINTENANCE

- A. Most general floor cleaners have been tested and will work well. Recommended examples include: Simple Green, TSP, Laundry Detergents, Citrus Orange Cleaners, Commercial Degreasers.
- B. DO NOT USE BLEACH, BLEACH PRODUCTS OR CAUSTICS.
- C. For best results, use a stiff bristled deck brush to agitate cleaner on the surface.
- D. Rinse surface thoroughly to remove all residue.
- E. Surfaces can also be cleaned with use of automatic scrubbers. These are machines which, in one pass, put down the washing solution, scrub the floor with a light pad, and vacuum up the dirty water. It should be pointed out that the pad pressure used in the scrubber must be light and need only be sufficient for the pad to make light contact with the floor.
- F. Heavy scrubbing will negatively affect the coated surface.

*****END OF SECTION*****

TS13 – PLANTINGS

*This specification amends Section 9030 of the 2023 Edition of the “Iowa Statewide Urban Design and Specifications” for public improvements as it pertains to the following bid items:

- Deciduous Shrubs
- Ornamental Tree
- Perennial Ground Cover (1 Gal.)
- Deciduous Tree
- Evergreen Tree

1.08 Measurement and Payment: Replace with the following.

1. Measurement: Each tree, shrub, groundcover or perennial plant accepted in place will be counted.
2. Payment: Payment will be at the unit price for each tree, shrub, or groundcover perennial plant. Payment will be made according to the following:
 - a. 100% of unit price at initial acceptance (less retainage). Initial acceptance will be determined by Engineer. Plant material shall be thriving, fully maintained and show no signs of stress. Upon substantial completion of entire project, a one-year warranty period will commence. Contractor shall provide one-year warranty certificate with start and finish dates as directed by Engineer. Contractor shall maintain all plant material as necessary, including watering, weeding control, pruning, and fertilizing, to ensure healthy, vigorous plant material throughout warranty period.
 - b. At end of one-year warranty period, the Contractor and Engineer will conduct a thorough review of all plant material. Any plant material not thriving shall be replaced with same size, species and quality as originally planted, per contract documents, at no additional cost to the Owner. A one-year warranty period will apply to all replacement plant material.
3. Includes: Unit price includes, but is not limited to, delivery, excavation, installation, watering, backfill, mulching, wrapping, staking or guying, herbicide, maintenance during establishment and warranty periods, and replacements.

2.02 Mulch: Replace with the following.

- A. Finely shredded, double processed hardwood mulch.
- B. Particle sizes ranging from 0.25-0.5 inch diameter and maximum 3 inches in length.
- C. Green or freshly chipped or shredded mulch shall be rejected.
- D. Mulch shall be free of weeds, weed seed, chaff, diseases, or other foreign material.

2.03 Backfill Material: Replace with the following.

- A. Planting backfill shall consist of topsoil, compost amended as indicated on contract documents. See plan sheets for amended soil mix design.
- B. Existing on-site soils may not be used as planting backfill.

2.07 Water: Replace with the following.

- A. Provide water and watering equipment such as hoses, tanks, reels, bags or bladders, mobile equipment, nozzles, and sprinklers for the purpose of regular watering activities during the establishment period. Provide water free of substances harmful to plant growth. No fertilizers, pesticides, or growth regulators will be used in the water.
- B. For trees, provide slow-release watering system. Contractor is responsible for proper use of slow-release watering products per manufacturer and the health of the trees.
 - a. Products:
 - i. Preapproved product:
Manufacturer: Treegator Original
Treegator
153 Mosswood Boulevard
Youngsville, NC 27596
Phone: 1-866-873-3428
Webpage: <https://treegator.com/index.html>
 - ii. Or approved equal.

TS14 – CHAIN LINK FENCING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes labor, materials, equipment, and accessories to provide the following:
 - 1. Chain link fencing, including fasteners, fittings, and accessories.
 - a. Extension of existing galvanized chain link fencing adjacent to public works parking lot.
 - 2. Concrete footings for posts and related excavation.

1.2 MEASUREMENT AND PAYMENT:

- A. Chain Link Fencing will be measured and paid for by the linear foot (LF). This item includes all labor, materials, and equipment necessary for the design and installation of the chain link fence as indicated in the plans for Alternate E. Includes all items necessary to provide a fully installed fence system in the areas indicated on the plan set including but not limited to excavations, concrete footings, backfilling and installation of all components and hardware.

1.3 SUBMITTALS

- B. Provide Shop Drawings illustrating typical fence construction.

1.4 COORDINATION

- A. Coordinate installation of fencing with paving contractor when fencing lies within paved areas.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Posts, Rails, and Braces

- 1. General Requirements: Posts shall be standard weight (Schedule 40) and hot-dip galvanized pipe meeting the requirements of ASTM A53. Pipe posts shall have tops which exclude moisture.
- 2. Terminal Posts: Posts shall include end, corner, and pull posts and shall be 3-inch outside diameter Schedule 40 pipe, unless noted otherwise. Posts shall be standard weight 5.79 pounds per foot and of sufficient length to allow for posts to be set into concrete footing as noted on the Drawings.
- 3. Line Posts: Posts shall be 2 ½-inch outside diameter Schedule 40 pipe, unless noted otherwise. Posts shall be standard weight 3.65 pounds per foot and of sufficient length to allow for posts to be set into concrete footing, or sufficient length to be air driven minimum 72 inches where indicated on the Drawings.
- 4. Rails: Rails shall be 1 5/8-inch outside diameter Schedule 40, standard weight of 2.27 pounds per foot. Applies to top and bottom rails (and intermediate rails, where applicable).
- 5. Gate Posts: None specified.

B. Chain Link Fabric:

- 1. Fabric shall be woven from 9-gauge steel (coated size) wire in a 1-3/4-inch mesh. Fabric wire shall have a minimum tensile strength of 80,000 pounds per square inch. Fabric shall be 1-piece vertically for fences up to and including 12 feet high.
- 2. Selvage Edges: Both top and bottom selvage edges shall be knuckled.

C. Fittings:

- 1. Pressed steel or malleable iron, hot dip galvanized, meeting the requirements of ASTM A153.

- D. Gates: None specified.
- E. Finish: Galvanized. All components.
- F. Concrete shall be 3,000 psi, air entrained concrete.

PART 3 - EXECUTION

3.1 CONDITION OF SITE

- A. Work shall not begin prior to completion of finish grading.

3.2 FENCE INSTALLATION

- A. Installation of Chain Link Fence shall comply with ASTM F 567.
- B. Installation of Posts - Air-Driven: Line Posts shall be set by air-driving posts to a depth of at least 72 inches into firm, undisturbed, or compacted. Check each post for vertical and top alignment. Core pavement to receive air-driven posts and caulk annular space after setting post.
- C. Installation of Posts - Concrete Footings: Holes for corner, end, pull, and gate post footings shall be drilled only in firm, undisturbed or compacted soil. Footing hole depth shall be approximately 6 inches deeper than post bottom. Place concrete around posts in a continuous pour and tamp for consolidation. Check each post for vertical and top alignment.
- D. Installation of Post Bracing Assembly: Brace terminal posts with a brace rail and tension wire. Extend brace rail from each terminal post to first adjacent line post. Securely fasten braces to posts with heavy pressed steel connections, then truss from line post back to terminal post with 3/8-inch diameter truss rod complete with tightening unit. Install tension wires before stretching fabric.
- E. Installation of Chain Link Fabric: Install fabric on tennis court side of fence and anchor to framework so that fabric remains in tension after pulling force is released. Attachment of fabric to terminal posts shall be made with minimum 1/4-inch by 3/4-inch tension bar and 12 gauge by 1-inch wide clamps using minimum 3/8-inch diameter carriage bolts. Attachment of fabric to line posts shall be made with 6-gauge wire clips spaced 12 inches on center. Attachment of fabric to top and bottom rails shall be made with 9-gauge wires spaced 12 inches on center.
- F. Installation of Gates: None specified.

3.3 CLEANING AND PROTECTION

- A. Site shall be cleared of excess spillage of concrete and cut wires and post hole excavation scattered uniformly away from posts.
- B. Tamp pavement surrounding posts to proper grade and level. Refer to Item 3.02.B for caulking of air-driven posts.

*****END OF SECTION*****

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SECTION 26 05 00

COMMON WORK RESULTS

PART 1 - GENERAL

1.1 SCOPE

- A. The work under this section includes basic electrical requirements, which are applicable to all Division 26, 27 and 28 sections.
- B. Overview of Work
 - 1. Demolition/Relocation/Modification
 - 2. Branch Power
 - 3. Equipment Connections
 - 4. Lighting and Lighting Controls
- C. In these documents, "Contractor" refers to the Electrical Contractor and all their subcontractors, unless listed otherwise. The division of Work with the electrical scope is the responsibility of the lead Electrical Contractor.
- D. The Contractor is responsible for providing and installing fully functional systems.
- E. If the Work is shown on the drawings or noted in the specifications, it shall be included by the Contractor.
- F. If equipment is provided by the Contractor, it shall be installed by the Contractor, unless noted otherwise.
- G. Drawings are necessarily diagrammatic by their nature and are not intended to show every connection in detail or every conduit in its exact location. Carefully investigate structural and finish conditions and coordinate the separate trades in order to avoid interference between the various phases of Work. Organize and lay out Work so that it will be concealed in furred chases and suspended ceilings, etc., in finished portions of the building, unless specifically noted to be exposed. Install all Work parallel or perpendicular to building lines unless otherwise noted.
- H. The intent of the Drawings is to establish the types of systems and functions; not to set forth each item essential to the functioning of the system. Install the Work complete, including minor details necessary to perform the function indicated. Review pertinent Drawings and adjust the Work to conditions shown. Where discrepancies occur between Drawings, Specifications, and actual field conditions, immediately notify the Architect and Engineer for interpretations.
- I. All sizes as given are minimum except as noted.
- J. All materials shall be new (unless noted or stated otherwise) and free of defect.

- K. All work shall be subject to the Architect's, Engineer's, and Owner's observations from the commencement of work until the acceptance of the completed work.

1.2 RELATED WORK

- A. Applicable provisions of Division 0 and Division 1 govern work under this Section.

1.3 REFERENCES

- A. All work shall conform to the most current version of all applicable codes and standards or the version adopted by the jurisdiction.

- B. Codes

- 1. International Building Code
- 2. International Fire Protection Code
- 3. International Energy Conservation Code
- 4. NFPA – National Fire Protection Association
 - a. NFPA 70 (National Electric Code)
 - b. NFPA 72 (National Fire Alarm and Signaling Code)
 - c. NFPA 101 (Life Safety Code)
- 5. State or City Codes for the City of Windsor Heights.

- C. Standards

- 1. ANSI

- D. Governing Bodies

- 1. Owner's Insurance Company
- 2. State Fire Marshall
- 3. AHJ – Authority Having Jurisdiction
- 4. UL - Underwriters Laboratories

1.4 SUBMITTALS

- A. The review of Shop Drawings by the Engineer is for general conformance with the design concept of the project and general compliance with the information given in the Contract Documents. Corrections or comments made on the shop drawings during this review do not relieve the contractor from compliance with the requirements of the Plans and Specifications. Approval of a specific item shall not include approval of an assembly of which the item is a component. The Contractor is responsible for: dimensions to be confirmed and correlated at the jobsite; information that pertains solely to the fabrication processes or to the means, methods, techniques, sequences and procedures of construction; coordination with the Work of all trades; and for performing all work in a safe and satisfactory manner.

- B. Refer to individual technical Specification sections for specific submittal requirements.
- C. Submission of Shop Drawings electronically in .PDF format is required.
- D. If hard copies of shop drawings are required for this project, coordinate the quantity with the Architect and General Contractor. Provide one (1) copy for the Engineer's records.
- E. The Engineer will review one (1) resubmittal for each product. If additional resubmittals are required, the Contractor shall be responsible to bear the cost for the Engineer to recheck and handle the additional shop drawing submittals. Documents will not be reviewed until payment is agreed upon.
- F. Contractor may request electronic files from the Engineer if needed to complete their Shop Drawings. An Electronic File Request Form will be sent to the contractor if files are requested and must be completed and signed before the AutoCAD files are released to the Contractor.
- G. All submittals for equipment and materials shall be reviewed and approved by the Engineer prior to the fabrication or release by the contractor. This includes the coordination of equipment between trades. The release, purchase, installation or fabrication of any items prior to the contractor receiving an approved shop drawing will be at the contractor's own risk. Any rework that results will be provided by the contractor at no cost to the Owner or design team.
- H. Submittals must be reviewed and approved by the Contractor before submitting to the Engineer.
- I. Submittals shall be grouped to include complete submittals of related systems, products, and accessories in a single submittal. Mark dimensions and values in units to match those specified. Include wiring diagrams of electrically powered equipment.

1.5 ELECTRONIC DOCUMENT RELEASE

- A. Electronic versions of the bid documents will be made available to the contractors for use during the bidding process and to help generate fabrication drawings for various systems. A summary of the requirements for the various document types is listed below:
 - 1. PDF
 - a. Contact the Construction Manager or Architect to obtain a PDF version of the Bid Documents. No Document Release Form is required.
 - 2. REVIT
 - a. The REVIT drawings will be converted to AutoCAD and then transferred to the contractor.
 - b. Bluestone Engineering can provide an AutoCAD version of the bid documents for the contractor to use for generating shop drawings and fabrication drawings. This will include plan drawings with the architectural background. The contractor is responsible for incorporating any modifications that occur during bidding by all disciplines. Details and schedules will not be included.
 - c. A document release form (see attached) will be required to be completed by the contractor to determine the version of AutoCad and drawings required.
 - d. Submittal of the document release form fee will be required prior to the AutoCAD files being transmitted.

1.6 SUBSTITUTIONS

- A. All manufacturers listed as Acceptable Manufacturers in each specification section are considered equal to the basis of design. The basis of design is preferred and will take precedence. Any products from an alternate approved manufacturer need to meet the requirements and performance specified and shall be equal to the basis of design.
- B. The Contractor may request permission for a substitution of any item (equipment or material), subject to the following conditions:
 - 1. Submit substitution requests in writing to the Engineer, on a form supplied by the Engineer. A sample copy of this form is included at the end of this section. An electronic copy can also be provided to the Contractor by the Engineer.
 - 2. Where equipment or accessories are used which differ in arrangement, configuration, dimensions, ratings, or engineering parameters from those indicated on the contractor documents, the Contractor is responsible for all costs involved in integrating the equipment or accessories into the system and the assigned space and for obtaining the performance from the system into which these items are placed as well as any re-design costs incurred by the Architect or Engineer. The Contractor is also responsible for coordinating changes required by other trades.
 - 3. Any requests for alternate manufacturers must be submitted to the Architect/Engineer at least ten (10) days prior to bid day. Incomplete substitution requests will not be considered.
- C. Approval
 - 1. No work involving requests for substitution shall commence without written approval on the provided form by the Engineer.
 - 2. Any work started or material ordered/installed by the Contractor without written approval shall be removed/repared at the sole expense of the contractor. The Contractor will also be responsible for any costs incurred by the Owner for such rework.

1.7 QUALITY ASSURANCE

- A. Warranty
 - 1. Equipment warranty shall be a minimum of one (1) year from date of factory supervised startup or from the date of substantial completion, whichever is later.
 - 2. Contractor shall warranty all of their work for one (1) year from the date of substantial completion
- B. These documents are diagrammatical in nature and intended to convey scope and general arrangement of the electrical and technology systems. Not all conduits, junction boxes, accessories, etc. are shown on Plan. If items are required to make a system fully operational but not shown on Plan or in these Specifications, they shall be included by the Contractor.

- C. The intent of the Drawings is to establish the types of systems and functions; not to set forth each item essential to the functioning of the system. Install the Work complete, including minor details necessary to perform the function indicated. Review pertinent Drawings and adjust the Work to conditions shown. Where discrepancies occur between Drawings, Specifications, and actual field conditions, immediately notify the Architect and Engineer for interpretations.
- D. It is the contractor's responsibility to determine all utility routing prior to purchase and installation of material.
- E. For remodel or addition projects, the contractor shall visit and survey the site prior to submitting a bid. The contractor shall visit the site to understand the complexity of utility routing, phasing, staging, and all general installation. Submitting a bid means the contractor acknowledges the complexities of the project and has made provisions for overcoming these complexities in their bid.
- F. The Contractor shall report any discrepancies between these documents and site conditions immediately to the Engineer prior to submitting a bid or starting work. Submittal of a bid indicates that the contractor and the contractor's subcontractors have carefully and thoroughly reviewed the Drawings, Specifications, and other construction documents and have found them complete and free from ambiguities and sufficient for the purposes intended.
- G. Install all equipment per the manufacturer's requirements / recommendations.
- H. No equipment provided or installed shall contain mercury.
- I. All equipment shall be UL listed where applicable.

1.8 CONTINUITY OF EXISTING SERVICES AND SYSTEMS

- A. No outages shall be permitted on existing systems except at the time and during the interval specified by the Engineer and the Owner. Any outage must be scheduled when the interruption causes the least interference with normal work schedules and business routines. No extra costs will be paid to the Contractor for such outages which must occur outside of regular weekly working hours unless specifically noted in the Specifications or in the bidding requirements.
- B. This Contractor shall restore any electrical services interrupted as a result of a lack of coordination to proper operation as soon as possible.
- C. Contractor shall notify Owner of any utility service shutdown forty-eight (48) hours in advance. This includes power, telephone, cable TV, and other utilities related to this Contractor's scope of work.

1.9 REGULATORY AND UTILITY REQUIREMENTS

- A. Contractor is responsible for coordinating all required site inspections by authorities having jurisdiction. Contractor shall notify General Contractor of all scheduled inspections seven (7) working days prior to site visit.
- B. Contractor is responsible for paying for all fees, permits, and inspections that are required to complete their work.

1.10 PROTECTION OF FINISHED SURFACES

- A. Furnish one (1) can of touch-up paint for each different color factory finish for equipment furnished by the Contractor. Deliver touch-up paint with other "loose and detachable parts" as covered in the General Requirements.

1.11 WORK BY OWNER AND/OR OWNER AGENCY

- A. Asbestos abatement and PCB equipment (other than light fixture ballasts) removal and disposal, if required, will be by the Owner under separate contract.
- B. Electrical testing not described in these contract documents will be by the Owner under separate contract(s).

1.12 OMISSIONS

- A. No later than ten (10) days before bid opening, the Contractor shall call the attention of the Architect and Engineer to any materials or apparatus the Contractor believes to be inadequate and to any necessary items of work omitted.

1.13 DELIVERY, STORAGE, AND HANDLING

- A. All equipment and materials shall be protected during shipment and storage against physical damage, vermin, dirt, corrosive substances, fumes, moisture, cold and rain.
- B. Store equipment indoors in clean dry space with uniform temperature to prevent condensation. Equipment shall include but not be limited to enclosures, controllers, circuit protective devices, cables, wire, light fixtures, electronic equipment, and accessories.
- C. During installation, equipment shall be protected against entry of foreign matter; and be vacuum-cleaned both inside and outside before testing and operating. Compressed air shall not be used to clean equipment. Remove loose packing and flammable materials from inside equipment.
- D. Take such precautions as are necessary to protect apparatus and materials from damage. Damaged equipment shall be, as determined by the Owner and/or Engineer, placed in first class operating condition or be returned to the source of supply for repair or replacement.
- E. Protect factory finish from damage during construction operations until acceptance of the Project. Restore any finishes that become stained or damaged to Owner's satisfaction.

1.14 DIVISION OF WORK AND COORDINATION

- A. The Electrical Contractor is responsible for providing and installing power wiring up to equipment provided by others for a single point connection. Internal wiring of equipment provided by others shall be the responsibility of the manufacturer or the contractor responsible for providing and installing the equipment.
- B. Controls, disconnect switches, starters, variable frequency drives, etc. shall be provided and installed by the contractor noted on the plans and in the specifications. It is the responsibility of the Contractor to request written clarification for any ambiguity regarding division of work and coordination at least ten (10) days prior to bid.

- C. Any installed work that is not coordinated and that interferes with other contractor's work shall be removed or relocated at the installing contractor's expense.
- D. Arrange for conduit and raceway spaces, chases, slots, and openings in building structure during progress of construction, to allow for electrical installations.
- E. Coordinate installation of required supporting devices and set sleeves in poured-in-place concrete and other structural components as they are constructed.
- F. Coordinate requirements for access panels and doors for electrical items requiring access that are concealed behind finished surfaces. Access panels and doors are specified in Division 08 Section "Access Doors and Frames."

1.15 SALVAGE MATERIALS

- A. No materials removed from this project shall be reused except as specifically noted or allowed on the Drawings. All materials removed shall become the property of, and shall be disposed of by, the Contractor except for items the Owner has designated they will keep.

1.16 OPERATION AND MAINTENANCE DATA

- A. All operations and maintenance data shall comply with the submission and content requirements specified under section GENERAL REQUIREMENTS.
- B. In addition to the general content specified under GENERAL REQUIREMENTS supply the following additional documentation as applicable:
 - 1. Internal and interconnecting wiring and control diagrams with data to explain detailed operation and control of the equipment.
 - 2. A control sequence describing start-up, operation, and shutdown.
 - 3. Description of the function of each principal item of equipment.
 - 4. Installation instructions.
 - 5. Safety precautions for operation and maintenance.
 - 6. Diagrams and illustrations.
 - 7. Periodic maintenance and testing procedures and frequencies, including replacement parts numbers and replacement frequencies.
 - 8. Performance data.
 - 9. Where applicable, pictorial "exploded" parts list with part numbers. Emphasis shall be placed on the use of special tools and instruments. The list shall indicate sources of supply, recommended spare parts, and name of servicing organization.
 - 10. List of factory approved or qualified permanent servicing organizations for equipment repair and periodic testing and maintenance, including addresses and factory certification qualifications.

1.17 RECORD DRAWINGS

- A. The Contractor shall maintain at least one (1) copy of the Specifications and Drawings on the job site at all times.
- B. The Architect will provide the Contractor with a suitable set of Contract Drawings on which daily records of changes and deviations from contract shall be recorded. Dimensions and elevations on the record drawings shall locate all buried or concealed piping, conduit, or similar items.
- C. The daily record of changes shall be the responsibility of Contractor's field superintendent. No arbitrary mark-ups will be permitted.
- D. At completion of the project, the Contractor shall submit the marked-up record drawings to the General Contractor prior to final payment.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Conditions: Provide new products of manufacturers regularly engaged in production of such equipment. Provide the manufacturer's latest standard design for the type of product specified.

2.2 IDENTIFICATION

- A. See Electrical Section 260553 – Identification.

PART 3 - EXECUTION

3.1 EXCAVATION AND BACKFILL

- A. Perform all excavation and backfill work to accomplish indicated electrical systems installation in accordance with Division 31.

3.2 CONCRETE WORK

- A. The Division 3 Contractor will perform all cast-in-place concrete unless noted otherwise elsewhere. Provide all layout drawings, anchor bolts, metal shapes, and/or templates required to be cast into concrete or used to form concrete for the support of electrical equipment.

3.3 CUTTING AND PATCHING

- A. Refer to Division 1, General Requirements, Cutting and Patching.

3.4 COORDINATION

- A. The Contractor shall cooperate with other trades in locating work in a proper manner. Should it be necessary to raise or lower or move longitudinally any part of the electrical work to better fit the

general installation, such work shall be done at no extra cost provided such decision is reached prior to actual installation. The Contractor shall check location of electrical outlets with respect to other installations before installing.

- B. The Contractor shall verify that all devices are compatible for the surfaces on which they will be used. This includes, but is not limited to light fixtures, panelboards, devices, etc. and recessed or semi-recessed heating units installed in/on architectural surfaces.
- C. Coordinate all work with other contractors prior to installation. Any installed work that is not coordinated and that interferes with other contractor's work shall be removed or relocated at the installing Contractor's expense.
- D. Coordinate clearances in front of and above electrical distribution equipment with other trades to avoid interference issues. Maintain clearances as defined in the National Electrical Code. Pipes, ducts, etc. shall not be installed above electrical distribution equipment.

3.5 HOUSEKEEPING AND CLEAN UP

- A. The Contractor shall clean up and remove from the premises, daily, all debris and rubbish resulting from its work and shall repair all damage to new and existing equipment resulting from its work. When job is complete, this Contractor shall remove all tools, excess material and equipment, etc., from the site.

3.6 TESTING

- A. Test Conditions
 - 1. Place circuits and equipment into service under normal conditions, collectively and separately, as may be necessary to determine satisfactory operation. Perform specified tests in the presence of the Owner's representative(s). Furnish all instruments, wiring, equipment and personnel required for conducting tests. Demonstrate that the equipment operates in accordance with requirements of the Contract Documents. Special tests on certain items are specified hereinafter.
 - 2. Where specified that the testing be performed by an independent testing company, an Owner-approved National Electrical Testing Association (NETA) certified testing company shall be used. Submit copies of test reports.

3.7 OWNER TRAINING

- A. Contractor to provide factory authorized representative and/or field personnel knowledgeable with the operations, maintenance and troubleshooting of the system and/or components defined within this section for a minimum period of 1 hour.

3.8 PROJECT CLOSEOUT REQUIREMENTS

- A. Final project closeout tasks
 - 1. Deliver all spare parts listed in each specification section. Deliver to Owner chosen location.
 - 2. All equipment labeled per specifications.

3. All equipment cleaned and ready for use. Install new fuses in all equipment with fuses; do not use Owner's spare fuses.
- B. Contractor requirements
1. Marked up drawings and specifications provided to Engineer for incorporation of as-built drawings or to serve as the as-built drawings depending on the project requirements. As-built drawings shall be clean and legible.
 2. Operation and Maintenance (O & M) Manuals shall include the following:
 - a. Contractor contact for warranty work
 - b. Approved shop drawings, incorporating all review comments
 - c. Warranty copies
 - d. Equipment start-up reports
 - e. Operation and maintenance instructions
 3. Utility Rebate Forms
 - a. Contractor shall submit completed energy rebate forms for each piece of equipment that is eligible for a rebate. Eligible equipment shall include, but not be limited to the following:
 - 1) Exterior Lighting
 - b. Contractor to complete information regarding equipment. Submit form to Owner; Owner will complete Owner's contact information and send the completed form to the utility.
- C. Three (3) final approved O & M Manuals shall be delivered to Owner. Each manual shall be an appropriately sized three (3) ring binder with a vinyl cover and printed spine and cover labels. Each section shall have a printed divider tab. Each section shall be listed in a table of contents at the beginning of the manual.

END OF SECTION 26 05 00

(ELECTRONIC DOCUMENT RELEASE FORM & SUBSTITUTION REQUEST FORMS ATTACHED)

Document Release Form
Information Requested:

Project Name:
Drawings Requested:

Media Type: (Check all that are applicable)

- | | |
|--|--|
| <input type="checkbox"/> AutoCAD DWG Files (Version _____) | <input type="checkbox"/> Adobe PDF Files |
| <input type="checkbox"/> REVIT Files (Version _____) | <input type="checkbox"/> Other |

Requesting Party:

Name:	Address 1:
Company:	Address 2:
Signature:	Email Address:
Date:	Phone #:

Bluestone Use:

Form Sent By:	Date:
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Bluestone Project #:

Data contained on these electronic files are part of our instruments of service and shall not be used by you or anyone else receiving these data through or from you for any purpose other than as a convenience in the preparation of shop drawings for the referenced project. Any other use or reuse by you or by others will be at your sole risk and without liability or legal exposure to us. You agree to make no claim and hereby waive, to the fullest extent permitted by law, any claim or cause of action of any nature against us, our officers, directors, employees, agents or sub consultants that may arise out of or in connection with your use of the electronic files. Furthermore, you shall, to the fullest extent permitted by law, indemnify and hold us harmless against all damages, liabilities or costs, including reasonable attorneys' fees and defense costs, arising out of or resulting from your use of these electronic files. These electronic files are not construction documents. Differences may exist between these electronic files and corresponding hard-copy construction documents. We make no representation regarding the accuracy or completeness of the electronic files you receive. In the event that a conflict arises between the signed or sealed hard-copy construction documents prepared by us and the electronic files, the signed or sealed hard-copy construction documents shall govern. You are responsible for determining if any conflict exists. By your use of

these electronic files, you are not relieved of your duty to fully comply with the contract documents, including, and without limitation, the need to check, confirm and coordinate all dimensions and details, take field measurements, verify field conditions and coordinate your work with that of other contractors for the project. Because information presented on the electronic files can be modified, unintentionally or otherwise, we reserve the right to remove all indicia of ownership and/or involvement from each electronic display.

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SUBSTITUTION REQUEST FORM (DURING BIDDING)

We submit for your consideration the following product instead of the specified item for the following project:

PROJECT: _____

SPEC. SECTION	SPEC. TITLE	PARAGRAPH	SPECIFIED ITEM
_____	_____	_____	_____

Proposed Substitution: _____

MANUFACTURER	TRADE NAME	MODEL NO.
_____	_____	_____

Attached data includes product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.

Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including Architectural and Engineering design, detailing, and construction costs caused by the substitution.

Submitted by:

Signature

Firm

_____ Telephone	_____ Email	_____ Date
--------------------	----------------	---------------

Engineer's Review and Action

- ☐ Substitution Approved
- ☐ Substitution Approved As Noted
- ☐ Substitution Rejected
- ☐ Substitution Request Received Too Late

Signed by:

Date

Supporting Data Attached:

- ☐ Drawings
- ☐ Product Data
- ☐ Samples
- ☐ Tests
- ☐ Reports
- ☐ Other _____

SUBSTITUTION REQUEST FORM (AFTER BIDDING)

We submit for your consideration the following product instead of the specified item for the following project:

PROJECT: _____

SPEC. SECTION	SPEC. TITLE	PARAGRAPH	SPECIFIED ITEM
_____	_____	_____	_____

Proposed Substitution: _____

MANUFACTURER	TRADE NAME	MODEL NO.
_____	_____	_____

INSTALLER	PHONE NO.
_____	_____

History: ☐ New Product ☐ 2-5 years old ☐ 5-10 years old ☐ More than 10 years old

Differences between proposed substitution and specified product: _____

Proposed substitution affects other parts of Work: ☐ No ☐ Yes; explain _____

Proposed substitution changes Contract Time: ☐ No ☐ Yes [Add] [Deduct] _____ days

Savings to Owner for accepting substitution: \$ _____

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated above is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including Architectural and Engineering design, detailing, and construction costs caused by the substitution.
- Coordination, installation, and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by:

Signature

Firm

Telephone

Email

Date

Engineer's Review and Action

- ☐ Substitution Approved
- ☐ Substitution Approved As Noted
- ☐ Substitution Rejected
- ☐ Substitution Request Received Too Late

Signed by:

Date

Supporting Data Attached:

- ☐ Drawings ☐ Product Data ☐ Samples ☐ Tests ☐ Reports ☐ Other _____

SECTION 26 05 02

ELECTRICAL DEMOLITION FOR REMODELING

PART 1 - GENERAL

1.1 SCOPE

- A. Perform all Work required to provide the following demolition indicated by the Contract Documents with supplementary items necessary for proper installation.

1.2 REFERENCES

- A. Applicable provisions of Division 1 govern work under this Section.

PART 2 - PRODUCTS

2.1 MATERIALS AND EQUIPMENT

- A. Materials and equipment for patching and extending work as specified in the individual Sections.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify field measurements and circuiting arrangements as shown on Drawings.
- B. Verify that abandoned wiring and equipment serve only abandoned facilities.
- C. Verify whether or not PCB ballasts exist in light fixtures which will be disposed of. If PCB light fixture ballasts exist, then follow requirements in PCB BALLAST HANDLING AND DISPOSAL below.
- D. Demolition drawings are based on casual field observation and/or existing record documents. It is the responsibility of the Contractor to visit the site prior to bidding and include any necessary demolition, or relocation of items required to complete the work. Any work not included shall be clarified with the submittal of the Contractor's bid. Report discrepancies to the Architect and Engineer before disturbing existing installation.
- E. Beginning of demolition means installer accepts existing conditions.

3.2 PREPARATION

- A. Disconnect electrical systems in structures, floors, walls, and ceilings scheduled for removal.
- B. Coordinate utility service outages with the Owner, Architect, Engineer, and General Contractor. Also, if applicable, coordinate utility service outages with the local Utility Company.

- C. Provide temporary wiring and connections to maintain existing systems in service during construction. When work must be performed on energized equipment or circuits, use personnel experienced in such operations. In particular, all security and safety systems must be maintained in operation at all times as required by the Owner. This includes security and safety lighting.
- D. Existing Electrical Service: Maintain existing system in service until new system is complete and ready for service. Disable system only to make switchovers and connections. Obtain permission from the Owner at least 48 hours before partially or completely disabling system. Minimize outage duration. If required, make temporary connections to maintain service in areas adjacent to work area.

3.3 DEMOLITION AND EXTENSION OF EXISTING ELECTRICAL WORK

- A. Demolish and extend existing electrical work to meet all requirements of these Specifications.
- B. If certain raceways and boxes are abandoned but not scheduled for removal, those items must be shown on the "As Built Drawings".
- C. Remove, relocate, and extend existing installations to accommodate new construction.
- D. Remove abandoned wiring to source of supply.
- E. Accessible portions of abandoned Class 2, Class 3 and PLTC cables shall be removed in accordance with NEC 725.25. Where cables remain for future use they shall be tagged per the NEC.
- F. Accessible portions of abandoned fire alarm cables shall be removed in accordance with NEC 760.25. Where cables remain for future use they shall be tagged per the NEC.
- G. Accessible portions of abandoned fiber optic cables shall be removed in accordance with NEC 770.25. Where cables remain for future use they shall be tagged per the NEC.
- H. Accessible portions of abandoned communication cables shall be removed in accordance with NEC 800.25. Where cables remain for future use they shall be tagged per the NEC.
- I. Remove exposed abandoned conduit. Cut conduit flush with walls and floors, and patch surfaces.
- J. Disconnect abandoned outlets and remove devices. Remove abandoned outlets if conduit servicing them is abandoned and removed. Provide blank cover for abandoned outlets which are not removed.
- K. Disconnect and remove abandoned panelboards and distribution equipment.
- L. Disconnect and remove electrical devices and equipment serving utilization equipment that has been removed.
- M. Disconnect and remove abandoned luminaires. Remove brackets, stems, hangers, and other accessories.
- N. Repair adjacent construction and finishes damaged during demolition and extension work.
- O. Maintain access to existing electrical installations which remain active. Modify installation or provide access panel as appropriate.

- P. Extend existing installations using materials and methods compatible with existing electrical installations, or as specified. This includes the extension of the circuit from the last active device to the next device in the system to be activated.

3.4 PCB BALLAST HANDLING AND DISPOSAL

- A. Generally, all high power factor fluorescent light ballasts manufactured before 1978 and some HID ballasts contain PCB compounds in their capacitors. The Contractor shall inspect all ballasts in all light fixtures (which will become the property of the Contractor and will be removed from the project site as part of this project) and take the actions described below.
1. All ballasts labeled as "NON-PCBs" or "NO PCBs" shall become the property of the Contractor. If the PCB content is not stated on the ballast label, the ballast shall be handled as a PCB ballast.
 2. All PCB ballasts shall be removed from the light fixtures and shall have the wires clipped off. However, before removal, all PCB ballasts shall be carefully inspected for leaks. If a ballast appears to be leaking (evidenced by potting compound leaking out or by an oily film on the ballast surface) the ballast must be handled per EPA and DNR PCB regulations. Basically, this means the ballast is to be carefully removed from the fixture and placed in an approved drum. See paragraph below for the drum specifications. The person removing the ballast from the fixture shall wear protective gloves, eye protection, and protective clothing as necessary.
 3. If the fixture has also been contaminated, it must be cleaned to less than ten (10) micrograms/100 square centimeters contamination before disposal. This cleaning must be done by an approved PCB contractor and is not considered a part of this contract.
 4. The ballasts shall then be placed in US DOT approved type 17C or type 17H drums (barrels) furnished by the Contractor. 55 gallon and 30 gallon drums are available from most drum suppliers. The quantity and size of the drums will be determined by the Contractor at the time of construction.
 5. These barrels shall be placed in storage with the cover that came with the barrels, in a location within a building, as designated by the General Contractor or the Owner. The barrels are not to be placed outside where they are exposed to weather.
 6. THESE BALLASTS ARE NOT TO BE REMOVED FROM THE WORK SITE BY THE CONTRACTOR. To do so, would be a violation of DNR and DOT hazardous waste regulations and may result in a fine to the Contractor.
 7. The Contractor shall label and mark the PCB storage drums with EPA approved PCB labels.
 8. The Contractor shall also provide approved PCB absorbent materials to be stored immediately adjacent to the drum storage area. Do not place loose absorbent material in the drums.
 9. The Contractor shall provide to the General Contractor, in written form, a total count of these ballasts (or their total weight by barrel) and where they are stored.
 10. When the ballast demolition is completed and all PCB ballasts are placed in drums ready to be picked up for disposal, the Owner or Owner's Agent will make arrangements for pickup and disposal of the PCB ballasts.

3.5 LAMP HANDLING AND DISPOSAL

- A. All lamps (fluorescent, incandescent, and HID) contain mercury and/or lead (in the base) as well as other heavy metals and compounds which are regulated by the EPA and DNR during the disposal process. As

a result, regulations have been issued covering the handling and disposal of all lamps. Therefore, lamps which have been removed from service for disposal shall be handled as follows by the Contractor.

- B. The Contractor shall very carefully remove all lamps (fluorescent, incandescent, and HID) from light fixtures before removal of the fixture from its mounted position. This is to reduce the likelihood that the lamp(s) will be broken. If the Contractor breaks more than 1% of the total lamps removed for the project, the Contractor will be charged the cost difference between disposal of broken lamps and disposal of unbroken lamps for all lamps broken in excess of 1% of the total lamps removed in the project.
- C. The Contractor shall obtain containers from an approved lamp and ballast recycling vendor. Removed lamps shall be placed in containers provided by the Contractor and marked with the number and type of lamps. Containers shall be placed in storage in a location on the Owner's property (this may be in another building) arranged by the Owner's representative. The Contractor shall label the area as "Hazardous Material Storage - Mercury".
- D. The Contractor shall provide to the General Contractor, in written form, a count of all stored lamps by type at the completion of the project.
- E. The Owner will make arrangements for the lamps to be picked up.

3.6 CLEANING AND REPAIR

- A. Clean and repair existing materials and equipment which remain or are to be reused.
- B. Panelboards:
 - 1. Clean exposed surfaces and check tightness of electrical connections. Replace damaged circuit breakers and provide closure plates for vacant positions. Provide typed circuit directory showing revised circuiting arrangement.
- C. Luminaires:
 - 1. Remove existing luminaires for cleaning. Use mild detergent to clean all exterior and interior surfaces; rinse with clean water and wipe dry. Replace lamps, ballasts (if required) and broken electrical parts.

3.7 INSTALLATION

- A. Install relocated materials and equipment under the provisions of other sections.

END OF SECTION 26 05 02

SECTION 26 05 04

CLEANING AND TESTING

PART 1 - GENERAL

1.1 SCOPE

- A. Perform all Work required to provide the required cleaning, repair, adjustment, calibration, maintenance and testing of electrical equipment, as specified herein. This applies only to new electrical and existing electrical equipment being furnished, modified, worked on or serviced by this contractor for this project.

1.2 REFERENCES

- A. Applicable provisions of Division 1 govern work under this Section.

PART 2 - PRODUCTS – (NOT USED)

PART 3 - EXECUTION

3.1 GENERAL INSPECTION AND CLEANING OF ALL ELECTRICAL EQUIPMENT

- A. Inspect for physical damage and abnormal mechanical and electrical conditions.
- B. Any item found to be out of tolerance, or in any other way defective as a result of the required testing, shall be reported to the Engineer. Procedure for repair and/or replacement will be outlined. After appropriate corrective action is completed the item shall be re-tested.
- C. Compare equipment nameplate information with the latest single line diagram and report any discrepancies.
- D. Verify proper auxiliary device operation and indicators.
- E. Check tightness of accessible bolted electrical joints. Use torque wrench method.
- F. Make a close examination of equipment and remove any shipping brackets, insulation, packing, etc. that may not have been removed during original installation.
- G. Make a close examination of equipment and remove any dirt or other forms of debris that may have collected in existing equipment or in new equipment during installation.
- H. Clean All Equipment:
 - 1. Vacuum inside of panelboards, comm/data, security panel, etc.
 - 2. Loosen attached particles and vacuum them away.

3. Wipe all insulators with a clean, dry, lint free rag.
4. Clean insulator grooves.
5. Inspect equipment anchorage.
6. Inspect equipment and bus alignment.
7. Check all heater elements for operation and control.
8. Lubricate nonelectrical equipment per manufacturer's recommendations.

3.2 GROUNDING SYSTEMS

- A. Inspect the ground system for adequate termination at all devices.

3.3 GROUND FAULT SYSTEMS

- A. Inspect for physical damage.
- B. Inspect the neutral main bonding connection to assure:
 1. Zero sequence system is grounded upstream of sensor.
 2. Ground strap systems are grounded down stream from the sensing device.
 3. Ground connection is made ahead of the neutral disconnect link.

3.4 CABLES

- A. Visual and Mechanical Inspections:
 1. Inspect exposed sections for physical damage.
 2. Verify cable is supplied and connected in accordance with single line diagram.
 3. Inspect for shield grounding, cable support and termination.
 4. If cables are terminated through window type C.T.'s make an inspection to verify that neutrals and grounds are properly terminated for normal operation of protective devices.
 5. Inspect for visual jacket and insulation condition.
 6. Visible cable bends shall be checked against ICEA or manufacturer's minimum allowable bending radii -- 12 times the diameter for tape shielded cables.
 7. Inspect for proper fireproofing in common cable areas.
 8. There shall be NO tests performed on existing cable without specific direction from the Engineer.

B. Electrical Tests -- Below 600 Volts:

1. Visually inspect cables, lugs, connectors and all other components for physical damage and proper connections
2. Check all cable connectors for tightness (with a torque wrench) and clearances. Torque test conductor and bus terminations to manufacturer's recommendations.
3. Check for proper grounding resistance at all services and at transformers. Resistance shall be 5 ohms maximum.

3.5 LIGHT FIXTURES

- A. Check the bonding and proper lumen output and orientation where applicable. Verify that recessed fixtures are installed with hold down clips where required. Confirm operation of the fixture with the proper switch or sensor.

END OF SECTION 26 05 04

SECTION 26 05 19

LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLE

PART 1 - GENERAL

1.1 SCOPE

- A. Perform all Work required for furnishing and installing required wiring and cabling systems including pulling, terminating and splicing.

1.2 REFERENCES

- A. Applicable provisions of Division 1 govern work under this Section
- B. Section 260533 Raceway and Boxes
- C. Section 260553 Identification

1.3 PROJECT CONDITIONS

- A. Verify that field measurements are as shown on Drawings.
- B. Conductor sizes are based on copper.
- C. Wire and cable routing shown on Drawings is approximate unless dimensioned. Route wire and cable as required to meet project conditions.
- D. Where wire and cable routing is not shown, and destination only is indicated, determine exact routing and lengths required.

PART 2 - PRODUCTS

2.1 GENERAL

- A. All wire shall be new, delivered to the site in unbroken cartons and shall be less than one year old out of manufacturer's stock.
- B. All conductors shall be copper.
- C. Aluminum conductors size #1/0 and larger may be substituted for copper. Aluminum conductors may be substituted for copper feeders in sizes 50 amps and larger. The following requirements shall be met when aluminum conductors are used:
 - 1. Aluminum alloy conductors shall be compact stranded conductors of a recognized Aluminum Association 8000 Series aluminum alloy conductor material (AA-8000 series alloy).
 - 2. Aluminum alloy conductors must meet or exceed all ASTM specifications, UL Standard 83 and UL Standard 1063 and all requirements as specified in National Electrical Code Article 310.

3. It is the responsibility of the contractor to increase the size of the conduit, wire gutter, or enclosure, if necessary, to accommodate the aluminum conductors and meet allowable code requirements.
 4. It is the responsibility of the contractor to increase the size of the aluminum conductor to match the ampacity of the copper conductor circuit shown on the Drawings.
 5. All aluminum conductors shall terminate on a mechanical screw-type connector or mechanical compression-type connector. Connector shall be dual rated (ALCU, AL7CU or AL9CU) and Listed by UL for use with aluminum and copper conductors, and sized to accept aluminum conductors of the required ampacity.
 6. When using compression-type connectors, the lugs shall be marked with wire size, die index, number and location of crimps and shall be suitably color-coded.
 7. Using a suitable stripping tool, remove insulation from the required length of the conductor. Use caution to avoid damage to any of the individual strands.
 8. Wire brush the conductor to remove any insulation that may have become trapped between the strands and apply a Listed joint compound.
 9. Tighten or crimp the connection per the connector manufacturer's recommendation.
 10. Wipe off any excess joint compound.
 11. When terminating aluminum conductors to aluminum bus, prepare a mechanical screw-type or compression-type connection. Bolts shall be anodized alloy and conform to current ANSI and ASTM chemical and mechanical property limits. Nuts shall be aluminum alloy and conform to current ANSI standards. Washers shall be flat aluminum alloy, Type A plain, standard wide series conforming to current ANSI standards. Lubricate and tighten the hardware per manufacturer's recommendations.
 12. When terminating aluminum conductors to copper bus, prepare a mechanical screw-type or compression-type connection. Bolts shall be plated or galvanized medium carbon steel; heat treated, quenched and tempered equal to current ASTM standard or SAE grade 5. Nuts shall conform to current ANSI standards. Washers shall be steel, Type A plain, standard wide series conforming to current ANSI standards. Belleville conical spring washers shall be of hardened steel, cadmium plated or silicone bronze. Lubricate and tighten the hardware per manufacturer's recommendations.
 13. The contractor shall perform an infrared survey of all aluminum conductor connections after the installation is complete and in normal service. Infrared surveys shall be performed during periods of maximum possible loading with at least 30% of rated load of the equipment being inspected. All connections with elevated temperatures shall be corrected by the contractor. The infrared survey results shall be provided in report form, in the completed O&M manuals.
 14. No copper-to-aluminum transitions permitted when splicing onto existing copper feeders.
- D. Insulation shall have a 600 volt rating.
- E. All conductors shall be stranded.
- F. Stranded conductors may only be terminated with UL OR ETL Listed type terminations or methods: e.g. stranded conductors may not be wrapped around a terminal screw but must be terminated with a crimp type device or must be terminated in an approved back wired method.

2.2 BUILDING WIRE

- A. Acceptable Manufacturers: American Insulated Wire Corp., BICC General Cable Industries Inc., Cerro Wire & Cable Co. Inc., Pirelli Cable Corp., Rome Cable Corp., or Southwire Co.
- B. Single Conductor Insulated Wire.
 - 1. THHN, THW, THW-2, THWN, THWN-2, XHH, XHHW, or XHHW-2: Wiring in dry or damp locations (except where special type insulation is required).
 - 2. THWN, THWN-2, XHHW, XHHW-2: Wiring in wet locations
 - 3. THHN, THWN or THWN-2: Wiring installed in existing raceway systems (except where special type insulation is required).
 - 4. THHN, THW-2, THWN-2, XHHW, or XHHW-2: Wiring for electric discharge lighting circuits (fluorescent, HID), except where fixture listing requires wiring rated higher than 90° C.

2.3 WIRING CONNECTORS

- A. Split Bolt Connectors: Not acceptable unless noted otherwise.
- B. Solderless Pressure Connectors: High copper alloy terminal. May be used only for cable termination to equipment pads or terminals. Not approved for splicing.
- C. Spring Wire Connectors: Solderless spring type pressure connector with insulating covers for copper wire splices and taps. Use for conductor sizes 10 AWG and smaller.
- D. All wire connectors used in underground or exterior pull boxes shall be gel filled twist connectors or a connector designed for damp and wet locations.
- E. Mechanical Connectors:
 - 1. Bolted type tin-plated; high conductivity copper alloy; spacer between conductors; beveled cable entrances.
- F. Insulated Connector Blocks:
 - 1. Conductor count, size, and entry configuration to match application.
 - 2. UV rated.
 - 3. Dual rated for use with copper or aluminum conductors.
 - 4. 600 volt, 90° C termination rating.
 - 5. Caps for sealing wrench access port.
- G. Compression (crimp) Connectors:
 - 1. Long barrel; seamless, tin-plated electrolytic copper tubing; internally beveled barrel ends. Connector shall be clearly marked with the wire size and type and proper number and location of crimps.

2.4 WIRE MANAGEMENT

- A. Cable Clamps and Clips, Cable Ties, Spiral Wraps, etc: Catamount/T&B Corp., or Ideal Industries Inc.

PART 3 - EXECUTION

3.1 GENERAL WIRING METHODS

- A. Install electrical cable, wire and connectors as indicated, in accordance with the manufacturer's written instructions, the applicable requirements of NEC, and as required to ensure that products serve the intended functions.
- B. Cables shall be selected on the basis of their purpose and UL listing.
 - 1. Generally, use Types THWN, XHHW and THHN in building interiors and other dry locations.
 - 2. Outdoors and in underground raceways, use Type THWN or other conductor type rated for wet location as required by NEC 300.5(B).
 - 3. Conductors subject to abrasion, such as in lighting poles, shall be Type THWN or THHN.
- C. All wire and cable shall be installed in conduit.
- D. Do not use wire smaller than 12 AWG for power and lighting circuits. Minimum size for control circuits shall be 14 AWG copper stranded.
- E. All conductors shall be sized to prevent excessive voltage drop at rated circuit ampacity.
- F. As a minimum use 10 AWG conductor for 20 ampere, 120 volt branch circuit home runs longer than 100 feet, and for 20 ampere, 277 volt branch circuit home runs longer than 200 feet.
- G. Make conductor lengths for parallel conductors equal.
- H. Splice only in junction or outlet boxes.
- I. No conductor less than 10 AWG shall be installed in exterior underground conduit.
- J. Neatly train and lace wiring inside boxes, equipment, and panelboards.

3.2 WIRING INSTALLATION IN RACEWAYS

- A. Pull all conductors into a raceway at the same time. Use Listed wire pulling lubricant for pulling 4 AWG and larger wires and for other conditions when necessary.
- B. Install wire in raceway after interior of building has been physically protected from the weather and all mechanical work likely to injure conductors has been completed.
- C. Completely and thoroughly swab raceway system before installing conductors.

- D. Place all conductors of a given circuit (this includes phase wires, neutral (if any), and ground conductor) in the same raceway. If parallel phase and/or neutral wires are used, then place an equal number of phase and neutral conductors in same raceway or cable.

3.3 WIRING CONNECTIONS AND TERMINATIONS

- A. Splice only in accessible junction boxes.
- B. Wire splices and taps shall be made firm, and adequate to carry the full current rating of the respective wire without soldering and without perceptible temperature rise.
- C. All splices shall be so made that they have an electrical resistance not in excess of two feet (600 mm) of the conductor.
- D. Use solderless spring type pressure connectors with insulating covers for wire splices and taps, 10 AWG and smaller.
- E. Use mechanical or compression connectors for wire splices and taps, 8 AWG and larger. Tape uninsulated conductors and connectors with electrical tape to 150 percent of the insulation value of conductor.
- F. Thoroughly clean wires before installing lugs and connectors.
- G. At all splices and terminations, leave tails long enough to cut splice out and completely re-splice.
- H. Protect wiring in device and junction boxes from paint overspray. Wiring covered with paint shall be removed and replaced where needed by the Contractor.

3.4 FIELD QUALITY CONTROL

- A. Field inspection and testing will be performed under provisions of Section 260504 Cleaning and Testing.

3.5 WIRE COLOR

- A. For wire sizes 10 AWG and smaller - Wire shall be colored as indicated below.
- B. For wire sizes 8 AWG and larger – Use colored wire, or identify wire with colored $\frac{1}{2}$ " or $\frac{3}{4}$ " tape bands at all terminals, splices and boxes. Tape bands shall be installed at every 12" for the entire visible length. Colors to be as indicated below.
- C. In existing facilities, use existing color scheme if it complies with NFPA 70.
- D. In new facilities, use the following color scheme:
 - 1. Black and red for single phase circuits at 120/240 volts
 - 2. Phase A black, Phase B red and Phase C blue for circuits at 120/208 volts single or three phase.
 - 3. Phase A brown, Phase B orange and Phase C yellow for circuits at 277/480 volts single or three phase.

4. Neutral Conductors: White for 120/208V and 120/240V systems, Gray for 277/480V systems. Where there are two or more neutrals in one conduit, each shall be individually identified with a different stripe.
 5. Note: This includes fixture whips except for Listed whips mounted by the fixture manufacturer on the fixture and Listed as a System.
- E. All switch legs shall be the same color as their associated circuit. Traveler conductors run between 3 and 4 way switches shall be colored pink or purple.
 - F. Ground Conductors: Green for 2 AWG and smaller. For 1 AWG and larger, identify with green colored wire, or with green tape at both ends and at all access points, such as panelboards, motor starters, disconnects and junction boxes.
 - G. More Than One Nominal Voltage System Within A Building: Permanently post the color coding scheme at each branch-circuit panelboard.

3.6 IDENTIFICATION

- A. Identification Tags: Use tags to identify feeders and designated circuits. Install tags so that they are easily read without moving adjacent feeders or requiring removal of arc proofing tapes. Attach tags with non-ferrous wire or brass chain.
 1. Street and Grounds Lighting Circuits: Identify each circuit in manholes and lighting standard bases. Identify by circuit number and size, and also indicate building number and panel designation from which circuit originates.
- B. Identification Plaque: Where a building or structure is supplied by more than one service, or has any combination of feeders, branch circuits, or services passing through it, install a permanent plaque or directory at each service, feeder and branch circuit disconnect location denoting all other services, feeders, or branch circuits supplying that building or structure or passing through that building or structure and the area served by each. Minimum engraved plaque size of 8"x6".

3.7 WIRE MANAGEMENT

- A. Use wire management products to bundle, route, and support wiring in junction boxes, pullboxes, wireways, gutters, channels, and other locations where wiring is accessible.

3.8 BRANCH CIRCUITS

- A. The use of single-phase, multi-wire branch circuits with a common neutral is not permitted. All branch circuits shall be furnished and installed with an individual accompanying neutral, sized the same as the phase conductors.
- B. The use of a common neutral for modular furniture will be allowed with the following conditions:
 1. (Three) 3-phase circuit breaker is used.
 2. Neutral is sized 200% larger than phase conductor.

END OF SECTION 26 05 19

SECTION 26 05 26

GROUNDING

PART 1 - GENERAL

1.1 SCOPE

- A. Perform all Work required to provide and install the following grounding indicated by the Contract Documents with supplementary items necessary for proper installation.
- B. Equipment included in this Section
 - 1. Grounding electrodes and conductors
 - 2. Equipment grounding conductors
 - 3. Bonding.

1.2 REFERENCES

- A. The latest published edition of a reference shall be applicable to this Project unless identified by a specific edition date.
- B. All reference amendments adopted prior to the effective date of this Contract shall be applicable to this Project.
- C. All design, materials, installation and testing pertaining to grounding and bonding system shall comply with the latest edition of applicable requirements and standards addressed within the following references:
 - 1. Applicable provisions of Division 1 govern work under this Section
 - 2. Section 260519 – Low Voltage Electrical Power Conductors and Cable
 - 3. NFPA 70 - National Electrical Code.
 - 4. ANSI/IEEE 142 (Latest edition) - Recommended Practice for Grounding of Industrial and Commercial Power Systems.
 - 5. IEEE 81 - Guide for Measuring Earth Resistivity, Ground Impedance and Earth Surface Potentials of a Ground System.
 - 6. IEEE 1100 - Recommended Practice for Powering and Grounding Electronic Equipment (IEEE Emerald Book).
 - 7. IEEE C2 - National Electrical Safety Code (NESC).
 - 8. UL 467 – Grounding and Bonding Equipment.

1.3 QUALITY ASSURANCE

- A. See Part 3 of this Specification for system requirements and performance requirements.

1.4 SUMMARY

- A. Bond together system service equipment enclosures, exposed non-current carrying metal parts of electrical equipment, metal raceway systems, metal cable trays, auxiliary gutters, meter fittings, boxes, cable armor, cable sheath, ground bus in electrical rooms, metal frame of the building or structure, ground ring, lightning down lead conductor, grounding conductor in raceways and cables, receptacle ground connectors, and metallic plumbing systems.

1.5 CERTIFICATIONS

- A. Two (2) weeks prior to final inspection, submit four (4) copies of the following to the Engineer and General Contractor/Construction Manager:
 - 1. Certification that the materials and installation is in accordance with the drawings and specifications.
 - 2. Certification, by the Contractor, that the complete installation has been properly installed and tested.

PART 2 - PRODUCTS

2.1 GENERAL

- A. All materials shall meet or exceed all applicable referenced standards, federal, state and local requirements, and conform to codes and ordinances of authorities having jurisdiction.
- B. Grounding system components shall be as required to comply with the design and construction of the system indicated. Components shall be as indicated in manufacturer's submittal data.

2.2 ROD ELECTRODE

- A. Material: Copper-clad steel.
- B. Diameter: 3/4 inch minimum.
- C. Length: Ten (10) feet minimum.

2.3 GROUND CONDUCTORS

- A. Material:
 - 1. Provide 600-volt insulated copper (aluminum not permitted) conductors having a green-colored insulation for grounding electrode and equipment grounding conductors. Use stranded conductors.

2. Conduit grounding conductors shall be insulated copper conductor, green in color to size 2 AWG. Insulated conductors larger than 2 AWG shall be same as phase conductors but identified with green or green/yellow tape at each accessible opening or location in raceway.
 3. Provide bare conductors for bonding jumpers.
 4. Provide tinned copper conductors for exterior installations.
 5. Communications cable tray grounding conductors shall be a minimum of 6 AWG bare copper conductor.
- B. Grounding Electrode Conductor: Size as shown on drawings, specifications or as required by NFPA 70, whichever is larger.
- C. Foundation Electrodes: As shown on drawings or details.
- D. Feeder and Branch Circuit Equipment Ground: Size as shown on drawings, specifications or as required by NFPA 70, whichever is larger. Differentiate between the normal ground and the isolated ground when both are used on the same facility.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that final backfill and compaction has been completed before driving rod electrodes.

3.2 GENERAL

- A. Install Products in accordance with manufacturer's instructions.
- B. Install grounding conductors continuous, without splice or connection, between equipment and grounding electrodes.
- C. Size: When grounding and bonding conductors are not sized on Drawings, size the grounding conductors in accordance with NEC. Size bonding jumper so that minimum cross-sectional area is greater than or equal to that of the equivalent grounding conductor as determined from NEC.
- D. Mechanical connections shall be accessible for inspection and checking. No insulation shall be installed over mechanical ground connections.
- E. Ground connection surfaces shall be cleaned and all buried or inaccessible connections shall be made so that it is impossible to move them.
- F. Attach grounds permanently before permanent building service is energized.
- G. All grounding electrode conductors shall be installed in PVC conduit, in exposed locations.

3.3 LESS THAN 600 VOLT SYSTEM GROUNDING

A. System Grounding:

1. Main Bonding Jumper: Bond the secondary service neutral to the ground bus in the service equipment.
2. Separately derived systems (transformers downstream from the service entrance): Ground the secondary neutral.

B. Metallic Piping, Building Steel, and Supplemental Electrode(s)

1. Provide a grounding electrode conductor sized per NEC between the service equipment ground bus and all metallic water and gas pipe systems, building steel, and supplemental or made electrodes. Jumper insulating joints in the metallic piping. All connections to electrodes shall be made with fittings that conform to UL 467.

C. Equipment Grounding: Metallic structures (including ductwork and building steel), enclosures, raceways, junction boxes, outlet boxes, cabinets, machine frames, and other conductive items in close proximity with electrical circuits shall be bonded and grounded.

D. Conduit System:

1. Ground all metallic conduit systems. All metallic conduit systems shall contain an equipment grounding conductor.
2. Non-metallic conduit systems shall contain an equipment grounding conductor, except that non-metallic feeder conduits which carry a grounded conductor from exterior transformers to interior or building-mounted service entrance equipment need not contain an equipment grounding conductor.
3. Install an insulated grounding conductor internally to all flexible metal conduits. All flexible metal conduit containing power circuits shall utilize grounding bushings. The grounding bushing shall contain a bonding jumper and shall be terminated at the equipment ground bus. The grounding conductor shall terminate at the equipment ground bus. Install external ground wire on liquid tight flexible metal conduit. Provide suitable grounding bushing at each end of liquid tight flexible metal conduit at transformers. External ground wire shall be in addition to grounding conductors installed internal to raceway system.
4. Conduit containing only a grounding conductor, and which is provided for mechanical protection of the conductor, shall be bonded to that conductor at the entrance and exit from the conduit.

E. Feeders and Branch Circuits: Install equipment grounding conductors with all feeders and power and lighting branch circuits.

F. Boxes, Cabinets, Enclosures, and Panelboards:

1. Bond the equipment grounding conductor to each pullbox, junction box, outlet box, device box, cabinets, and other enclosures through which the conductor passes.
2. Provide lugs in each box and enclosure for equipment grounding conductor termination.
3. Provide ground bars in panelboards, bolted to the housing, with sufficient lugs to terminate the equipment grounding conductors.

- G. Receptacles shall not be grounded through their mounting screws. Ground with a jumper from the receptacle green ground terminal to the device box ground screw and the branch circuit equipment grounding conductor.
- H. Ground lighting fixtures to the equipment grounding conductor of the wiring system when the green ground is provided; otherwise, ground the fixtures through the conduit systems. Fixtures connected with flexible conduit shall have a green ground wire included with the power wires from the fixture through the flexible conduit to the first outlet box.
- I. Fixed electrical appliances and equipment shall be provided with a ground lug for termination of the equipment grounding conductor.

3.4 CORROSION INHIBITORS

- A. When making ground and ground bonding connections, apply a corrosion inhibitor to all contact surfaces. Use corrosion inhibitor appropriate for protecting a connection between the metals used.

3.5 GROUND ROD INSTALLATION

- A. Drive each rod vertically in the earth, not less than 10 feet in depth.
- B. Where permanently concealed ground connections are required, make the connections by the exothermic process to form solid metal joints. Make accessible ground connections with mechanical pressure type ground connectors.
- C. Where rock prevents the driving of vertical ground rods, install angled ground rods or grounding electrodes in horizontal trenches to achieve the specified resistance.

3.6 GROUND RESISTANCE

- A. Grounding system resistance to ground shall not exceed 5 ohms. Make necessary modifications or additions to the grounding electrode system for compliance without additional cost to the Owner. Final tests shall assure that this requirement is met.
- B. Resistance of the grounding electrode system shall be measured using a four-terminal fall-of-potential method as defined in IEEE 81. Ground resistance measurements shall be made before the electrical distribution system is energized and shall be made in normally dry conditions not less than 48 hours after the last rainfall. Resistance measurements of separate grounding electrode systems shall be made before the systems are bonded together below grade. The combined resistance of separate systems may be used to meet the required resistance, but the specified number of electrodes must still be provided.
- C. Services at power company interface points shall comply with the power company ground resistance requirements.
- D. Engineer has the option to observe below-grade connections prior to backfilling. The Contractor shall notify the Engineer 24 hours before the connections are ready for observation.

3.7 FIELD QUALITY CONTROL

- A. Inspect grounding and bonding system conductors and connections for tightness and proper installation.

END SECTION 26 05 26

SECTION 26 05 33

RACEWAYS AND BOXES

PART 1 - GENERAL

1.1 SCOPE

- A. Perform all Work required to provide and install the following conduits, surface raceways, multi-outlet assemblies, auxiliary gutters, wall duct, and boxes for electrical systems including wall and ceiling outlet boxes, floor boxes, and junction boxes.

1.2 REFERENCES

- A. Applicable provisions of Division 1 govern work under this section.
 - 1. Section 260529 – Hangers and Supports.
 - 2. Section 262726 – Wiring Devices.
 - 3. Section 262702 – Equipment Wiring.

PART 2 - PRODUCTS

2.1 RIGID METAL CONDUIT AND FITTINGS

- A. Conduit: Heavy wall, galvanized steel, schedule 40, threaded.
- B. Fittings and Conduit Bodies: Use all steel threaded fittings and conduit bodies.

2.2 PVC COATED RIGID METAL CONDUIT

- A. PVC Externally Coated Conduit: Rigid heavy wall, schedule 40, steel conduit with external 40 mil PVC coating. Conduit must be hot dipped galvanized inside and out including threads. The PVC coating bond to the galvanized steel conduit shall be stronger than the tensile strength of the coating itself.
- B. Fittings and Conduit Bodies: Threaded type, material to match conduit. PVC coated fittings and couplings shall have specially formed sleeves to tightly seal to conduit PVC coating. The sleeves shall extend beyond the fitting or coupling a distance equal to the pipe outside steel diameter or two inches whichever is greater.

2.3 ELECTRICAL METALLIC TUBING (EMT) AND FITTINGS

- A. Conduit: Steel, galvanized tubing.
- B. Fittings:
 - 1. All steel, set screw, concrete tight. No push-on or indenter types permitted.

2. Raintight Fittings:

- a. All steel construction with zinc electroplate finish provides for durable corrosion resistance
- b. Distinct color to provide quick raintight identification
- c. Integral gasketed compression ring secures and seals for reliable installation
- d. Gasket on male threads of box connector seals installation for raintight connection between the box and the connector

C. Conduit Bodies: All steel threaded conduit bodies.

2.4 LIQUIDTIGHT FLEXIBLE METAL CONDUIT AND FITTINGS

- A. Conduit: flexible, steel, galvanized, spiral strip with an outer Liquidtight, nonmetallic, sunlight-resistant jacket.
- B. Fittings and Conduit Bodies: ANSI/NEMA FB 1, compression type. There shall be a metallic cover/insert on the end of the conduit inside the connector housing to seal the cut conduit end.

2.5 RIGID NONMETALLIC CONDUIT AND FITTINGS

- A. Conduit: Schedule 40 PVC minimum, Listed, sunlight resistant, rated for 90° C conductors.
- B. Fittings and Conduit Bodies: NEMA TC 2, Listed.

2.6 HIGH DENSITY POLYETHYLENE

- A. Minimum Size: Two (2) inch, unless noted otherwise
- B. Acceptable Manufacturers
 - 1. Carlon
 - 2. Chevron Phillips Chemical Company
 - 3. Approved equal
- C. Materials used for the manufacture of polyethylene pipe and fittings shall be extra high molecular weight, high-density polyethylene resin. The material shall be listed by PPI (Plastic Pipe Institute).
- D. The pipe shall contain no recycled compound except that generated in the manufacturer's own plant from resin of the same raw material, including both the base resin and coextruded resin. The pipe shall be homogeneous throughout and free of visible cracks, holes, voids, foreign inclusions, or other defects that may affect the wall integrity.

2.7 HDPE FITTINGS AND CONDUIT BODIES:

- A. Directional Bore and Plow Type Installation: Electrofusion or Universal Aluminum threaded couplings. Tensile strength of coupled pipe must be greater than 2,000 lbs.

- B. For all other type of installation: Coupler must provide a water tight connection. The tensile strength of coupled pipe must be greater than 1,000 lbs.
- C. E-loc type couplings are not acceptable in any situations.

2.8 CONDUIT SUPPORTS

- A. See Section 260529.

2.9 OUTLET BOXES

- A. Sheet Metal Outlet Boxes: galvanized steel, with stamped knockouts.
- B. Luminaire and Equipment Supporting Boxes: Rated for weight of equipment supported; include 3/8 inch male fixture studs where required.
- C. Cast Boxes: Cast ferroalloy, or aluminum type deep type, gasketed cover, threaded hubs.

2.10 PULL AND JUNCTION BOXES

- A. Pull boxes and junction boxes shall be minimum 4 inch square by 2 1/8th inches deep for use with 1 inch conduit and smaller. On conduit systems using 1 1/4 inch conduit or larger, pull and junction boxes shall be sized per NEC but not less than 4 11/16 inch square.
- B. Sheet Metal Boxes: code gauge galvanized steel, screw covers, flanged and spot welded joints and corners.
- C. Sheet metal boxes larger than twenty-four (24) inches in any dimension shall have a hinged cover or a chain installed between box and cover.
- D. Cast Metal Boxes for Outdoor and Wet Location Installations: Type 4 and Type 6, flat-flanged, surface-mounted junction box, UL listed as raintight. Galvanized cast iron or aluminum box and cover with ground flange, neoprene gasket, and stainless steel cover screws.
- E. Fiberglass or Concrete Handholes:
 - 1. With weatherproof cover of non-skid finish shall be used for underground installations.
 - 2. Size, type, weight rating, and labeling shall be as noted on the drawings.
- F. The use of box extension rings is discouraged. If they must be used only one ring per box is allowed and wiring must extend a minimum of 6" beyond the front edge of the extension ring.
- G. Box extensions and adjacent boxes within 48" of each other are not allowed for the purpose of creating more wire capacity.
- H. Junction boxes 6" x 6" or larger size shall be without stamped knock-outs.
- I. Wireways shall not be used in lieu of junction boxes.

2.11 GENERAL

- A. All steel fittings and conduit bodies shall be galvanized.
- B. No cast metal or split-gland type fittings permitted.
- C. Mogul-type condulets larger than two (2) inch not permitted except as approved or detailed.
- D. All conduit covers must be fastened to the conduit body with screws and be of the same manufacture.
- E. Wireways, gutters and c-condulets shall not be used in lieu of pull boxes and condulets.
- F. All boxes shall be of sufficient size to provide free space for all conductors enclosed in the box and shall comply with NEC requirements.

PART 3 - EXECUTION

3.1 CONDUIT SIZING, ARRANGEMENT, AND SUPPORT

- A. EMT is permitted to be used in sizes 4" and smaller for power and telecommunication systems. See CONDUIT INSTALLATION SCHEDULE below for other limitations for EMT and other types of conduit.
- B. Size power conductor raceways for conductor type installed. Conduit size shall be 1/2 inch minimum except all homerun conduits shall be 3/4", or as specified elsewhere. Caution: Per the NEC, the allowable conductor ampacity is reduced when more than three (3) current-carrying conductors are installed in a raceway. Contractor must take the NEC ampacity adjustment factors into account when sizing the raceway and wiring system.
- C. Size conduit for all other wiring, including but not limited to data, control, security, fire alarm, telecommunications, signal, video, etc. shall be sized per number of conductors pulled and their cross-section. 40% fill shall be maximum for all new conduit fills.
- D. Arrange conduit to maintain headroom and present a neat appearance.
- E. Route exposed conduit and conduit above accessible ceilings parallel and perpendicular to walls and adjacent piping.
- F. Maintain minimum six (6) inch clearance between conduit and piping. Maintain twelve (12) inch clearance between conduit and heat sources such as flues, steam pipes, and heating appliances.
- G. Arrange conduit supports to prevent distortion of alignment by wire pulling operations. Fasten conduit using galvanized pipe straps, conduit racks (lay-in adjustable hangers), clevis hangers, or bolted split stamped galvanized hangers.
- H. Group conduit in parallel runs where practical and use conduit rack (lay-in adjustable hangers) constructed of steel channel with conduit straps or clamps. Provide space for 25 percent additional conduit.
- I. Do not fasten conduit with wire or perforated pipe straps. Before conductors are pulled, remove all wire used for temporary conduit support during construction.

- J. Support and fasten metal conduit at a maximum of eight (8) feet on center.
- K. Supports shall be independent of the installations of other trades, e.g. ceiling support wires, HVAC pipes, other conduits, etc., unless so approved or detailed.
- L. In general, all conduits shall be concealed except where noted on the drawings or approved by the Architect/Engineer. Contractor shall verify with Architect/Engineer all surface conduit installations except in mechanical, electrical or utility rooms that are not occupied spaces.
- M. Changes in direction shall be made with symmetrical bends, cast steel boxes, stamped metal boxes or cast steel conduit bodies.
- N. For indoor conduits, no continuous conduit run shall exceed 100 feet without a junction box.
- O. All conduits installed in exposed areas shall be installed with a box offset before entering box.

3.2 CONDUIT INSTALLATION

- A. Ground and bond conduit under provisions of Section 260526.
- B. Cut conduit square; de-burr cut ends.
- C. Conduit shall not be fastened to the corrugated metal roof deck. Maintain a minimum six (6) inch separation from the roof deck to conduits.
- D. Bring conduit to the shoulder of fittings and couplings and fasten securely.
- E. Use conduit hubs for fastening conduit to cast boxes. Use sealing locknuts or conduit hubs for fastening conduit to sheet metal boxes in damp or wet locations.
- F. All conduit terminations (except for terminations into conduit bodies) shall use conduit hubs, or connectors with one (1) locknut, or shall use double locknuts (one (1) each side of box wall) and insulated bushing. Provide bushings for the ends of all conduit not terminated in box walls. Refer to Section 260526 – Grounding and Bonding for Electrical Systems for grounding bushing requirements.
- G. Install no more than the equivalent of four (4) 90 degree bends between boxes.
- H. Use hydraulic one (1)-shot conduit bender or factory elbows for bends in conduit larger than two (2) inch size unless sweep elbows are required.
- I. Conduit shall be bent according to manufacturers' recommendations. Torches or open flame shall not be used to aid in bend of PVC conduit.
- J. Use suitable conduit caps or other approved seals to protect installed conduit against entrance of dirt and moisture.
- K. Provide 1/8 inch nylon pull string in empty conduit, except sleeves and nipples.
- L. Install expansion-deflection joints where conduit crosses building expansion joints. Note: expansion-deflection joints are not required where conduit crosses building control joints if the control joint does not act as an expansion joint. Install expansion fitting in PVC conduit runs as recommended by the manufacturer.

- M. Avoid moisture traps where possible. Where moisture traps are unavoidable, provide junction boxes with drain fittings at conduit low points.
- N. Conduit is not permitted in any slab topping of two inches or less. Consult Structural Engineer for approval of conduit installed in topping slabs greater than two inches.
- O. Maximum Size Conduit in Slabs Above Grade: 3/4 inch. Do not route conduits to cross each other in slabs above grade.
- P. PVC conduit shall transition to galvanized rigid metal conduit before it enters a concrete pole base, foundation, wall (where exposed) or up through a concrete floor.
- Q. All conduit installed underground (exterior to building) shall be buried a minimum of 24" below finished grade, whether or not the conduit is concrete encased.
 - 1. All underground conduits shall be installed with "DANGER – BURIED ELECTRICAL CONDUIT" red flagging tape 6-inches above conduit. Tape shall be continuous along the conduit run.
 - 2. Tracer wire shall be installed on all exterior electrical utilities. Trace wire to be fourteen (14) gauge minimum solid copper with thermoplastic insulation recommended for direct burial. Wire connectors to be 3M DBR, or approved equal, and shall be watertight to provide electrical continuity. Install trace wire in the same trench with the conduit during installation and secure to conduit as required to ensure that the wire remains adjacent to the conduit. Trace wire access points shall in general be no more than 500' apart.
- R. PVC conduit shall be cleaned with solvent, and dried before application of glue. The temperature rating of glue/cement shall match weather condition. Apply full even coat of cement/glue to entire area that will be inserted into fitting. The entire installation shall meet manufacturers' recommendations.

3.3 CONDUIT INSTALLATION SCHEDULE

- A. Conduit other than that specified below for specific applications shall not be used.
- B. Conduit in patient care areas shall be metallic to maintain dual ground paths as required by the NEC.
- C. Underground Installations: Schedule 40 PVC conduit.
- D. Directional Boring: HDPE conduit.
- E. Under Slab on Grade Installations: Schedule 40 PVC conduit
- F. Exposed Outdoor Locations: Rigid steel conduit
- G. Within Concrete Slab: Schedule 40 PVC conduit.
- H. Wet Interior Locations: Rigid steel conduit.

3.4 COORDINATION OF BOX LOCATIONS

- A. Provide electrical boxes as shown on Drawings, and as required for splices, taps, wire pulling, equipment connections, and code compliance.

- B. Electrical box locations shown on Contract Drawings are approximate unless dimensioned. Verify location of floor boxes and outlets in offices and work areas prior to rough-in.
- C. No outlet, junction, or pull boxes shall be located where it will be obstructed by other equipment, piping, lockers, benches, counters, etc.
- D. Boxes shall not be fastened to the metal roof deck. Maintain a minimum six (6) inch separation from the roof deck to boxes.
- E. It shall be the Contractor's responsibility to study drawings pertaining to other trades, to discuss location of outlets with workmen installing other piping and equipment and to fit all electrical outlets to job conditions.
- F. In case of any question over the location of an outlet, the Contractor shall refer the matter to the Architect/Engineer and install outlet as instructed by the Architect/Engineer.
- G. The proper location of each outlet is considered a part of this contract and no additional compensation will be paid to the Contractor for moving outlets which were improperly located.
- H. Locate and install boxes to allow access to them. Where installation is inaccessible, coordinate locations and provide 18 inch by 24 inch access doors.
- I. Locate and install to maintain headroom and to present a neat appearance.

3.5 PULL AND JUNCTION BOX INSTALLATION

- A. Support pull and junction boxes independent of conduit.

END OF SECTION 26 05 33

SECTION 26 05 53

IDENTIFICATION

PART 1 - GENERAL

1.1 SCOPE

- A. Perform all Work required to provide and install the labeling of power, lighting, general wiring, signal, fire alarm, and cabling.

1.2 REFERENCES

- A. Applicable provisions of Division 1 shall govern work under this section.
- B. Section 260519 – Low Voltage Electrical Power Conductors and Cables

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Labels: All labels shall be permanent, and machine generated. NO HANDWRITTEN OR NON-PERMANENT LABELS ARE ALLOWED. Exception: Back side of device plates and junction boxes may use handwritten, legible labeling on box covers, unless specifically prohibited by other specification sections.
- B. Cable label size shall be appropriate for the conductor or cable size(s), outlet faceplate layout and patch panel design. All labels shall be self-laminating, white/transparent vinyl and be wrapped around the cable or sheath. Labels for power conductors (600V and lower) shall be cloth-type. Flag type labels are not allowed. The labels shall be of adequate size to accommodate the circumference of the cable being labeled and properly self-laminate over the full extent of the printed area of the label.
- C. Nameplates: Engraved three-layer laminated plastic, white letters on a black background. Emergency system (Level 1 and Level 2) shall use white letters on red background.
- D. Tape (phase identification only): Scotch #35 tape in appropriate colors for system voltage and phase.
- E. Adhesive type labels not permitted except for phase and wire identification. Machine generated adhesive labels shall be permitted for device plates, 4-11/16" and smaller junction boxes, fire alarm and control devices.

PART 3 - EXECUTION

3.1 GENERAL

- A. All branch circuit and power panels must be identified with the same symbol used in circuit directory in main distribution center.
- B. Clean all surfaces before attaching labels with the label manufacturer's recommended cleaning agent.

- C. Install all labels firmly as recommended by the label manufacturer.
- D. Labels shall be installed plumb and neatly on all equipment.
- E. Install nameplates parallel to equipment lines.
- F. Secure nameplates to equipment fronts using screws, rivets or manufacturer approved adhesive or cement.
- G. Embossed tape will not be permitted for any application.

3.2 POWER AND CONTROL WIRE IDENTIFICATION

- A. Provide wire markers on each conductor in panelboard gutters, pull boxes, outlet and junction boxes, and at load connection. Identify with branch circuit or feeder number for power and lighting circuits, and with control wire number as indicated on schematic and interconnection diagrams or equipment manufacturer's shop drawings for control wiring.
- B. All wiring shall be labeled within 2 to 4 inches of terminations. Each end of a wire or cable shall be labeled as soon as it is terminated including wiring used for temporary purposes.

3.3 WIRING DEVICE IDENTIFICATION

- A. Wall switches, line voltage wall dimmers, motor switches, receptacles (interior, exterior, floor boxes, etc.), photocells and time clocks shall be identified with circuit numbers and source. Labeling shall be permanent and machine generated. Label shall have 1/4" black text on a clear label. Label shall be installed at consistent location on the face of the device cover plate.

3.4 PANELBOARD DIRECTORIES

- A. Typed directories for panels must be covered with clear plastic, have a metal frame. Room number on directories shall be Owner's numbers, not Plan numbers unless Owner so specifies.

END OF SECTION 26 05 53

SECTION 26 27 02

EQUIPMENT WIRING

PART 1 - GENERAL

1.1 SCOPE

- A. Perform all Work required to provide and install the electrical connections indicated by the Contract Documents with supplementary items necessary for proper installation.

1.2 REFERENCES

- A. Applicable provisions of Division 1 govern work under this Section.
- B. Section 260533 Raceway and Boxes for Electrical Systems.
- C. Section 260519 Low-Voltage Electrical Power Conductors and Cables.

1.3 COORDINATION

- A. Coordinate all equipment requirements with the various contractors and the Owner. Review the complete set of drawings and specifications to determine the extent of wiring, starters, devices, etc., required.

PART 2 - PRODUCTS

2.1 CORDS AND CAPS

- A. Straight-blade Attachment Plug: NEMA WD 1.
- B. Locking-blade Attachment Plug: NEMA WD 5.
- C. Attachment Plug Configuration: Match receptacle configuration at outlet provided for equipment.
- D. Cord Construction: Oil-resistant thermoset insulated multiconductor flexible cord with identified equipment grounding conductor, suitable for hard usage in damp locations.
- E. Cord Size: Suitable for connected load of equipment and rating of branch circuit overcurrent protection.

2.2 OTHER PRODUCTS

- A. Refer to related sections for other product requirements.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Verify that equipment is ready for electrical connection, wiring, and energization.

3.2 PREPARATION

- A. Review equipment submittals prior to installation and electrical rough-in. Verify location, size, and type of connections. Coordinate details of equipment connections with supplier and installer.

3.3 INSTALLATION

- A. Use wire and cable with insulation suitable for temperatures encountered in heat-producing equipment.
- B. Make conduit connections to equipment using flexible PVC-coated metal conduit.
- C. Install pre-finished cord set where connection with attachment plug is indicated or specified, or use attachment plug with suitable strain-relief clamps.
- D. Provide suitable strain-relief clamps for cord connections to outlet boxes and equipment connection boxes.
- E. Make wiring connections in control panel or in wiring compartment of pre-wired equipment in accordance with manufacturer's instructions. Provide interconnecting wiring where indicated.
- F. Install disconnect switches, controllers, control stations, and control devices such as limit switches and temperature switches as indicated. Connect with conduit and wiring as indicated.

3.4 EQUIPMENT CONNECTION SCHEDULE

- A. As indicated on the drawings.

END OF SECTION 26 27 02

SECTION 26 27 26

WIRING DEVICES

PART 1 - GENERAL

1.1 SCOPE

- A. Perform all Work required to provide and install the following wiring devices indicated by the Contract Documents with supplementary items necessary for proper installation.
- B. Equipment included in this Section
 - 1. Wall switches
 - 2. Receptacles
 - 3. Device plates and box covers
 - 4. Photo cells
 - 5. Time clocks

1.2 REFERENCES

- A. Applicable provisions of Division 1 govern work under this Section.

1.3 SUBMITTALS

- A. Provide product data showing model numbers, configurations, finishes, dimensions, and manufacturer's instructions.

1.4 OPERATION AND MAINTENANCE DATA

- A. All operations and maintenance data shall comply with the submission and content requirements specified under section GENERAL REQUIREMENTS.

PART 2 - PRODUCTS

2.1 GENERAL

- A. All materials shall meet or exceed all applicable referenced standards, federal, state, and local requirements, and shall conform to codes and ordinances of authorities having jurisdiction.
- B. Provide factory fabricated wiring devices in the type and electrical rating for the service indicated. Where type and grade are not indicated provide proper selection to correspond with branch circuit wiring and overcurrent protection.

- C. Attachment of wires to devices shall be by screw pressure under the head of binding screws. Arrangements depending on spring pressure or tension are not acceptable. All binding screws shall be brass or bronze.
- D. See Drawings for Device Schedule.

2.2 DEVICE COLOR

- A. White, unless noted otherwise.

2.3 WALL SWITCHES

- A. Wall Switches for Lighting Circuits and Motor Loads Under 1/2 HP: Quiet-type single pole through four (4)-way.
- B. Heavy duty use toggle switch, nylon or high impact resistant face and body, rated 20 amperes and 120/277 volts AC.
- C. Switches shall be UL20 Listed and meet Federal Specification WS-896. All switches shall be heavy duty Specification Grade with separate green ground screw.
- D. All switches shall be back and side wired, screw clamp type, suitable for solid or stranded wire up to #10 AWG.

2.4 KEYED SWITCHES

- A. Keyed switches shall have the same requirements as wall switches except for a barrel key operator in lieu of a toggle switch.
- B. Provide one (1) key per switch to the Owner.

2.5 STRAIGHT-BLADE RECEPTACLES

- A. Nylon or high impact resistant face, NEMA configuration as scheduled on the Drawings.
- B. Receptacles shall be UL498 Listed and meet Federal Specification WC-596.
- C. All receptacles shall be back and side wired, screw clamp type, suitable for solid or stranded wire up to #10 AWG, with a separate green ground screw. Connector-type receptacles are also acceptable.

2.6 TWIST LOCK RECEPTACLES

- A. Nylon or high impact resistant face, NEMA configuration as scheduled on the Drawings.
- B. Receptacles shall be UL498 Listed and meet Federal Specification WC-596.
- C. All receptacles shall be back and side wired, screw clamp type, suitable for solid or stranded wire up to #10 AWG, with a separate green ground screw.

2.7 GROUND FAULT CIRCUIT INTERRUPTER (GFCI) RECEPTACLES

- A. Duplex convenience receptacle, Specification Grade, with integral ground fault current interrupter, auto monitoring (self-test), and line-load reversal function meeting the requirements of UL standard 943 Class A and UL standard 498.
- B. All receptacles installed in outdoor locations, in garages, within six (6) feet of the outside edge of sinks, and in other damp or wet locations shall be GFCI type.

2.8 TAMPER RESISTANT RECEPTACLES

- A. Tamper resistant receptacles shall be similar to standard receptacles except for the addition of a shutter system that blocks access to the phase and neutral plug slots while the device is not in use.

2.9 COMBINATION USB CHARGER RECEPTACLES

- A. Standard AC duplex tamper resistant receptacle with two (2) USB charging ports (Type-A and/or Type-C as noted in the schedule) rated at a minimum of 3.0 A at 5 VDC, UL Listed to UL 498 and UL 1310.
- B. Receptacle shall be UL 498 and UL 1310 Listed and meet Federal Specification WC596.
- C. USB ports shall work with USB 2.0, 3.0, and 3.1 compatible devices.
- D. Device shall have auto grounding feature.
- E. Receptacle shall be back and side wired, screw clamp type, suitable for solid or stranded wire up to #10 AWG, with a separate green ground screw.

2.10 SPECIFIC USE RECEPTACLE

- A. Configuration: As indicated on drawings.

2.11 PHOTO CELLS

- A. The controller shall be rated 2000 watts tungsten at 120, 240 or 277 volts. The cell shall be cadmium sulfide, 1" diameter.
- B. The enclosure shall be die cast zinc, gasketed for maximum weather proofing.
- C. The enclosure shall include the positioning lug on the top of the enclosure.
- D. The unit shall have a delay of up to two (2) minutes to prevent false switching. ON/Off adjustment shall be done by moving a light selector with a range from two (2) to fifty (50) foot-candles.
- E. Mounting shall be for a 1/2" conduit nipple.
- F. The unit shall have a five (5) year warranty.
- G. The contacts shall be SPST normally closed.
- H. The operational temperature range shall be -40 to 140° F.

2.12 TIME CLOCKS

- A. Unit shall be a multi-purpose, seven (7) day, 365 day advance single, and skip a day, combination two (2)-channel electronic time clock with a SPDT switching configuration and astronomic dial.
- B. The contacts shall be rated 30 amp resistive at 120/250 VAC, 7.5 amps inductive at 120/240 VAC, 5 amps inductive at 30 VDC and up to 1/2 hp at 250 VAC. The unit shall be rate for 30 VDC, 120 VAC, 250 VAC and 277 VAC.
- C. The controller shall be capable of programming in the AM/PM or 24 hour format by jumper selection, in one (1) minute resolution, using two (2) buttons only for all basic settings.
- D. Display shall be LED type.
- E. The unit shall have 365 day and or holiday selection capabilities, with sixteen (16) single date and five (5) holiday selection options and user selectable daylight savings/standard time functions.
- F. The unit shall have 72 hour memory backup with rechargeable battery and charger.
- G. The unit shall be capable of manual override, On and OFF to the next scheduled event, using one (1) button for each channel.
- H. The enclosure shall be rated for indoor or outdoor installation.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. All dimensions noted are centerline dimensions.
- B. Install wall switches 42 inches above floor, OFF position down.
- C. Install convenience receptacles 18 inches above floor, grounding pole on bottom. Mount horizontally where indicated.
- D. Install specific-use receptacles at heights shown on Contract Drawings.
- E. Install decorative plates on switch, receptacle, and blank outlets in finished areas.
- F. Install galvanized steel plates on outlet boxes and junction boxes in unfinished areas, above accessible ceilings, and on surface-mounted outlets.
- G. Install devices and wall plates flush and level.
- H. Receptacles shall have a bonding conductor from grounding terminal to the metal conduit system. Self-grounding receptacles using mounting screws as bonding means are not approved.

3.2 FIELD QUALITY CONTROL

- A. Inspect each wiring device for defects.

- B. Operate each wall switch with circuit energized and verify proper operation.
- C. Verify that each receptacle device is energized.
- D. Test each receptacle device for proper polarity.
- E. Test each GFCI receptacle device for proper operation.

3.3 ADJUSTING

- A. Adjust devices and wall plates to be flush and level.
- B. Mark all conductors with the panel and circuit number serving the device with a machine generated label, at the device, and on the back of the device cover.

END OF SECTION 26 27 26

SECTION 26 27 30

CONTACTORS

PART 1 - GENERAL

1.1 SCOPE

- A. Perform all Work required to provide and install general purpose contactors and lighting contactors indicated by the Contract Documents with supplementary items necessary for proper installation.

1.2 REFERENCES

- A. Applicable provisions of Division 1 govern work under this Section.
- B. ANSI/NEMA ICS 6 - Enclosures for Industrial Controls and Systems.
- C. NEMA ICS 2 - Industrial Control Devices, Controllers, and Assemblies.
- D. ANSI/NFPA 70 - National Electrical Code.

1.3 SUBMITTALS

- A. Product Data: Include dimensions, size, voltage ratings, current ratings, enclosure type and NEMA sizes.

1.4 PROJECT RECORD DOCUMENTS

- A. Accurately record actual locations of each contactor and indicate circuits controlled.

1.5 OPERATION AND MAINTENANCE DATA

- A. All operations and maintenance data shall comply with the submission and content requirements specified under section GENERAL REQUIREMENTS.

PART 2 - PRODUCTS

2.1 LIGHTING CONTACTORS

- A. Description: NEMA ICS 2, magnetic lighting contactor, 100% rated.
- B. Configuration: Mechanically held, 2 wire control.
- C. Coil Voltage: 120 volts.
- D. Poles: As scheduled.
- E. Contact Rating: As scheduled.

- F. Enclosure: ANSI/NEMA ICS 6, Type 3R
- G. Accessories:
 - 1. Pushbutton: ON/OFF
 - 2. Selector Switch: ON/OFF/AUTOMATIC ON/OFF
 - 3. Indicating Light: RED

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. The installation must be accessible. The preferred location shall be in electrical or the mechanical rooms or as shown on the drawings.

3.2 SCHEDULE

- A. See Drawings.

END OF SECTION 26 27 30

SECTION 26 56 29

SITE LIGHTING

PART 1 - GENERAL

1.1 SCOPE

- A. Perform all Work required to provide and install site lighting indicated by the Contract Documents with supplementary items necessary for proper installation.
- B. Equipment included in this Section
 - 1. Exterior luminaires and accessories
 - 2. Poles
 - 3. Foundations

1.2 REFERENCES

- A. Applicable provisions of Division 1 govern work under this Section.

1.3 SUBMITTALS

- A. Shop Drawings: Indicate dimensions and components for each luminaire, pole and base.
- B. Product Data: Provide dimensions, ratings, performance data, lamp and ballast data, weights and accessory information for each type.
- C. Manufacturer's Instructions:
 - 1. Indicate application conditions and limitations of use stipulated by product testing agency specified under "Regulatory Requirements".
 - 2. Include instructions for storage, handling, protection, examination, preparation, installation, and starting of product.

1.4 PROJECT RECORD DOCUMENTS

- A. Accurately record actual locations of each luminaire, pole and underground circuit.

1.5 OPERATION AND MAINTENANCE DATA

- A. All operations and maintenance data shall comply with the submission and content requirements specified under section GENERAL REQUIREMENTS.

1.6 COORDINATION

- A. Use bolt templates and pole mounting accessories to install anchor bolts in pole base.

1.7 WARRANTY

- A. All equipment shall be warranted to be free of defects in materials and workmanship by the manufacturer for the time period listed below from the date of project substantial completion:
 - 1. LED luminaires (including LED power supply): Five (5) years
 - 2. Pole (including pole finish): Five (5) years

PART 2 - PRODUCTS

2.1 LUMINAIRES

- A. Furnish products as specified in schedule on Drawings.

2.2 POLES

- A. Furnish products as specified in schedule on Drawings.
- B. Handhole: With removable weatherproof cover.
- C. Anchor Bolts: As recommended by pole manufacturer. Provide template, flat washers, lock washers, and hex nuts for each pole.

2.3 POLE FOUNDATIONS

- A. Construct from reinforced concrete in sizes as shown on drawings and to meet the minimum structural requirements of the site soil conditions.
- B. Provide 3/4" X 10'0" ground rod in the pole foundation so that the ground rod projects 3" up into center of pole base.
- C. The exposed surface area of the foundation shall have the forms removed and the concrete rubbed out to a smooth finish.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install in accordance with manufacturers' instructions.
- B. Minimum underground conduit size is 1 inch.
- C. Underground and exterior wire shall be type XHHW-2.

- D. Project anchor bolts 2 inches minimum above base.
- E. Install all anchor bolts and handhole fasteners with anti-seize compound.
- F. Install poles plumb. Provide shims or double nuts to adjust plumb.
- G. Use belt slings or non-chafing ropes to raise and set pre-finished luminaire poles.
- H. Bond each luminaire, each metal accessory, the ground rod and the pole to the branch circuit equipment ground conductor with a separate ground wire sized per NEC or as shown on the drawings.

3.2 FIELD QUALITY CONTROL

- A. Operate each luminaire after installation and connection. Inspect for improper connections and operation.

3.3 ADJUSTING

- A. Aim and adjust luminaires as indicated on Drawings or as directed by the A/E.
- B. All new lamps shall be operational at the Substantial Completion of the project.

3.4 CLEANING

- A. Clean photometric control surfaces.
- B. Clean finishes and touch up damage.

END OF SECTION 26 56 29



NOTE: EXISTING UTILITY INFORMATION SHOWN ON THIS PLAN HAS BEEN PROVIDED BY THE UTILITY OWNER. THE CONTRACTOR SHALL FIELD VERIFY EXACT LOCATIONS PRIOR TO COMMENCING CONSTRUCTION AS REQUIRED BY STATE LAW. NOTIFY IOWA ONE CALL 1-800-292-8989 OR 811

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D UNLESS OTHERWISE NOTED. THIS UTILITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."

RESOURCE LIST

CITY OF WINDSOR HEIGHTS

City Hall
1145 66th St, Suite 1
Windsor Heights, IA 50324
515-279-3662

City Administrator:
Adam Plagge

Mayor: Mike Jones

City Council Members:
Lauren Campbell
Threase Harms
Joseph Jones
Michael Libbie
Susan Skeries

City Engineer:
Justin Ernst

Public Works Director:
Jason Roberts

UTILITIES

TELEPHONE

LUMEN
Ashlie Clements
(906) 284-2821

CABLE / INTERNET
MEDIACOM
(877) 561-6847

WATER
DES MOINES WATER WORKS
(515) 283-8700

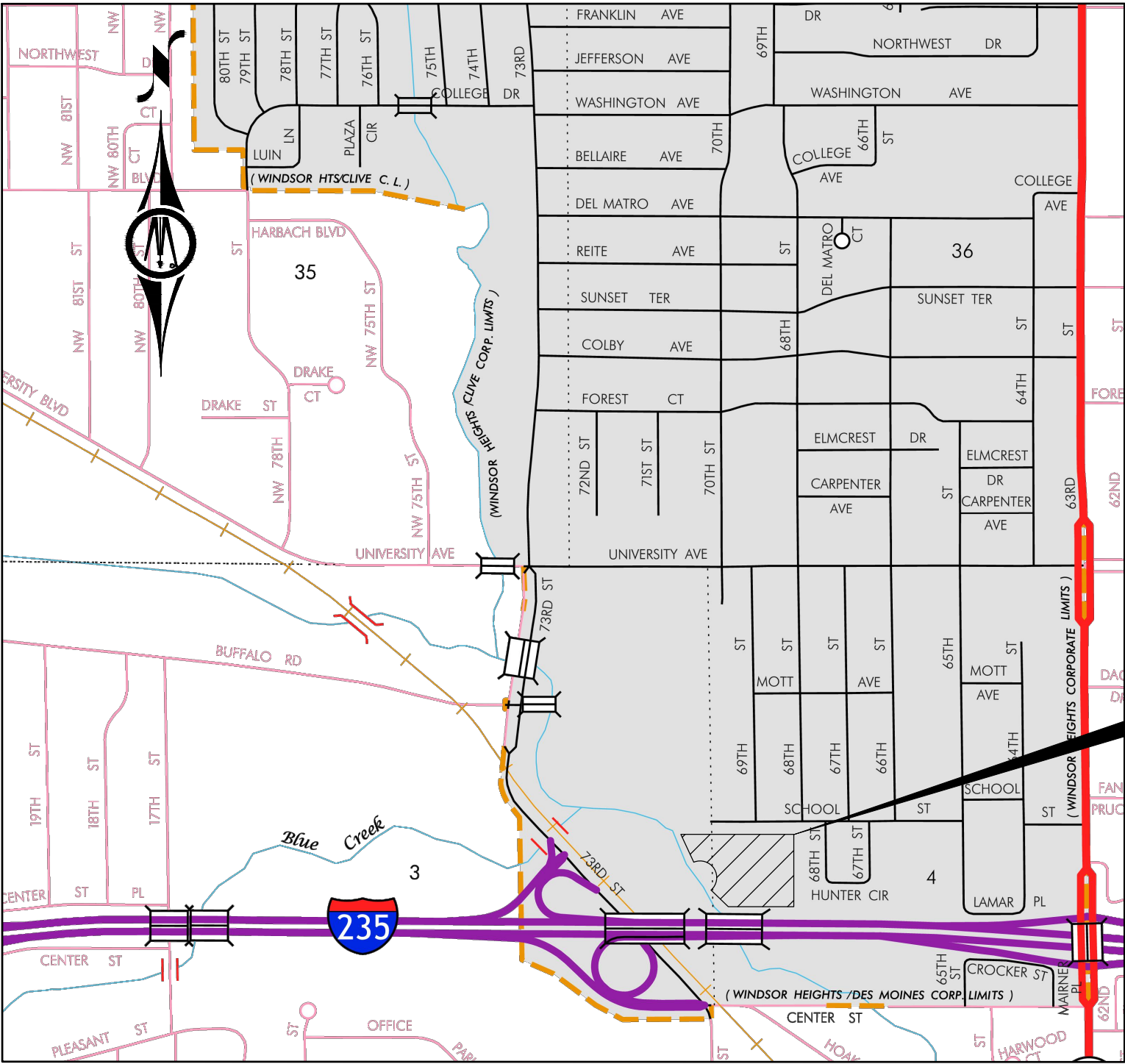
ELECTRIC
MIDAMERICAN ENERGY
(888) 427-5632

CITY OF WINDSOR HEIGHTS, IA

CONSTRUCTION PLANS FOR

2023 COLBY PARK IMPROVEMENTS

SEPTEMBER 19, 2023



EXISTING TOPOGRAPHIC SYMBOLS

	ACCESS GRATE		SATELLITE DISH
	AIR CONDITION UNIT		SIGN TRAFFIC
	ANTENNA		SIGNAL CONTROL CABINET
	AUTO SPRINKLER CONNECTION		SOIL BORING
	BARRICADE PERMANENT		SIREN
	BASKETBALL POST		TELEPHONE BOOTH
	BENCH		TILE INLET
	BIRD FEEDER		TILE OUTLET
	BOLLARD		TILE RISER
	BUSH		TRANSFORMER-ELECTRIC
	CATCH BASIN RECTANGULAR CASTING		TREE-CONIFEROUS
	CATCH BASIN CIRCULAR CASTING		TREE-DEAD
	CURB STOP		TREE-DECIDUOUS
	CLEAN OUT		TREE STUMP
	CULVERT END		TRAFFIC ARM BARRIER
	DRINKING FOUNTAIN		TRAFFIC SIGNAL
	DOWN SPOUT		TRASH CAN
	FILL PIPE		UTILITY MARKER
	FIRE HYDRANT		VALVE
	FLAG POLE		VALVE POST INDICATOR
	FLARED END / APRON		VALVE VAULT
	FUEL PUMP		VENT PIPE
	GRILL		WATER SPIGOT
	GUY WIRE ANCHOR		WELL
	HANDHOLE		WETLAND DELINEATED MARKER
	HANDICAP SPACE		WETLAND
	IRRIGATION SPRINKLER HEAD		WET WELL
	IRRIGATION VALVE BOX		YARD HYDRANT
	LIFT STATION CONTROL PANEL		
	LIFT STATION		
	LIGHT POLE		
	MAILBOX		
	MANHOLE-COMMUNICATION		
	MANHOLE-ELECTRIC		
	MANHOLE-GAS		
	MANHOLE-HEAT		
	MANHOLE-SANITARY SEWER		
	MANHOLE-STORM SEWER		
	MANHOLE-UTILITY		
	MANHOLE-WATER		
	METER		
	ORDER MICROPHONE		
	PARKING METER		
	PAVEMENT MARKING		
	PEDESTAL-COMMUNICATION		
	PEDESTAL-ELECTRIC		
	PEDESTRIAN PUSH BUTTON		
	PICNIC TABLE		
	POLE-UTILITY		
	POST		
	RAILROAD SIGNAL POLE		
	REGULATION STATION GAS		

PROPOSED TOPOGRAPHIC SYMBOLS

	CLEANOUT
	MANHOLE
	LIFT STATION
	STORM SEWER CIRCULAR CASTING
	STORM SEWER RECTANGULAR CASTING
	STORM SEWER FLARED END / APRON
	STORM SEWER OUTLET STRUCTURE
	STORM SEWER OVERFLOW STRUCTURE
	CURB BOX
	FIRE HYDRANT
	WATER VALVE
	WATER REDUCER
	WATER BEND
	WATER TEE
	WATER CROSS
	WATER SLEEVE
	WATER CAP / PLUG
	RIP RAP
	DRAINAGE FLOW
	TRAFFIC SIGNS
	LIGHT POLE

SURVEY SYMBOLS

	BENCH MARK LOCATION
	CONTROL POINT
	MONUMENT IRON FOUND
	CAST IRON MONUMENT

EXISTING TOPOGRAPHIC LINES

	RETAINING WALL
	FENCE
	FENCE-DECORATIVE
	GUARD RAIL
	TREE LINE
	BUSH LINE

SURVEY LINES

	CONTROLLED ACCESS BOUNDARY
	CENTERLINE
	EXISTING EASEMENT LINE
	PROPOSED EASEMENT LINE
	EXISTING LOT LINE
	PROPOSED LOT LINE
	EXISTING RIGHT-OF-WAY
	PROPOSED RIGHT-OF-WAY
	SETBACK LINE
	SECTION LINE
	QUARTER LINE
	SIXTEENTH LINE
	TEMPORARY EASEMENT

EXISTING UTILITY LINES

	FORCEMAIN
	SANITARY SEWER
	SANITARY SERVICE
	STORM SEWER
	STORM SEWER DRAIN TILE
	WATERMAIN
	WATER SERVICE

PROPOSED UTILITY LINES

	FORCEMAIN
	SANITARY SEWER
	SANITARY SERVICE
	STORM SEWER
	STORM SEWER DRAIN TILE
	WATERMAIN
	WATER SERVICE
	PIPE CASING

GRADING INFORMATION

	EXISTING CONTOUR MINOR
	EXISTING CONTOUR MAJOR
	PROPOSED CONTOUR MINOR
	PROPOSED CONTOUR MAJOR
	PROPOSED GRADING LIMITS / SLOPE LIMITS
	PROPOSED SPOT ELEVATION
	RISE:RUN (SLOPE)

EXISTING PRIVATE UTILITY LINES

NOTE:
EXISTING UTILITY INFORMATION SHOWN ON THIS PLAN HAS BEEN PROVIDED BY THE UTILITY OWNER. THE CONTRACTOR SHALL FIELD VERIFY EXACT LOCATIONS PRIOR TO COMMENCING CONSTRUCTION AS REQUIRED BY STATE LAW. NOTIFY IOWA ONE CALL - 1-800-292-8989

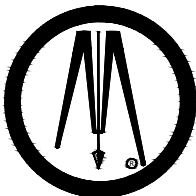
THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D UNLESS OTHERWISE NOTED. THIS UTILITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA"

	UNDERGROUND FIBER OPTIC
	UNDERGROUND ELECTRIC
	UNDERGROUND GAS
	UNDERGROUND COMMUNICATION
	OVERHEAD ELECTRIC
	OVERHEAD COMMUNICATION
	OVERHEAD UTILITY

ABBREVIATIONS

A	ALGEBRAIC DIFFERENCE	GV	GATE VALVE	RT	RIGHT
ADJ	ADJUST	HDPE	HIGH DENSITY POLYETHYLENE	SAN	SANITARY SEWER
ALT	ALTERNATE	HH	HANDHOLE	SCH	SCHEDULE
B-B	BACK TO BACK	HMA	HOT MIX ASPHALT	SERV	SERVICE
BLDG	BUILDING	HP	HIGH POINT	SHLD	SHOULDER
BMP	BEST MANAGEMENT PRACTICE	HWL	HIGH WATER LEVEL	STA	STATION
BR	BEGIN RADIUS	HYD	HYDRANT	STD	STANDARD
BV	BUTTERFLY VALVE	I	INVERT	STM	STORM SEWER
CB	CATCH BASIN	K	CURVE COEFFICIENT	TC	TOP OF CURB
C&G	CURB AND GUTTER	L	LENGTH	TE	TEMPORARY EASEMENT
CIP	CAST IRON PIPE	LO	LOWEST OPENING	TEMP	TEMPORARY
CIPP	CURED-IN-PLACE PIPE	LP	LOW POINT	TNH	TOP NUT HYDRANT
CL	CENTER LINE	LT	LEFT	TP	TOP OF PIPE
CL.	CLASS	MH	MANHOLE	TYP	TYPICAL
CMP	CORRUGATED METAL PIPE	MIN	MINIMUM	VCP	VITRIFIED CLAY PIPE
C.O.	CHANGE ORDER	MPW	MUSCATINE POWER & WATER	VERT	VERTICAL
COMM	COMMUNICATION	MR	MID RADIUS	VPC	VERTICAL POINT OF CURVE
CSP	CORRUGATED STEEL PIPE	NIC	NOT IN CONTRACT	VPI	VERTICAL POINT OF INTERSECTION
CLVT	CULVERT	NMC	NON-METALLIC CONDUIT	VPT	VERTICAL POINT OF TANGENT
DIA	DIAMETER	NTS	NOT TO SCALE	WM	WATERMAIN
DIP	DUCTILE IRON PIPE	NWL	NORMAL WATER LEVEL	WS	WATER SERVICE
DWY	DRIVEWAY	OHW	ORDINARY HIGH WATER LEVEL		
E	EXTERNAL CURVE DISTANCE	PC	POINT OF CURVE		
ESMT	EASEMENT	PCC	PORTLAND CEMENT CONCRETE	AC	ACRES
ELEC	ELECTRIC	PE	PERMANENT EASEMENT	CF	CUBIC FEET
ELEV/EL	ELEVATION	PED	PEDESTRIAN, PEDESTAL	CV	COMPACTED VOLUME
EOF	EMERGENCY OVERFLOW	PERF	PERFORATED PIPE	CY	CUBIC YARD
ER	END RADIUS	PERM	PERMANENT	EA	EACH
EX	EXISTING	PI	POINT OF INTERSECTION	EV	EXCAVATED VOLUME
FES	FLARED END SECTION	PL	PROPERTY LINE	LB	POUND
F-F	FACE TO FACE	PRC	POINT OF REVERSE CURVE	LF	LINEAR FEET
FF	FINISHED FLOOR	PT	POINT OF TANGENT	LS	LUMP SUM
F&I	FURNISH AND INSTALL	PVC	POLYVINYL CHLORIDE PIPE	LV	LOOSE VOLUME
FM	FORCEMAIN	PVMT	PAVEMENT	SF	SQUARE FEET
FO	FIBER OPTIC	R	RADIUS	SV	STOCKPILE VOLUME
F.O.	FIELD ORDER	RCP	REINFORCED CONCRETE PIPE	SY	SQUARE YARD
GRAN	GRANULAR	RET	RETAINING		
GRAV	GRAVEL	R/W	RIGHT-OF-WAY		
GU	GUTTER	RSC	RIGID STEEL CONDUIT		

REV	ISSUED FOR	DATE
0	BID SET	09-19-2023



**BOLTON
& MENK**

430 E GRAND AVE, SUITE 101
DES MOINES, IOWA 50309
Phone: (515) 259-9190
Email: DesMoines@bolton-menk.com
www.bolton-menk.com



DESIGNED NW/NRJ/TJN
SEALED JLE
CHECKED CB
CLIENT PROJ. NO. 076.128908

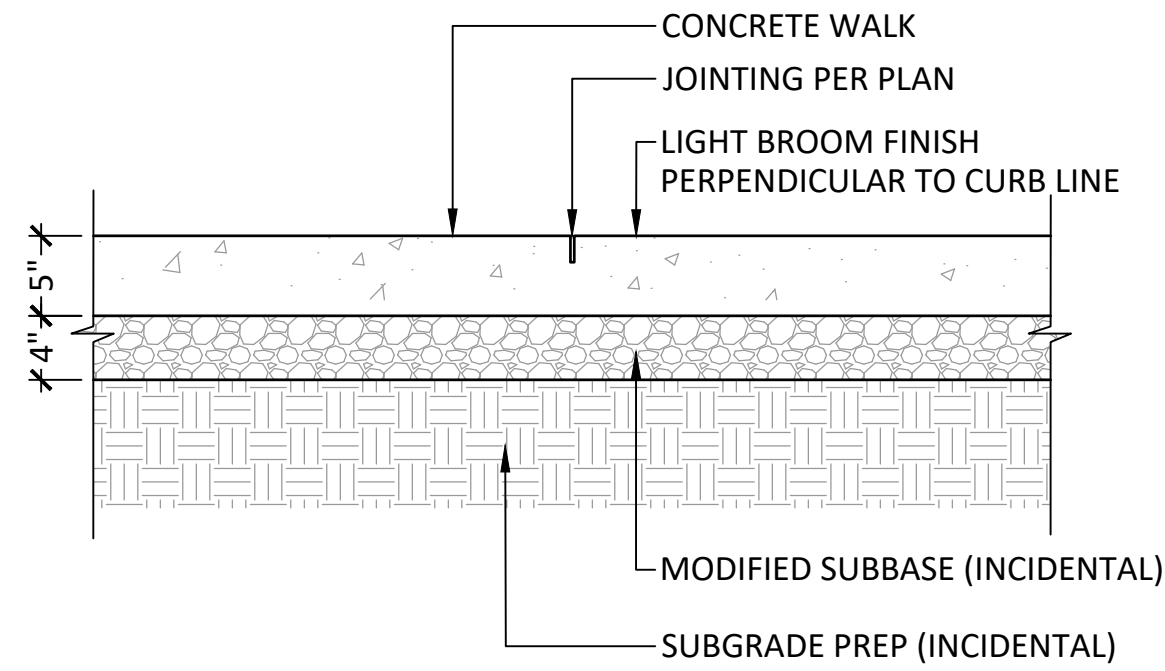
CITY OF WINDSOR HEIGHTS, IOWA

2023 COLBY PARK IMPROVEMENTS

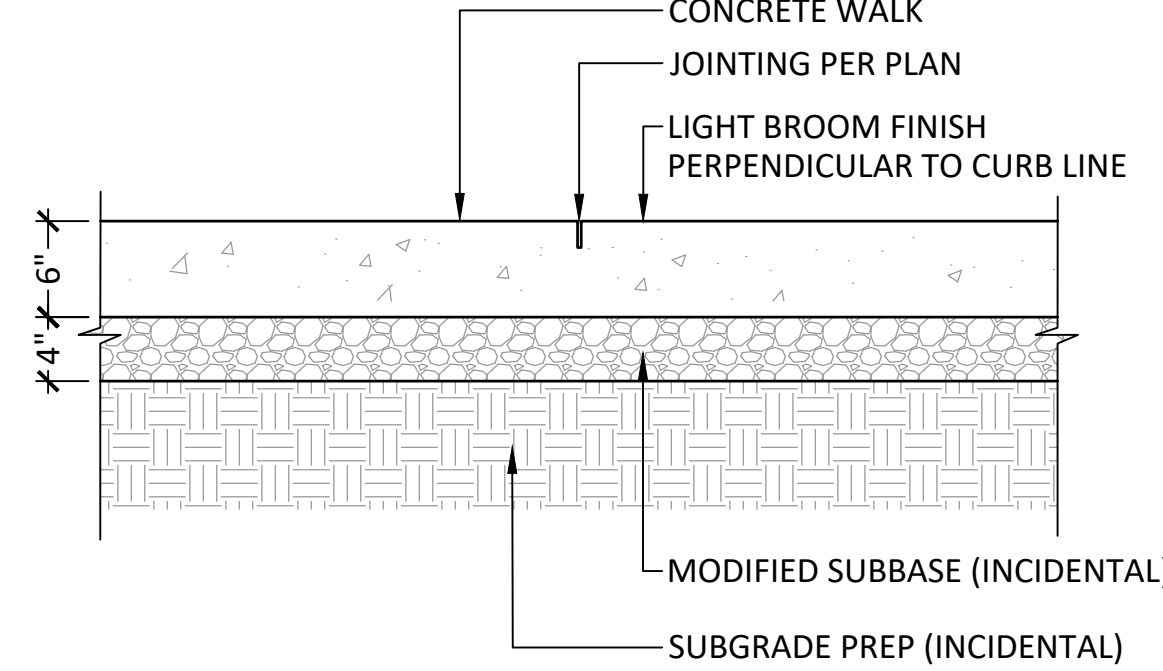
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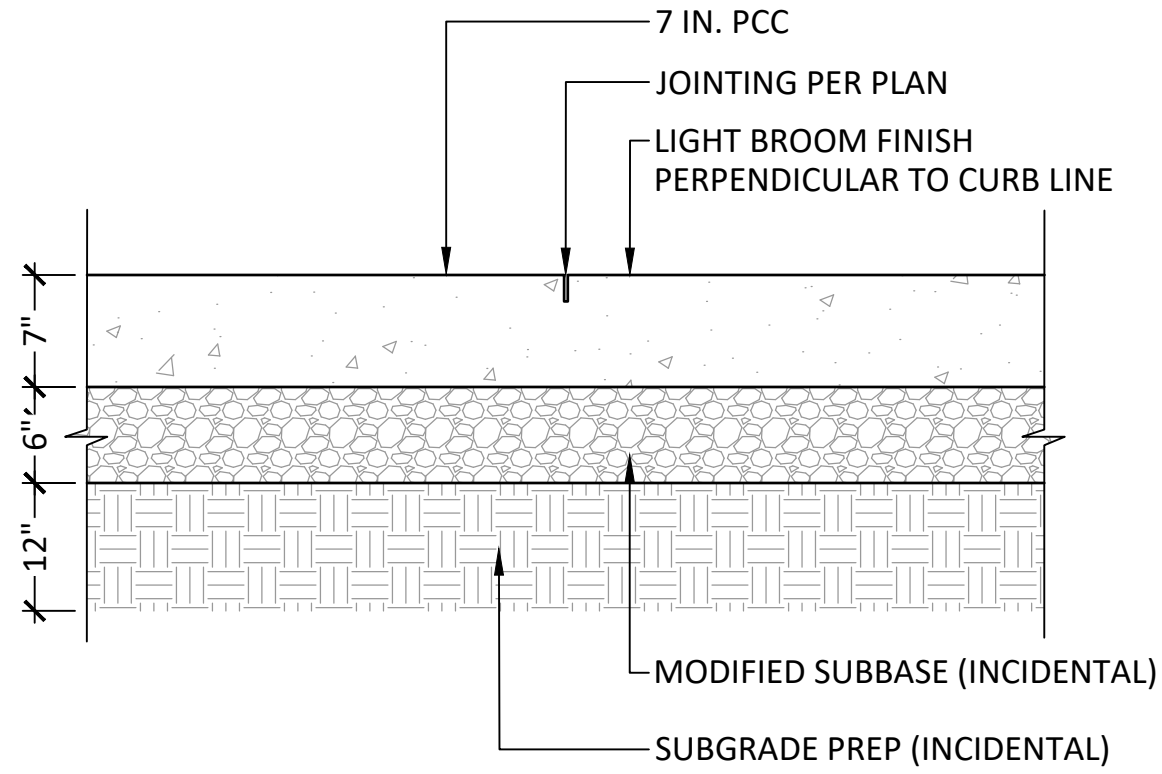
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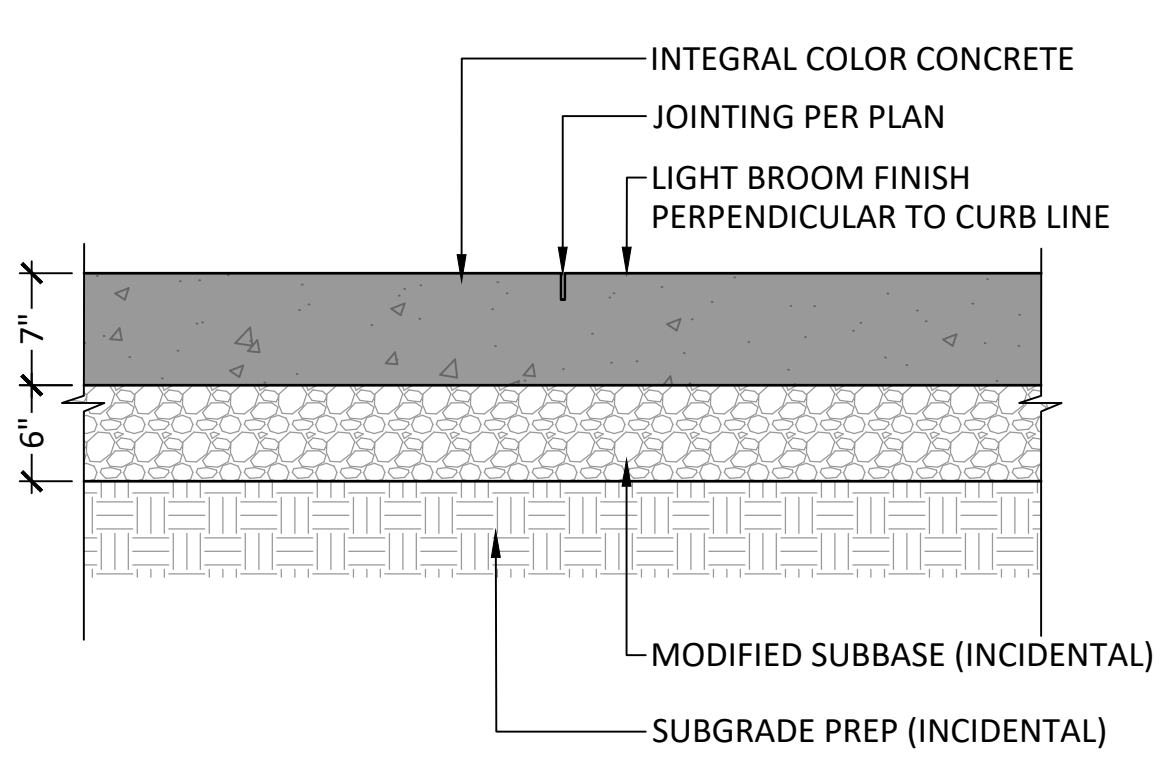
1 SIDEWALK, PCC, 5 IN.
SCALE: N.T.S.



2 SIDEWALK, PCC, 6 IN.
SCALE: N.T.S.

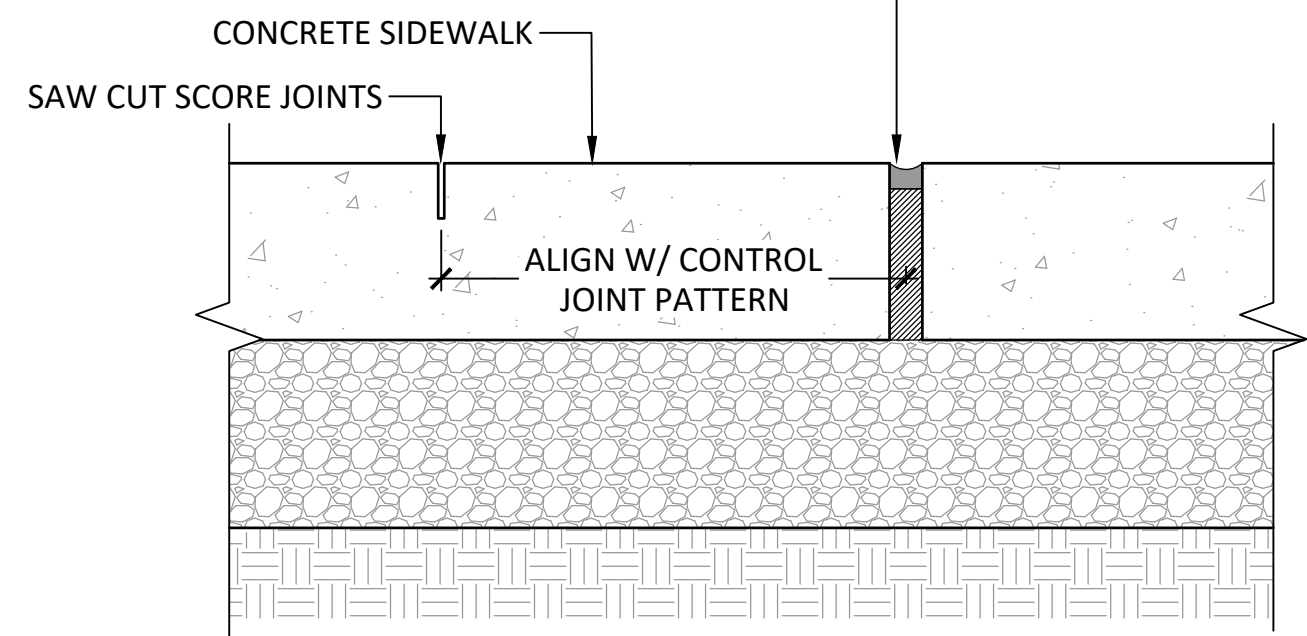


3 PAVEMENT, PCC, 7 IN.
SCALE: N.T.S.

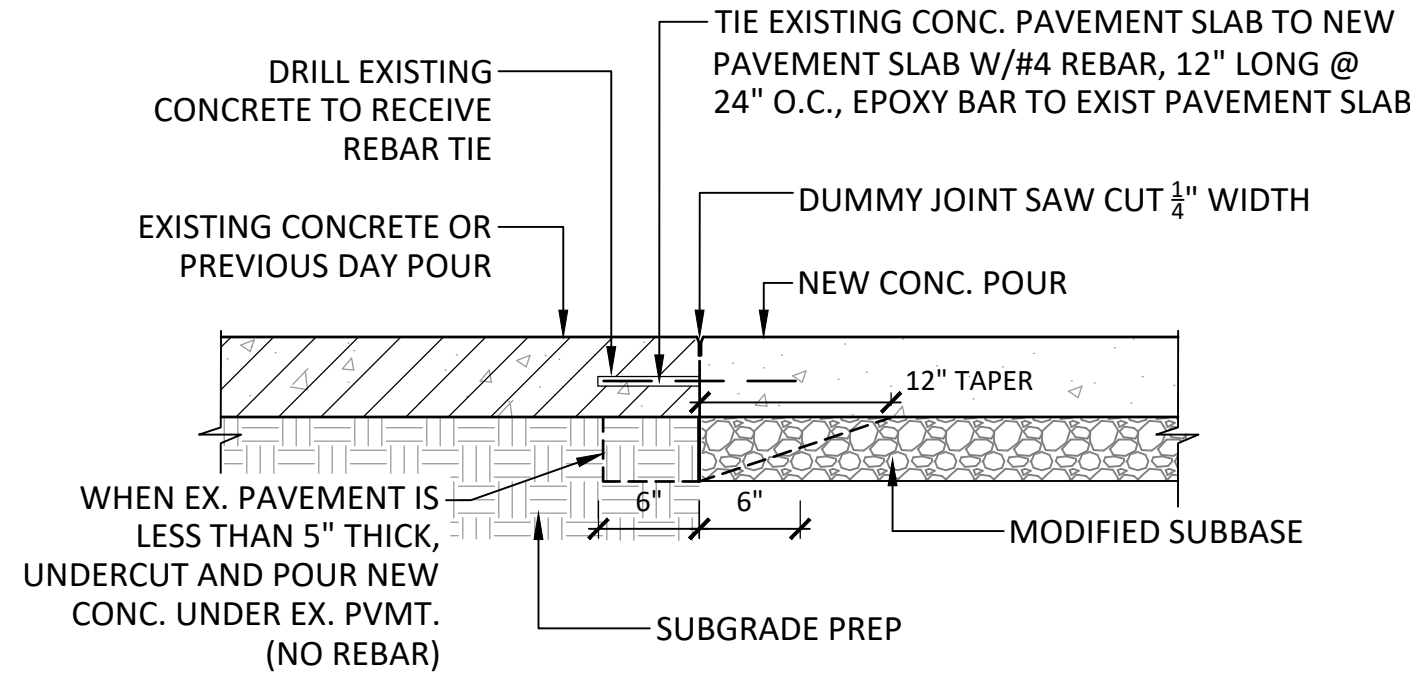


4 PAVEMENT, PCC, 7 INCH, INTEGRAL COLOR
SCALE: N.T.S.

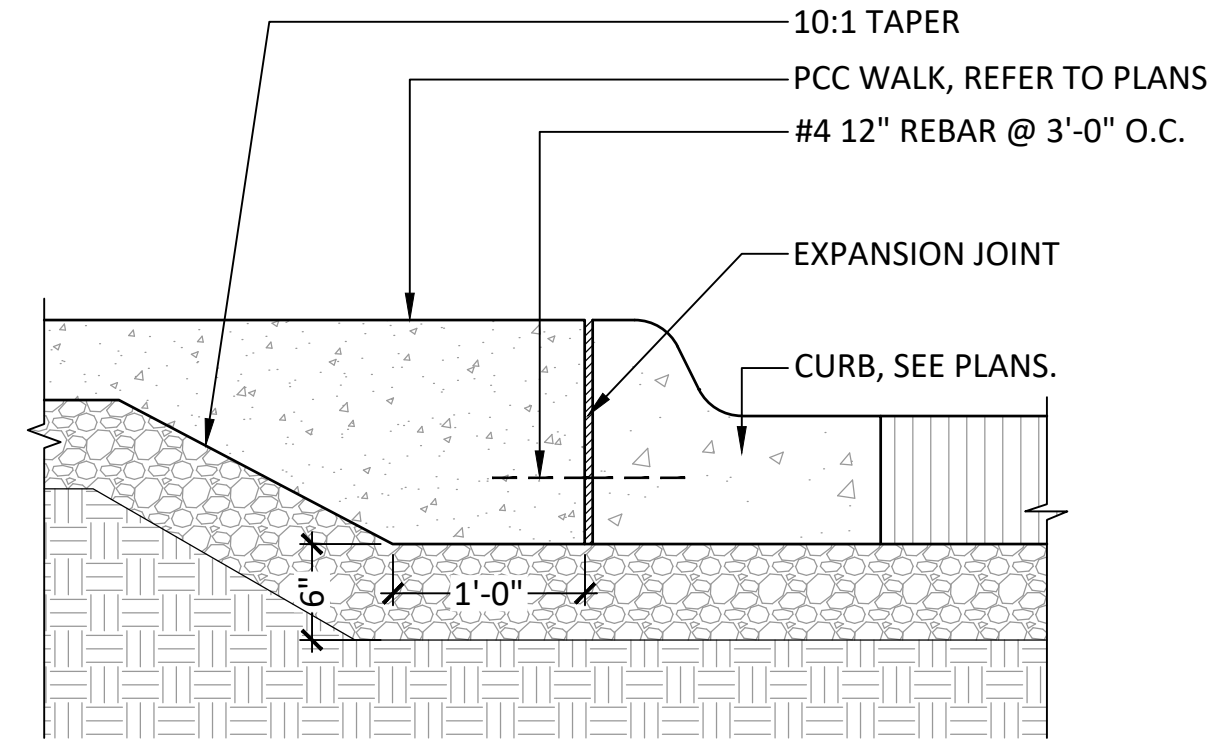
1/2" WIDE ISOLATION JOINT/EXPANSION JOINT W/ 1/2" DEPTH JOINT SEALANT, W/ ISOLATION JOINT MATERIAL. ISOLATION JOINT MATERIAL TO BE 3/4" POLYETHYLENE, CLOSED CELL BACKING. JOINT SEALER TO BE COMPATIBLE W/ EXPANSION JOINT MATERIAL. COLOR TO BE ALUMINUM GRAY. ALL MATERIALS TO BE INSTALLED AS PER MANUFACTURERS RECOMMENDATION. SUBMIT MATERIAL SAMPLES AND TECHNICAL DATA TO OWNER REPRESENTATIVE FOR APPROVAL PRIOR TO CONSTRUCTION



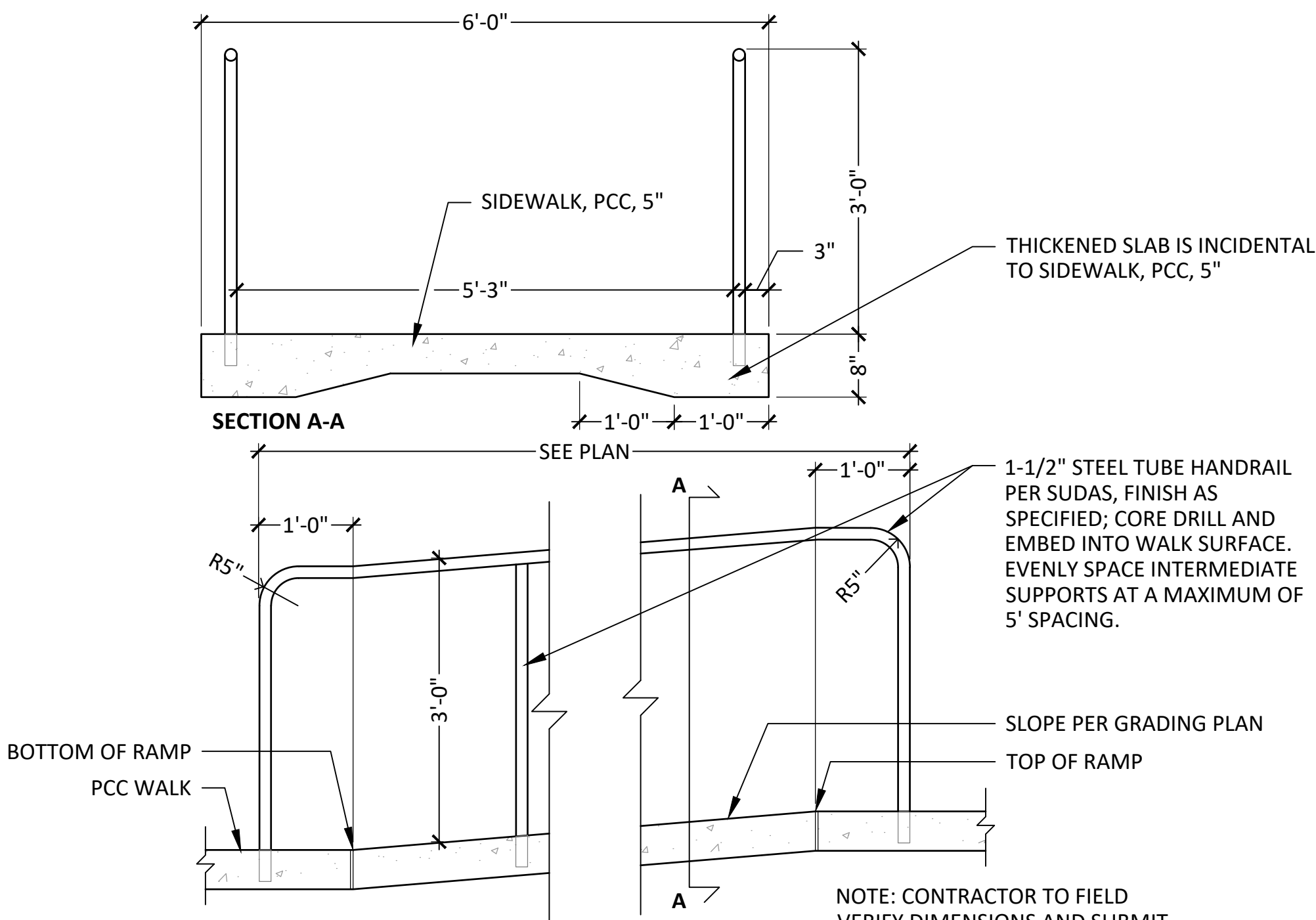
5 CONCRETE SIDEWALK JOINTS
SCALE: N.T.S.



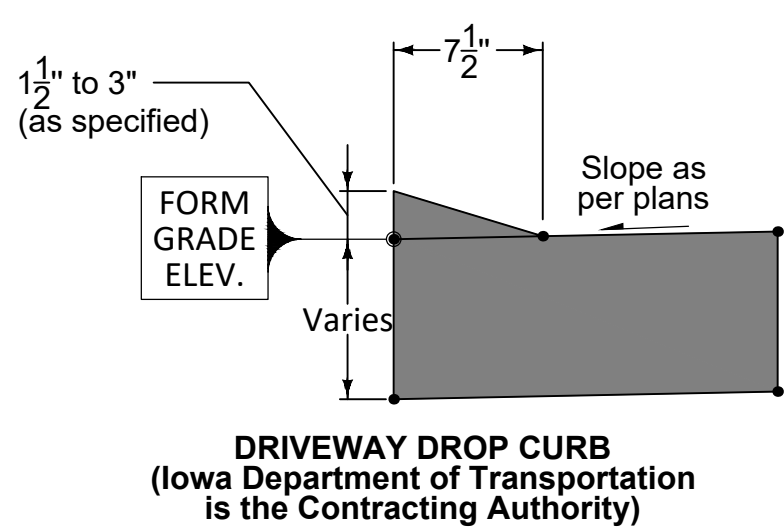
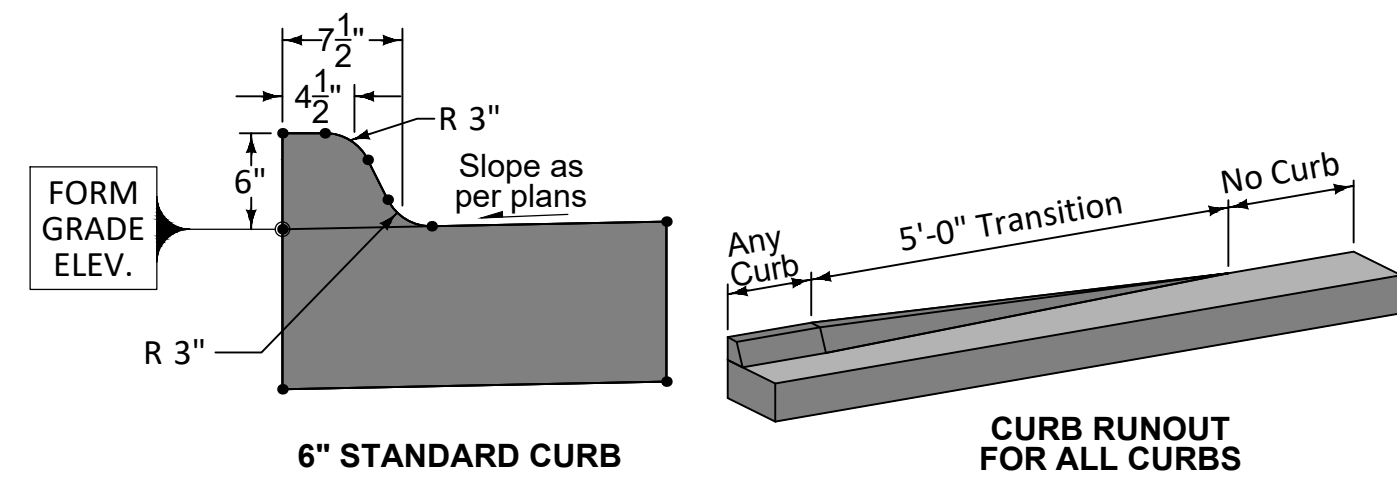
6 PAVEMENT JOINT AT EXISTING CONCRETE PAVEMENT
SCALE: N.T.S.



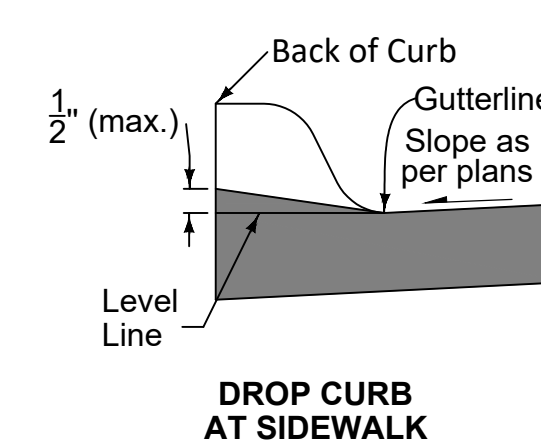
7 THICKENED SIDEWALK AT BACK OF CURB
SCALE: N.T.S.



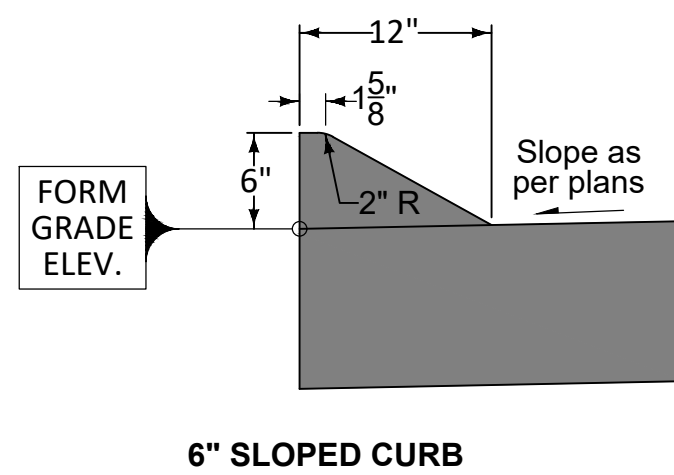
8 RAMP WITH HANDRAIL
SCALE: N.T.S.



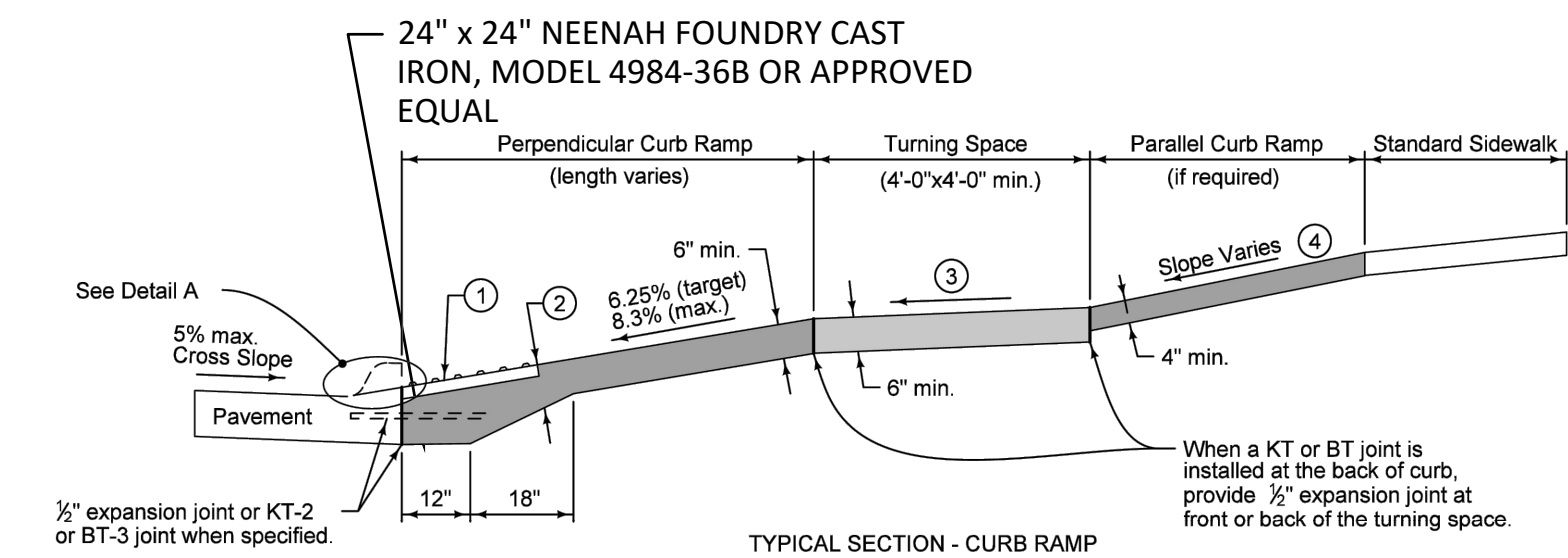
DRIVEWAY DROP CURB
(Iowa Department of Transportation is the Contracting Authority)



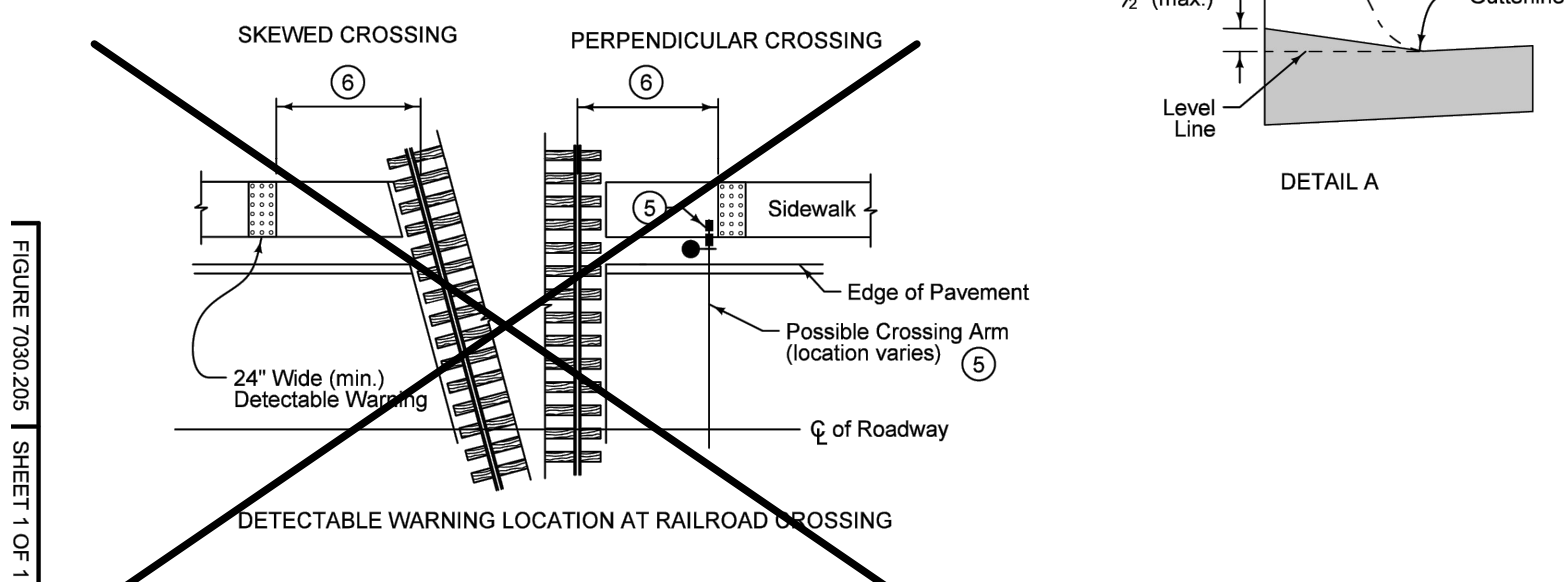
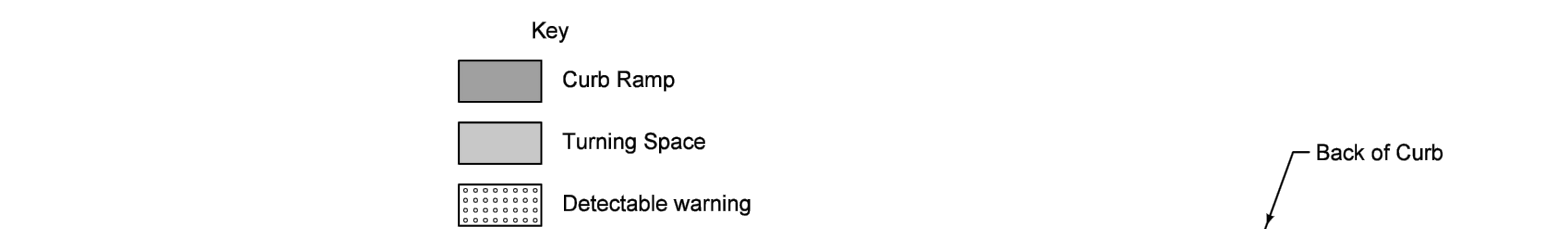
DROP CURB AT SIDEWALK



6" SLOPED CURB



TYPICAL SECTION - CURB RAMP



10 PEDESTRIAN CURB RAMP/DETECTABLE WARNING
SCALE: N.T.S.

- Provide a minimum 2 foot width of detectable warning surfaces in the direction of pedestrian travel across the full width of the curb ramp or turning space, exclusive of curbs or flares.
- Provide a minimum of 6 inches of concrete below the detectable warning panel.
- Minimum 4 feet by 4 feet. Target cross slope of 1.5% with a maximum cross slope of 2.0%.
- If normal sidewalk elevation cannot be achieved with the perpendicular ramp between the street and landing due to limited ramp length, provide a parallel ramp to make up the elevation difference between the landing and the standard sidewalk.
The length of the parallel ramp is not required to exceed 15 feet, regardless of the resulting slope. Do not exceed 8.3% slope for parallel ramps shorter than 15 feet.
- If crossing gate conflicts with location of detectable warning or if pedestrian crossing gate is provided, place detectable warning panel in advance of the crossing gate.
- Locate front edge of detectable warning panel 12 to 15 feet from centerline of nearest rail. Orient truncated domes parallel to the direction of pedestrian travel.

	REVISION
	1 10-20-15
	7030.205
	SHEET 1 of 1
SUDAS Standard Specifications	
GENERAL SIDEWALK AND CURB RAMP DETAILS	

REV	ISSUED FOR	DATE
0	BID SET	09-19-2023



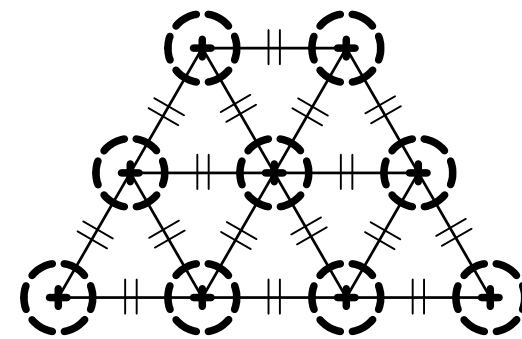
430 E GRAND AVE, SUITE 101
DES MOINES, IOWA 50309
Phone: (515) 259-9190
Email: DesMoines@bolton-menk.com
www.bolton-menk.com



DESIGNED	NW/NRJ/TJN
SEALED	CB
CHECKED	CB
CLIENT PROJ. NO.	076.128908

CITY OF WINDSOR HEIGHTS, IOWA
2023 COLBY PARK IMPROVEMENTS
TYPICAL SECTIONS

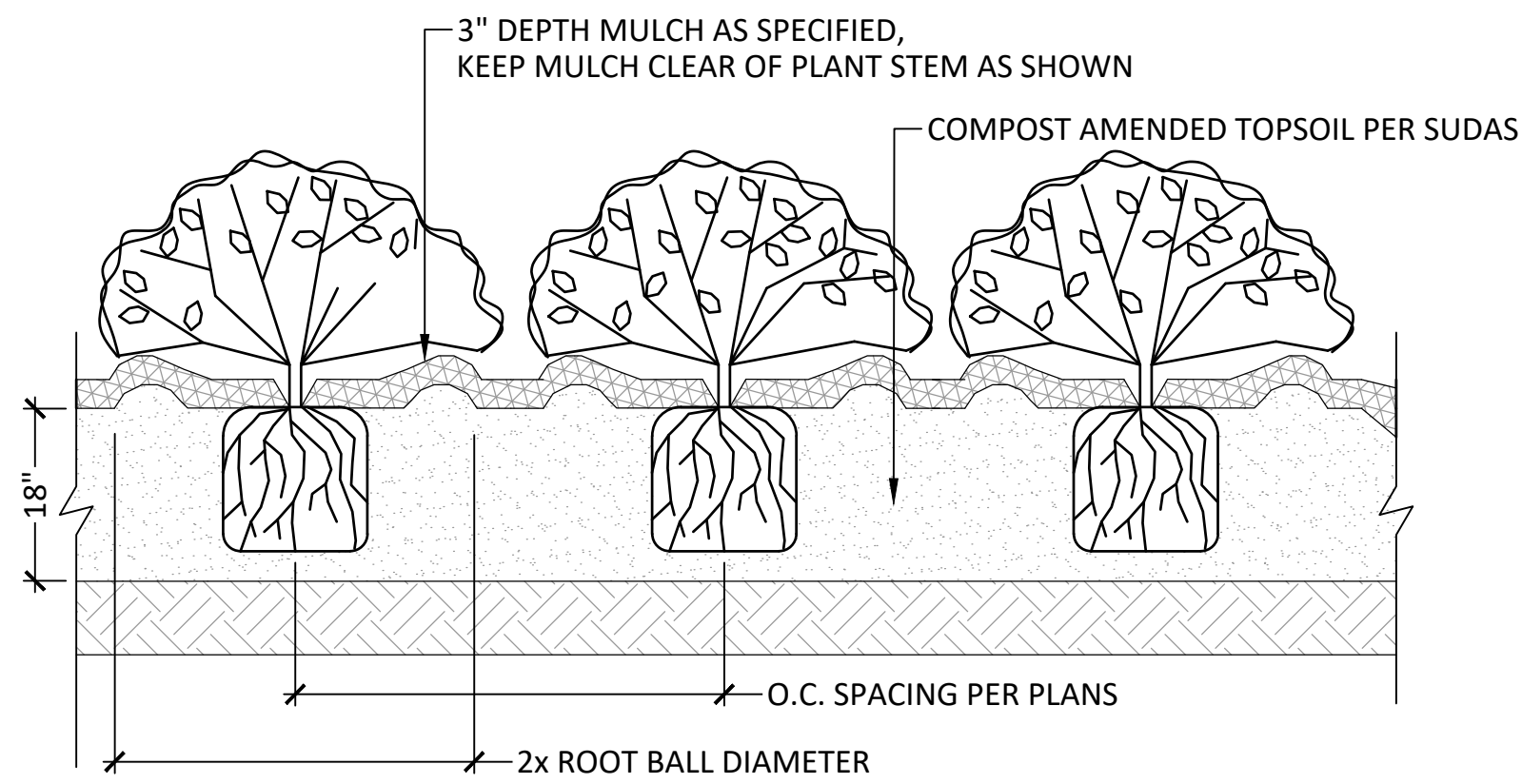
Diagram illustrating a landscape bed cross-section. The bed is defined by a **SPADE-CUT EDGE FILLED WITH MULCH**. The bed contains a **SHRUB/PERENNIAL BED** and is covered with **HARDWOOD MULCH**. The adjacent area is labeled **LAWN**. Dimensions shown are 9" for the bed depth and 6" for the mulch layer thickness.



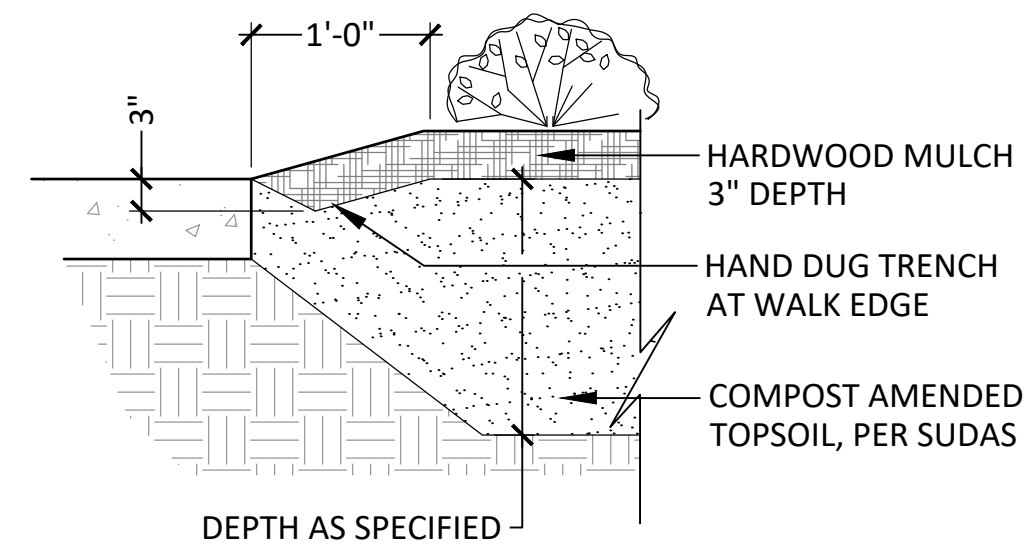
1. O.C. TRIANGULAR PLANT SPACING PER PLANS
2. AREAS IDENTIFIED ON PLANTING PLAN AS O.C. SHALL BE TRIANGULAR SPACED
3. SEE PLANTING PLAN/SCHEDULE FOR SPECIES

1 SECTION: SPADE-CUT EDGE
SCALE: N.T.S.

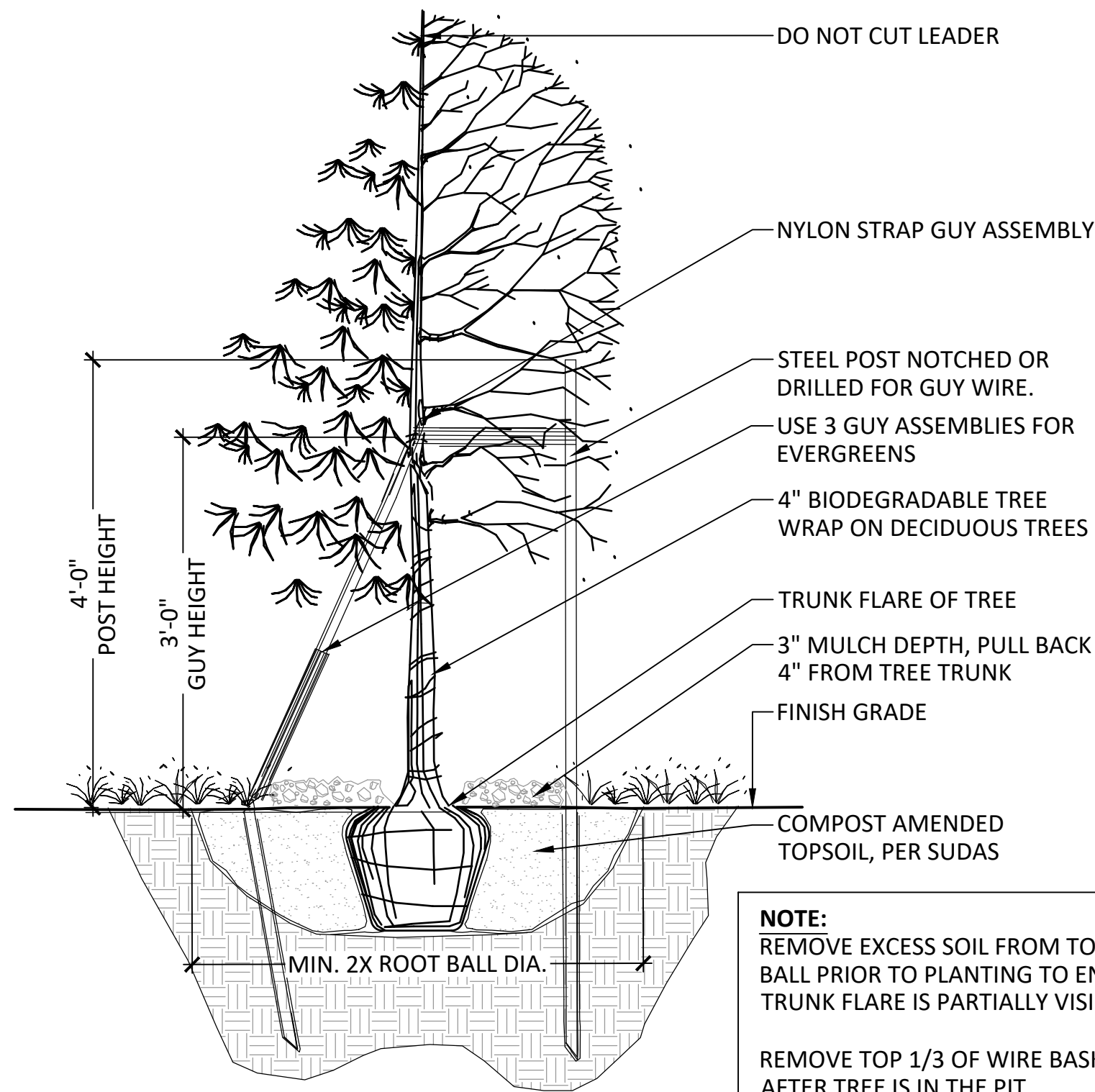
PERENNIAL PLANT SPACING
SCALE: N.T.S.



3 PERENNIAL / SHRUB PLANTING
SCALE: N.T.S.

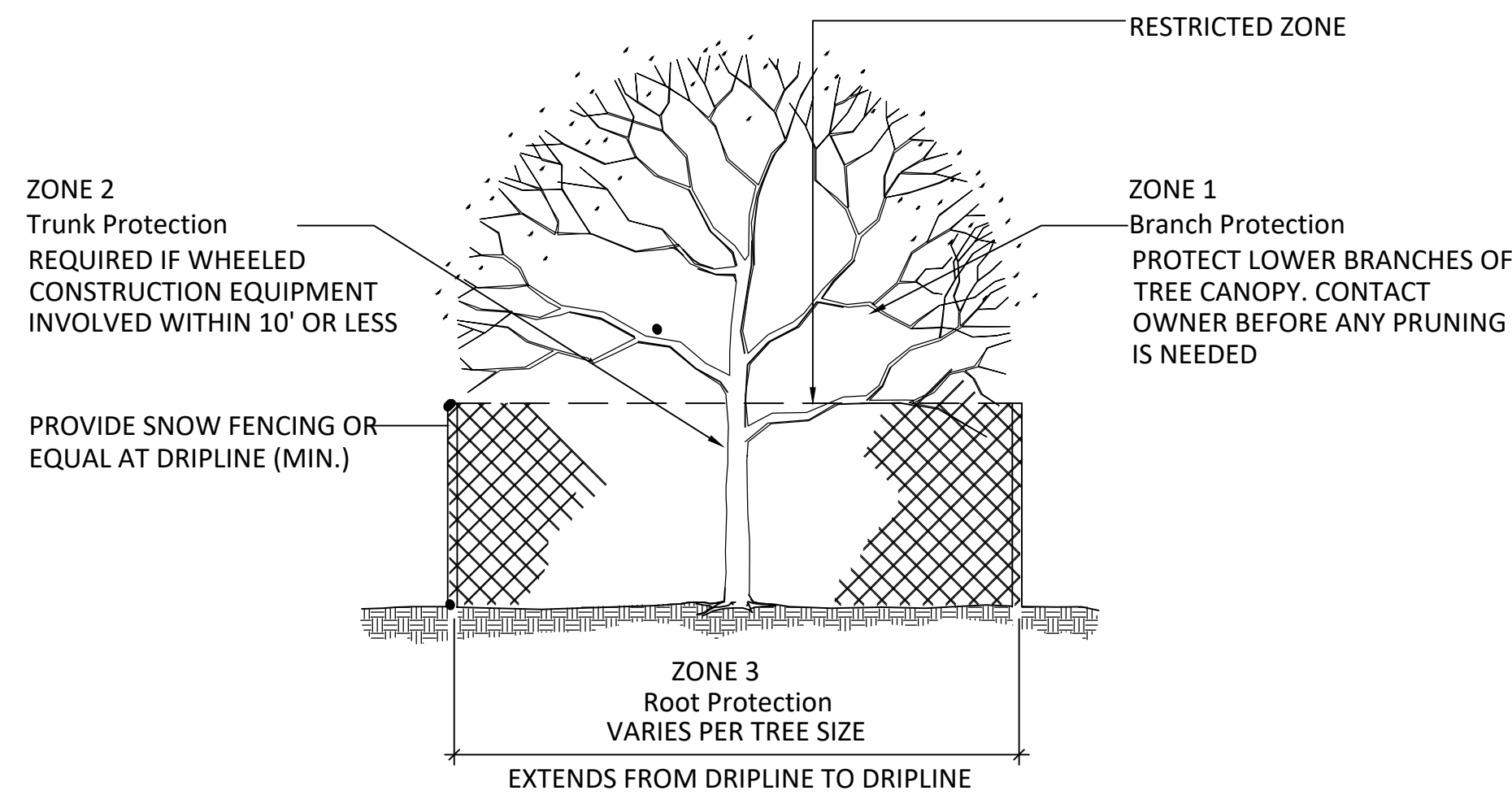


4 PLANTING EDGE AT HARDSCAPE SURFACE
SCALE: N.T.S.



SET TOP OF ROOT BALL
1" TO 2" ABOVE SURROUNDING
FINISH GRADE

5 TREE PLANTING
SCALE: N.T.S.



6 EXISTING TREE PROTECTION
SCALE: N.T.S.

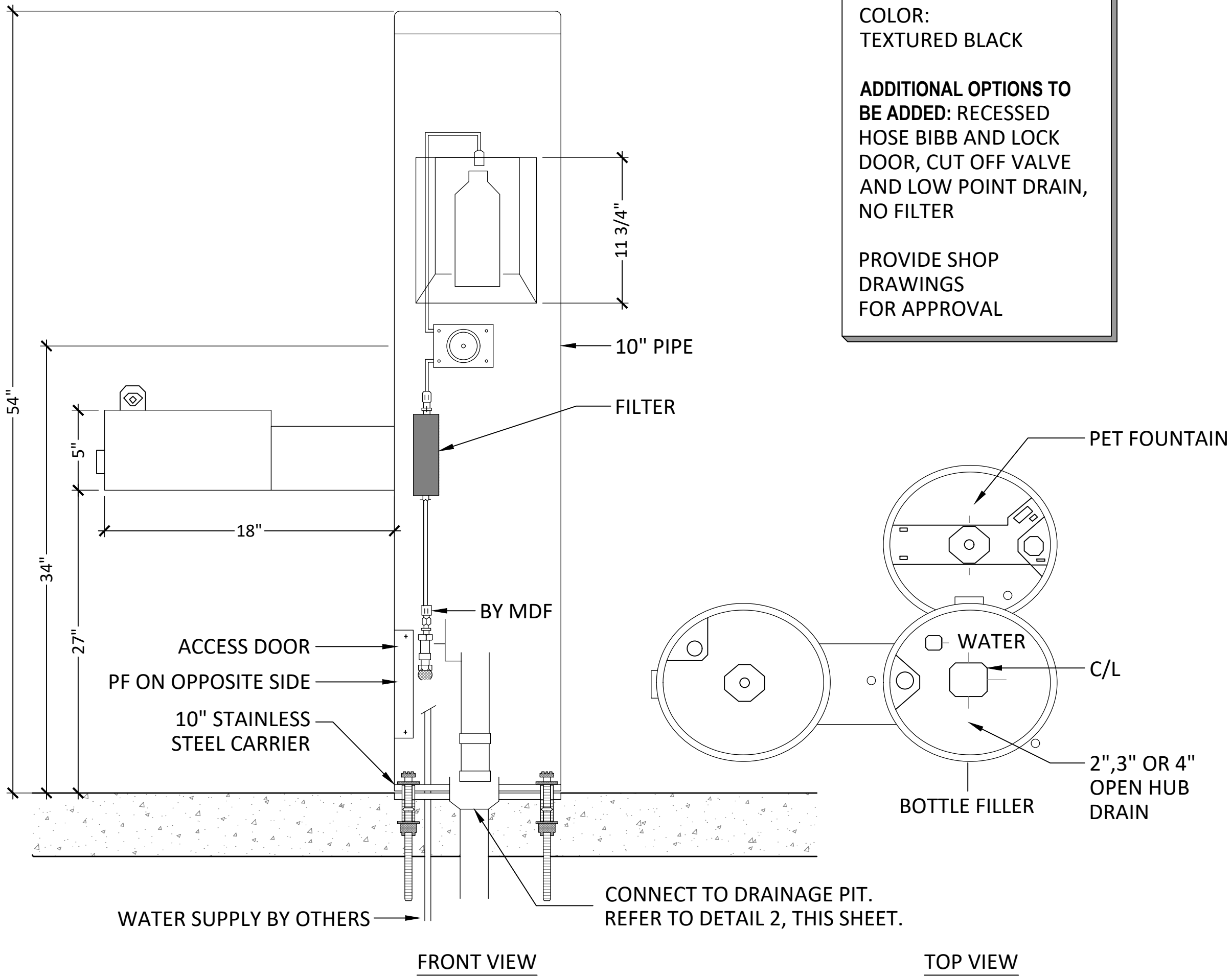
1. ALL TREES TO BE PROTECTED SHALL BE PER DETAIL. GROUPING OF MORE THAN ONE TREE MAY OCCUR.
2. TREES TO BE PROTECTED AND PRESERVED SHALL BE IDENTIFIED ON THE TRUNK WITH WHITE SURVEY TAPE.
3. TO PREVENT TREE ROOT SMOTHERING, SOIL STOCKPILES, SUPPLIES, EQUIPMENT OR ANY OTHER MATERIAL SHALL NOT BE PLACED OR STORED WITHIN A TREE DRIP LINE OR WITHIN 15 FEET OF A TREE TRUNK, WHICHEVER IS GREATER.
4. TREE ROOTS SHALL NOT BE CUT UNLESS CUTTING IS UNAVOIDABLE.
5. TRENCHES SHALL BE HAND DUG WITHIN THE DRIP LINE IN AREAS WHERE ROOTS TWO INCHES IN DIAMETER AND GREATER ARE PRESENT, OR WHEN IN CLOSE PROXIMITY TO LOW BRANCHING TREES. WHENEVER POSSIBLE, ROOTS TWO INCHES OR GREATER IN DIAMETER SHALL BE TUNNELED OR BORED UNDER AND SHALL BE COVERED TO PREVENT DEHYDRATION.
6. WHEN ROOT CUTTING IS UNAVOIDABLE, A CLEAN SHARP CUT SHALL BE MADE TO AVOID SHREDDING OR SMASHING. ROOT CUTS SHOULD BE MADE BACK TO A LATERAL ROOT. WHENEVER POSSIBLE, TREE ROOTS SHOULD BE CUT BETWEEN LATE FALL AND BUD OPENING, WHEN ROOT ENERGY SUPPLIES ARE HIGH AND CONDITIONS ARE LEAST FAVORABLE FOR DISEASE CAUSING AGENTS. EXPOSED ROOTS SHALL BE COVERED IMMEDIATELY TO PREVENT DEHYDRATION. ROOTS SHALL BE COVERED WITH SOIL OR BURLAP AND KEPT MOIST.
7. WATERING OF PROTECTED TREES IN WHICH ROOTS WERE CUT SHALL BE PROVIDED BY THE CONTRACTOR.
8. AUGER TUNNELING RATHER THAN TRENCHING SHOULD BE USED FOR UTILITY PLACEMENT WITHIN DRIP LINE OF TREE.
9. FENCING MATERIAL SHALL ENCIRCLE ANY TREE WHOSE OUTER DRIP LINE EDGE IS WITHIN 20 FEET OF ANY CONSTRUCTION ACTIVITIES.
10. FENCING MATERIAL SHALL BE BRIGHT, CONTRASTING COLOR, DURABLE, AND A MINIMUM OF FOUR FEET IN HEIGHT.
11. FENCING MATERIAL SHALL BE SET AT THE DRIP LINE OR 15 FEET FROM TREE TRUNK, WHICHEVER IS GREATER, AND MAINTAINED IN AN UPRIGHT POSITION THROUGHOUT THE DURATION OF CONSTRUCTION ACTIVITIES.
12. ANY GRADE CHANGES (SUCH AS THE REMOVAL OF TOPSOIL OR ADDITION OF FILL MATERIAL) WITHIN THE DRIP LINE SHOULD BE AVOIDED FOR EXISTING TREES TO REMAIN. RETAINING WALLS AND TREE WELLS ARE ACCEPTABLE ONLY WHEN CONSTRUCTED PRIOR TO GRADE CHANGE.

MOST DEPENDABLE FOUNTAINS, INC.
5705 COMMANDER DR. P.O. BOX 587
ARLINGTON, TN 38002-0587
PHONE: (901) 867-0039
www.mostdependable.com

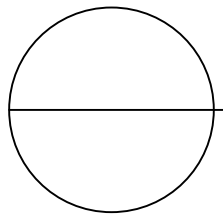
NOTE:
COLOR:
TEXTURED BLACK

ADDITIONAL OPTIONS TO
BE ADDED: RECESSED
HOSE BIBB AND LOCK
DOOR, CUT OFF VALVE
AND LOW POINT DRAIN,
NO FILTER

PROVIDE SHOP
DRAWINGS
FOR APPROVAL

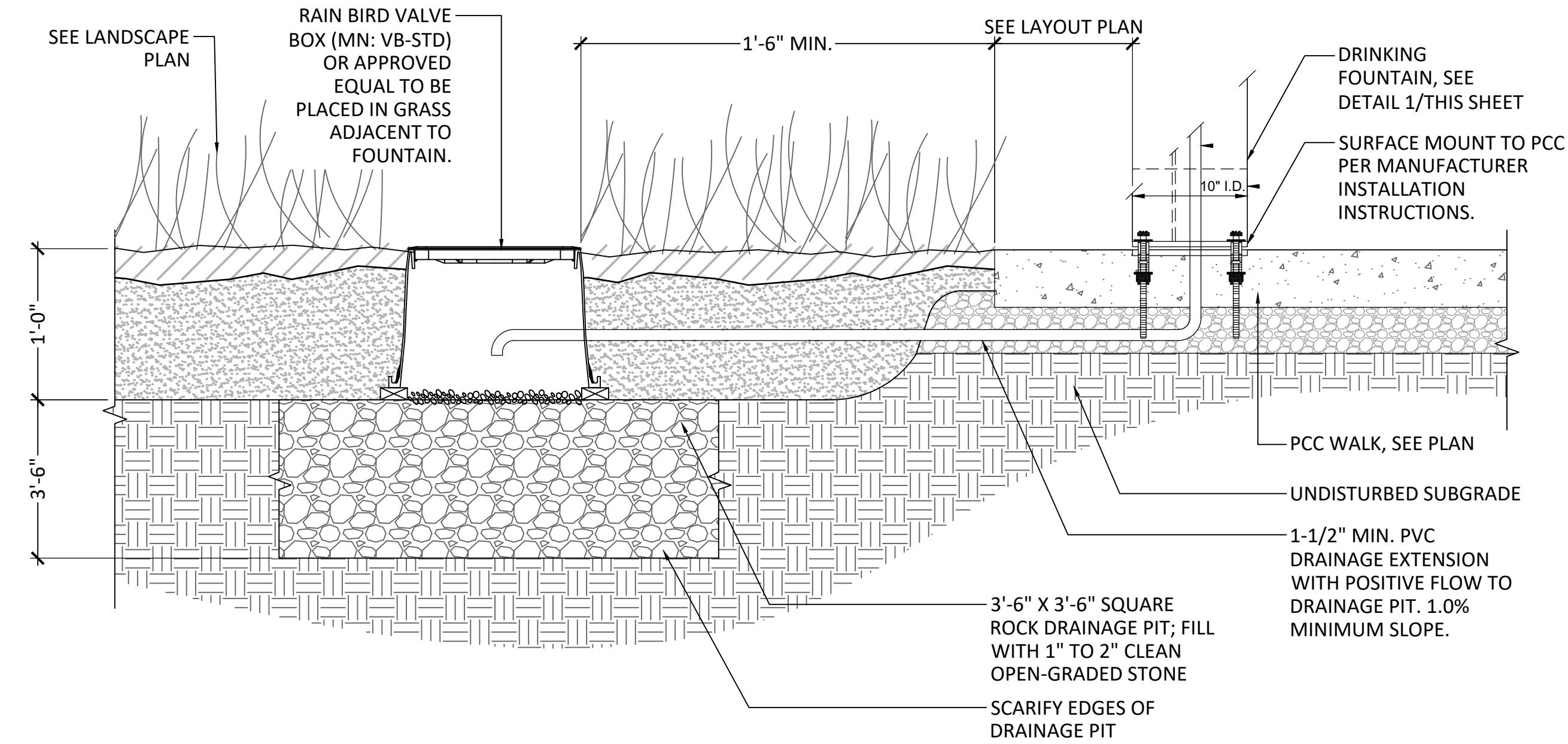


- NOTES:
- OPTIONAL STAINLESS STEEL SURFACE CARRIER RECOMMENDED.
 - INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
 - DO NOT SCALE DRAWING.
 - THIS DRAWING IS INTENDED FOR USE BY ARCHITECTS, ENGINEERS, CONTRACTORS, CONSULTANTS AND DESIGN PROFESSIONALS FOR PLANNING PURPOSES ONLY. THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION.
 - ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT BUT MUST BE REVIEWED AND APPROVED BY THE PRODUCT MANUFACTURER TO BE CONSIDERED ACCURATE.
 - CONTRACTOR'S NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info AND ENTER REFERENCE NUMBER 3354-17.7.

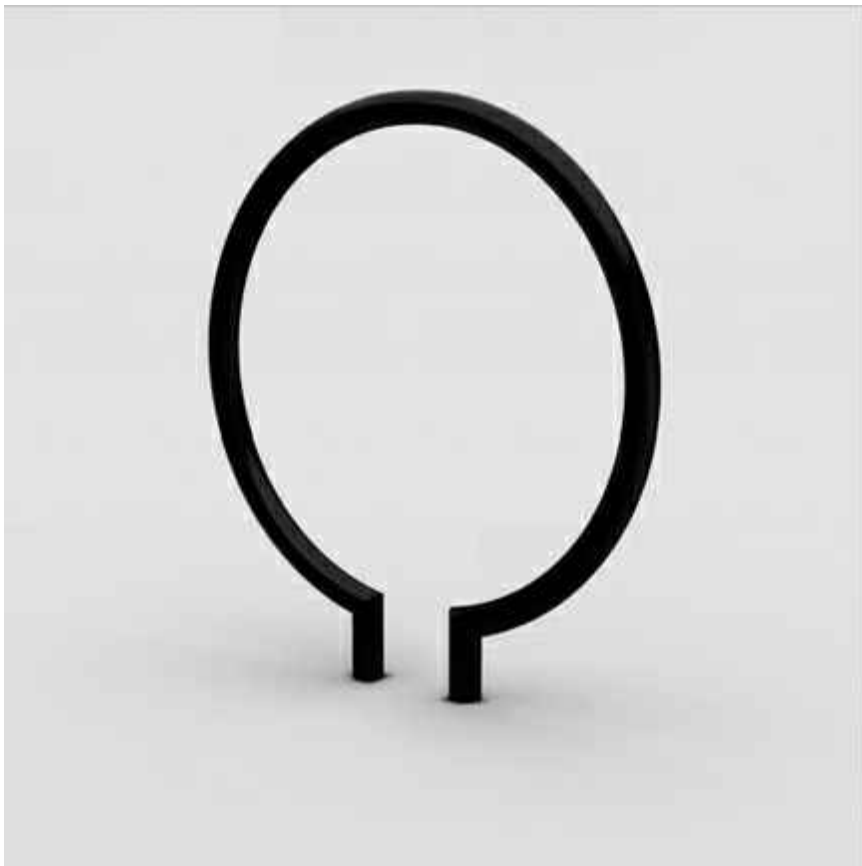
 **MODEL 10155SM**
10155SM SHOWN WITH OPTIONAL 10" SS SURFACE CARRIER

**MUST BE INSTALLED
BY MAY 2024**

1 DRINKING FOUNTAIN (MDF MODEL 10155SM)
SCALE: N.T.S.



2 DRINKING FOUNTAIN DRAINAGE PIT
SCALE: N.T.S.



BIKE RACK:

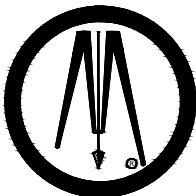
- MANUFACTURER: LANDSCAPE FORMS
- MODEL: RING
- COLOR: BLACK
- FINISH: POWDERCOAT, BLACK
- MOUNTING: EMBEDDED PER MANUFACTURER

OR APPROVED EQUAL

CONTACT: STACY ERNST
Site Source, Ilc.
816-444-4376
stacye@landscapeforms.com

3 BIKE RACK

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0	BID SET	09-19-2023



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& MENK**

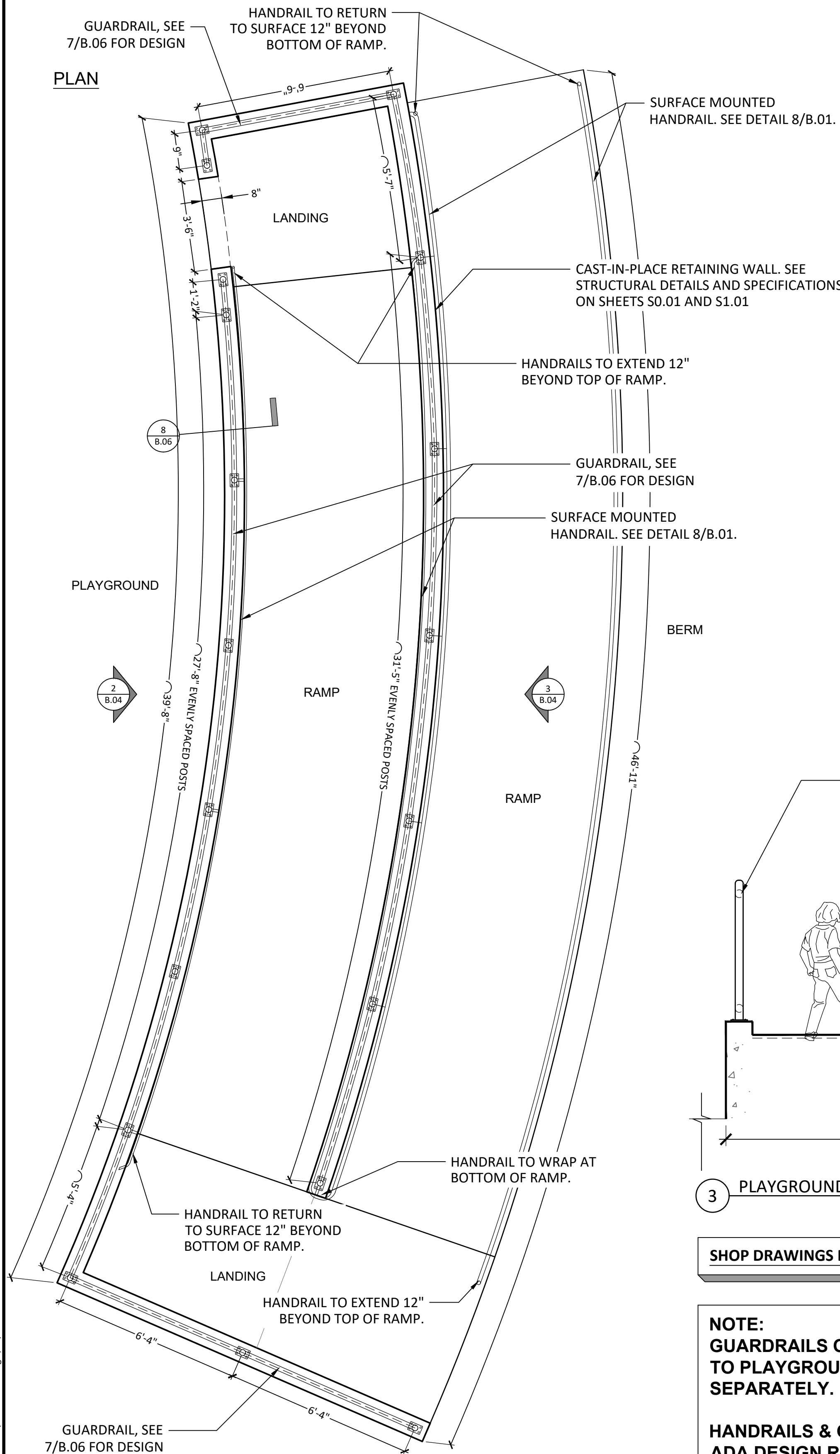
430 E GRAND AVE, SUITE 101
DES MOINES, IOWA 50309
Phone: (515) 259-9190
Email: DesMoines@bolton-menk.com
www.bolton-menk.com



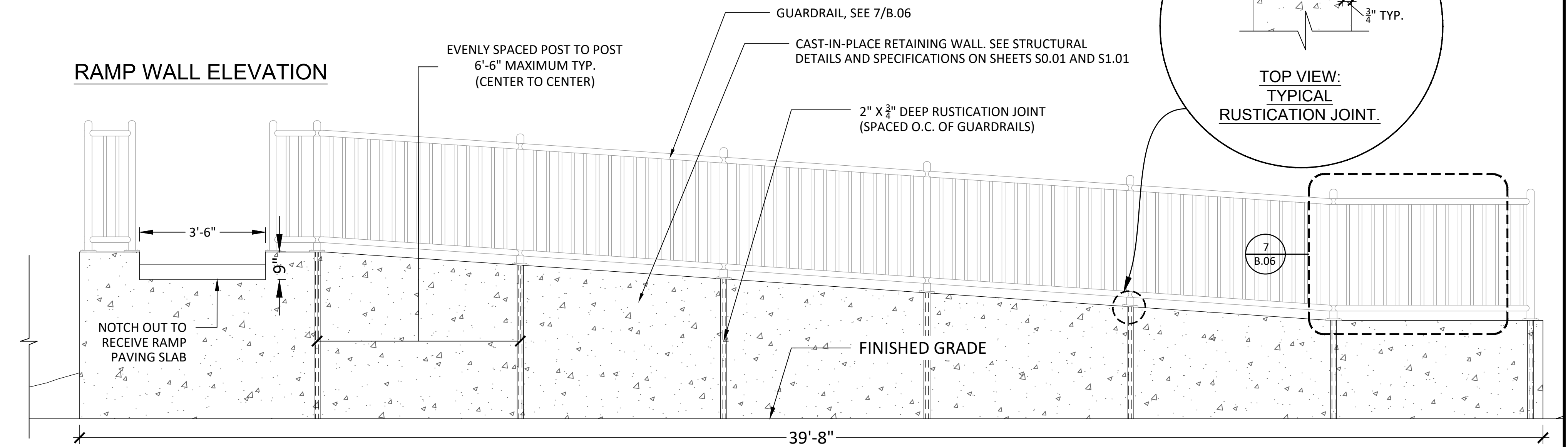
DESIGNED NW/NRJ/TJN
SEALED CB
CHECKED CB
CLIENT PROJ. NO. 076.128908

CITY OF WINDSOR HEIGHTS, IOWA
2023 COLBY PARK IMPROVEMENTS
TYPICAL SECTIONS

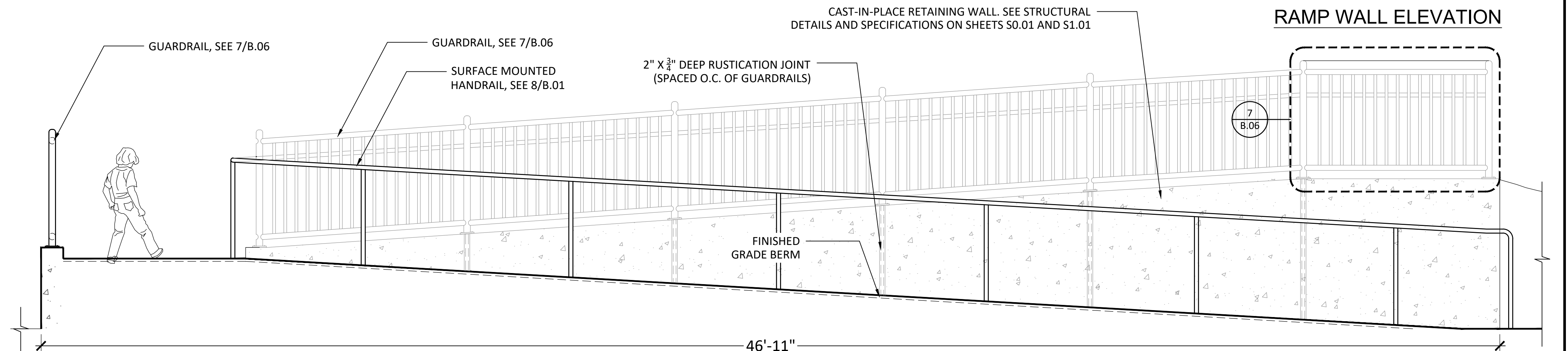
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1 PLAYGROUND RAMP WALL



2 PLAYGROUND RAMP WALL



3 PLAYGROUND RAMP WALL

SHOP DRAWINGS REQUIRED

NOTE:
GUARDRAILS ON THIS SHEET TO BE INCIDENTAL TO PLAYGROUND EQUIPMENT. HANDRAILS PAID SEPARATELY.

HANDRAILS & GUARDRAILS SHALL FOLLOW ALL ADA DESIGN REQUIREMENTS.

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CITY OF WINDSOR HEIGHTS, IOWA

2023 COLBY PARK IMPROVEMENTS

TYPICAL SECTIONS

SHEET

B.04

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C:\WINDSOR\CI\140722250\CD\DWG\112808801.dwg 9/13/2023 4:51 PM

Structure:

Stainless Steel Fabrication,
(see specification for details)

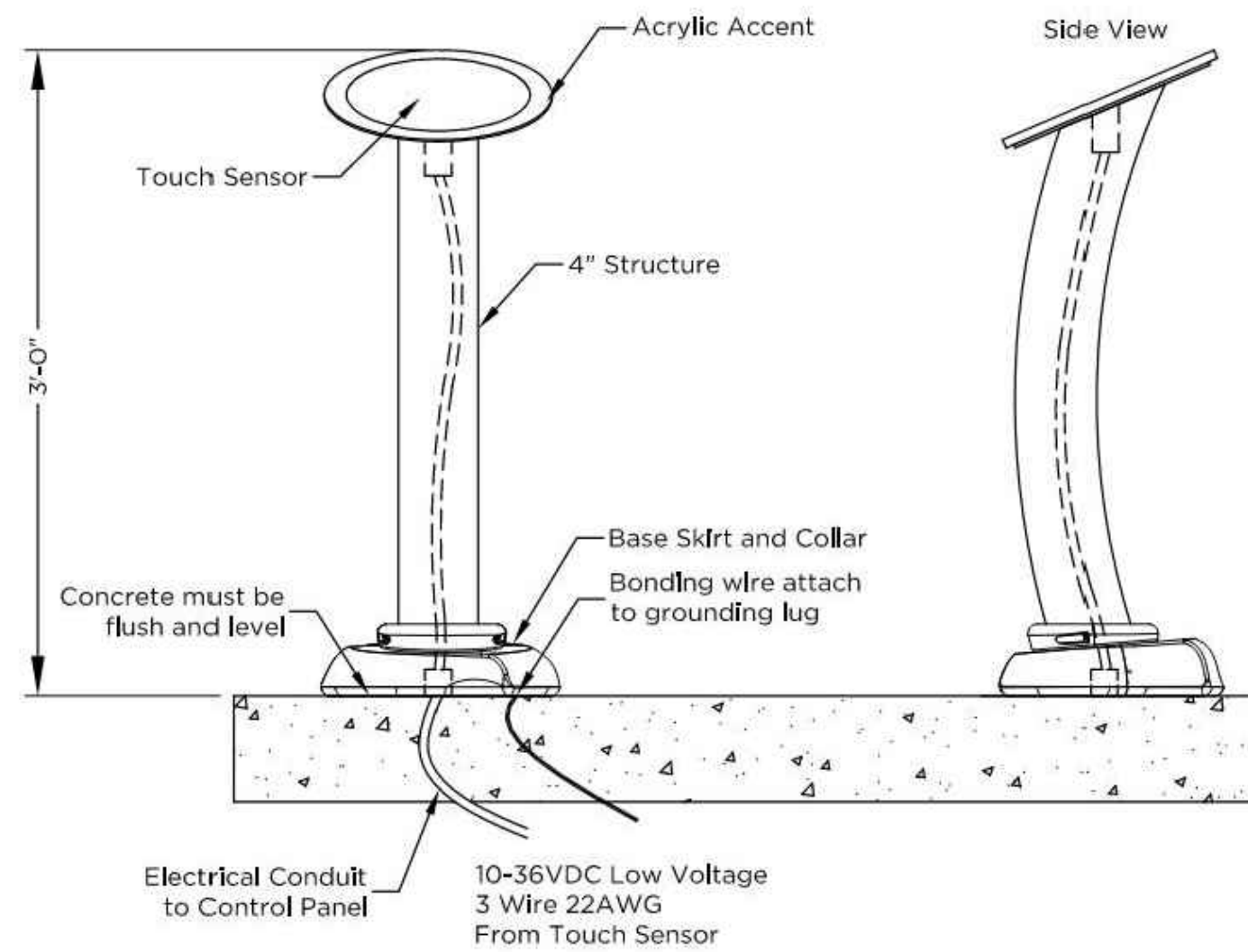
Acrylic Accents
(see specification for details)

Skirt
Fiberglass Fabrication
(see specification for details)

Collar
Urethane
(see specification for details)

Aquavator Data:

Recommended Distance From Aquavator(s) to
Control Panel 50'



Aquavator:

Model No.	Description
ACT-BP	Aquavator



877-632-0503
Local 952-445-5135
Fax 952-345-6444
aquatix.playlsi.com

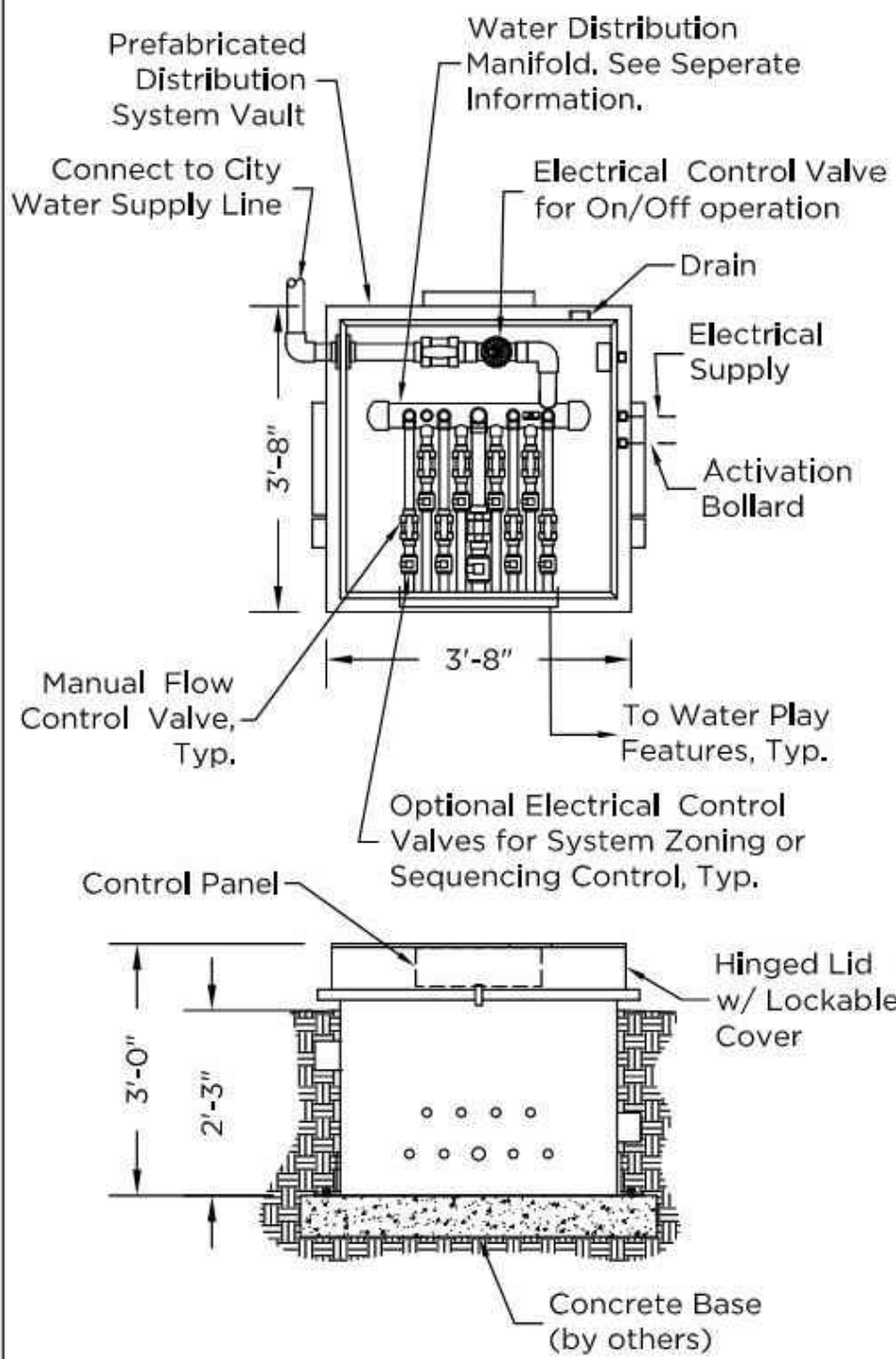
AQUAVATOR

JLS
DRAWN BY

1/4"=1'-0"
SCALE

1/18/17
DATE

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Note:
-Configuration of manifold to be project specific.
-All discharge lines are supplied with manual ball valves to regulate flow.
-If system is designed for zone or sequencing, electrical activation valves will be added and controlled by PLC in control panel.
-To avoid erosion of copper supply line pipe, velocities should not exceed 8 feet per second.
-All plumbing lines and valving shall be installed per local codes and regulations.

Distribution Sizing Chart:

Model No.	Max. Feature Flow Rate:	Water Supply Line**
WDM-300-175	175 gpm	3"

** Note: Water supply line flow rates are based on 20 to 30 psi.



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**PREFABRICATED DISTRIBUTION
VAULT SYSTEM**

KML
DRAWN BY

1/2"=1'-0"
SCALE

9/21/16
DATE

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Domestic Vault System:

- Water Distribution Manifold -

Total Feature Flow Rate:	Project Specific
Optional Zoning Electrical Control Valves:	Yes / No
Optional Sequencing Electrical Control Valves:	Yes / No
Discharge Lines (11 max):	

- Control Panel -

Standard Panel design for all on/off controls only:	Yes / No
PLC Based Panel for Zoned Controlled System:	Yes / No
PLC Based Panel for Sequenced Controlled System:	Yes / No

Power Feeds to Manifold: _____ (# of Valves)

Activation Bollard Relay: _____ (# of Bollards)

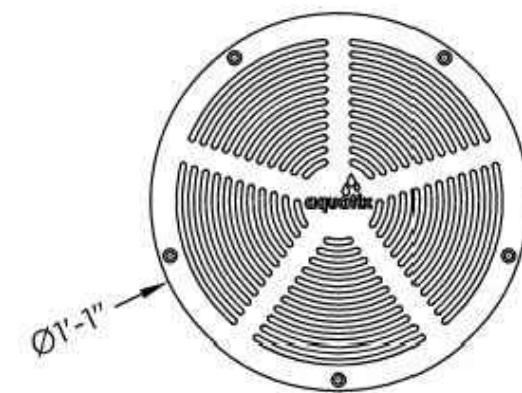
Main Power Supply #1:

120 volts Single phase 20A max.
(1 ph, 120 v, 60 hz.)
(*Power Supply to be GFI protected.)

- Prefabricated Distribution System Vault -

Note:
-Information provided is preliminary except the required main power supply NEEDS 120v, / 1ph.

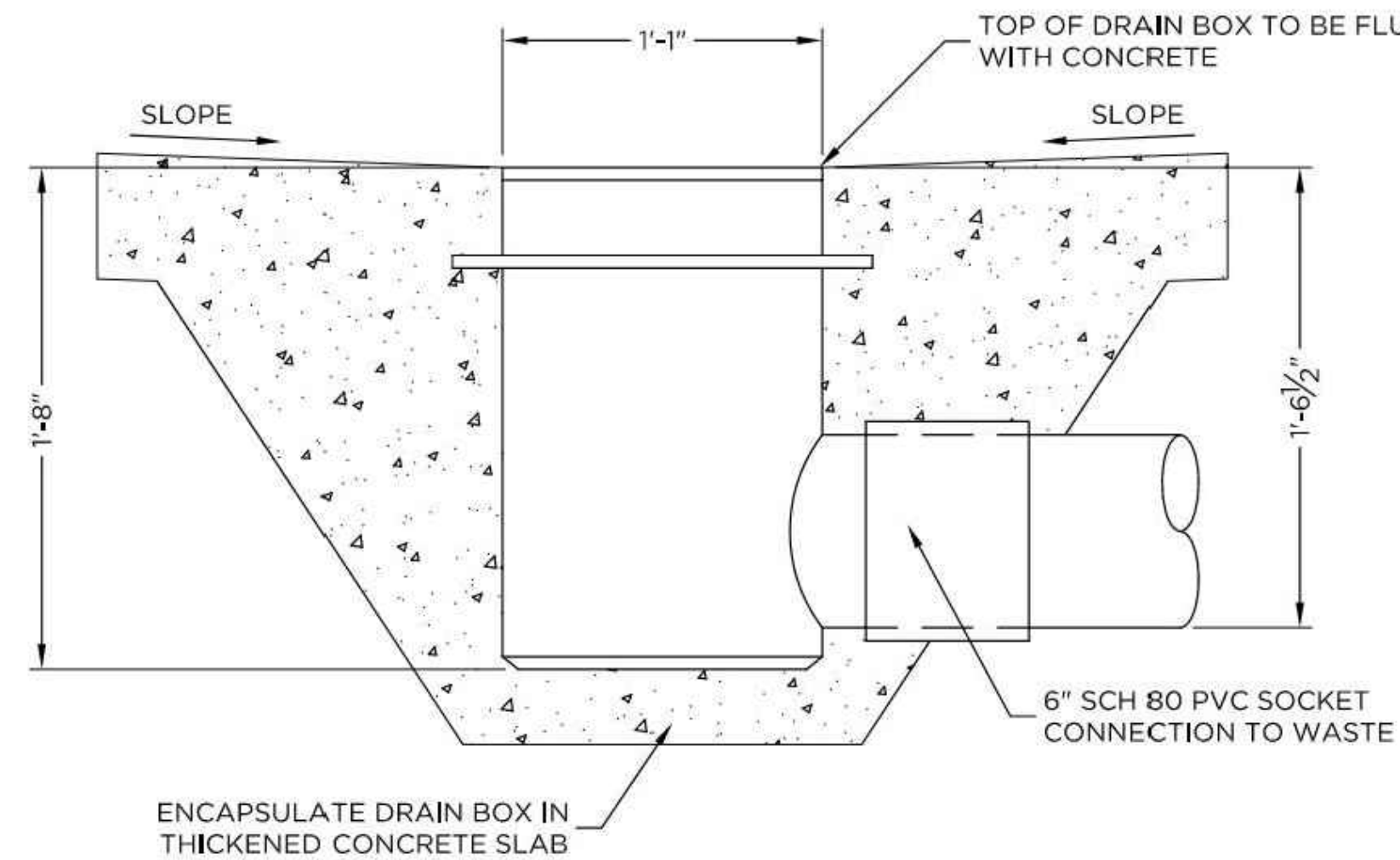
Top View



Single Port Drain Box Data:

Max 120 gpm Gravity Flow Per Unit

Note:
-Above Information is preliminary. Exact number of collector boxes needed for splash pad design based on total feature flow rate, size of splash pad, drainage needs for splash pad layout, and elevation/distance of collector box(s) to waste.



Drain Box:

Model No.	Max. Gravity Flow Rate: (Per Box)
DB-120-6	120 gpm

Note:
-120gpm MAXIMUM drainage is based on a 1/4" per foot slope from 6" collector box drainage line to waste.



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SINGLE PORT DRAIN BOX

P.J.
DRAWN BY

1 1/2"=1'-0"
SCALE

2/13/18
DATE

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1 ELEMENTS FOR THE SPLASHPAD

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CITY OF WINDSOR HEIGHTS, IOWA

2023 COLBY PARK IMPROVEMENTS

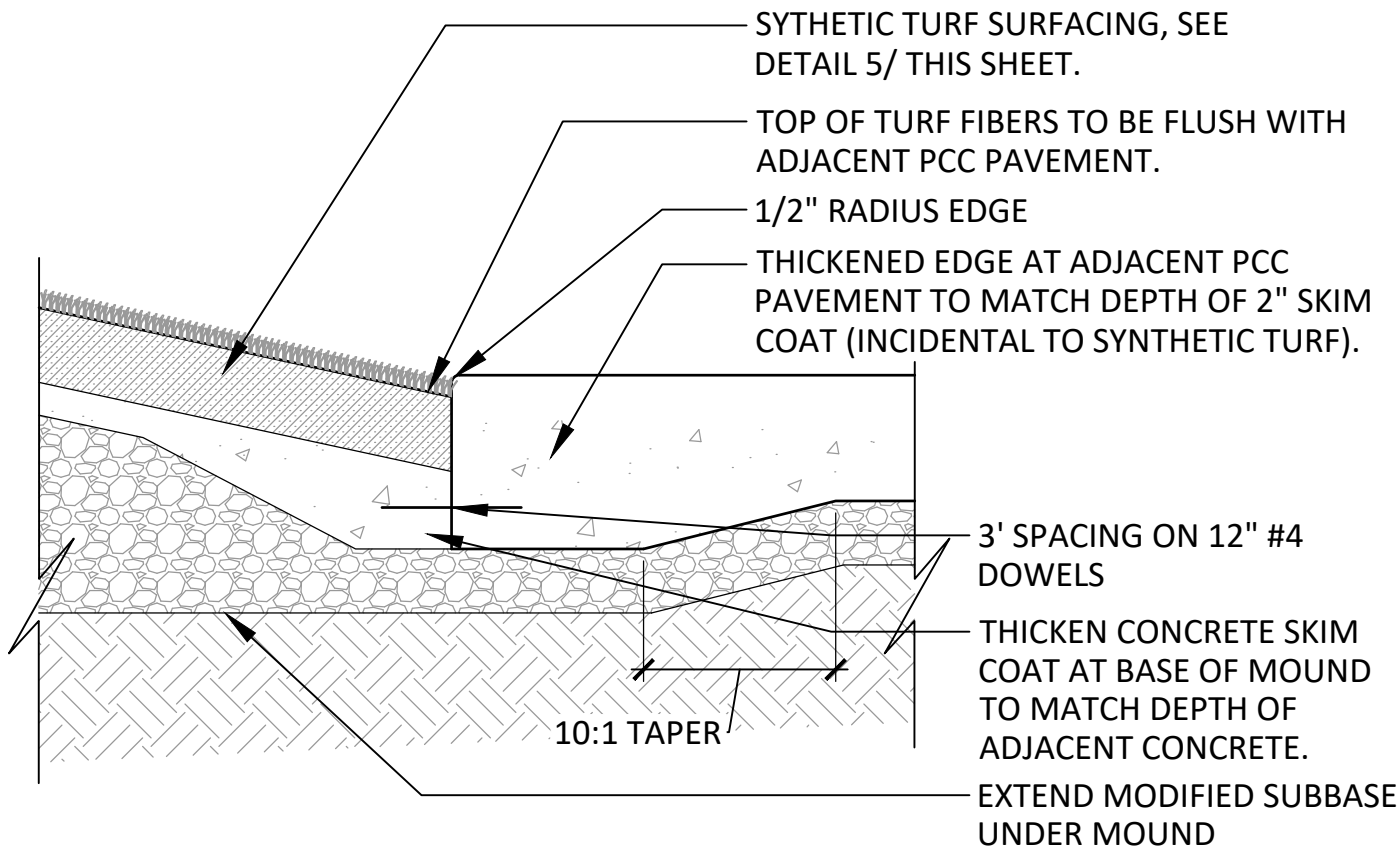
TYPICAL SECTIONS

SHEET

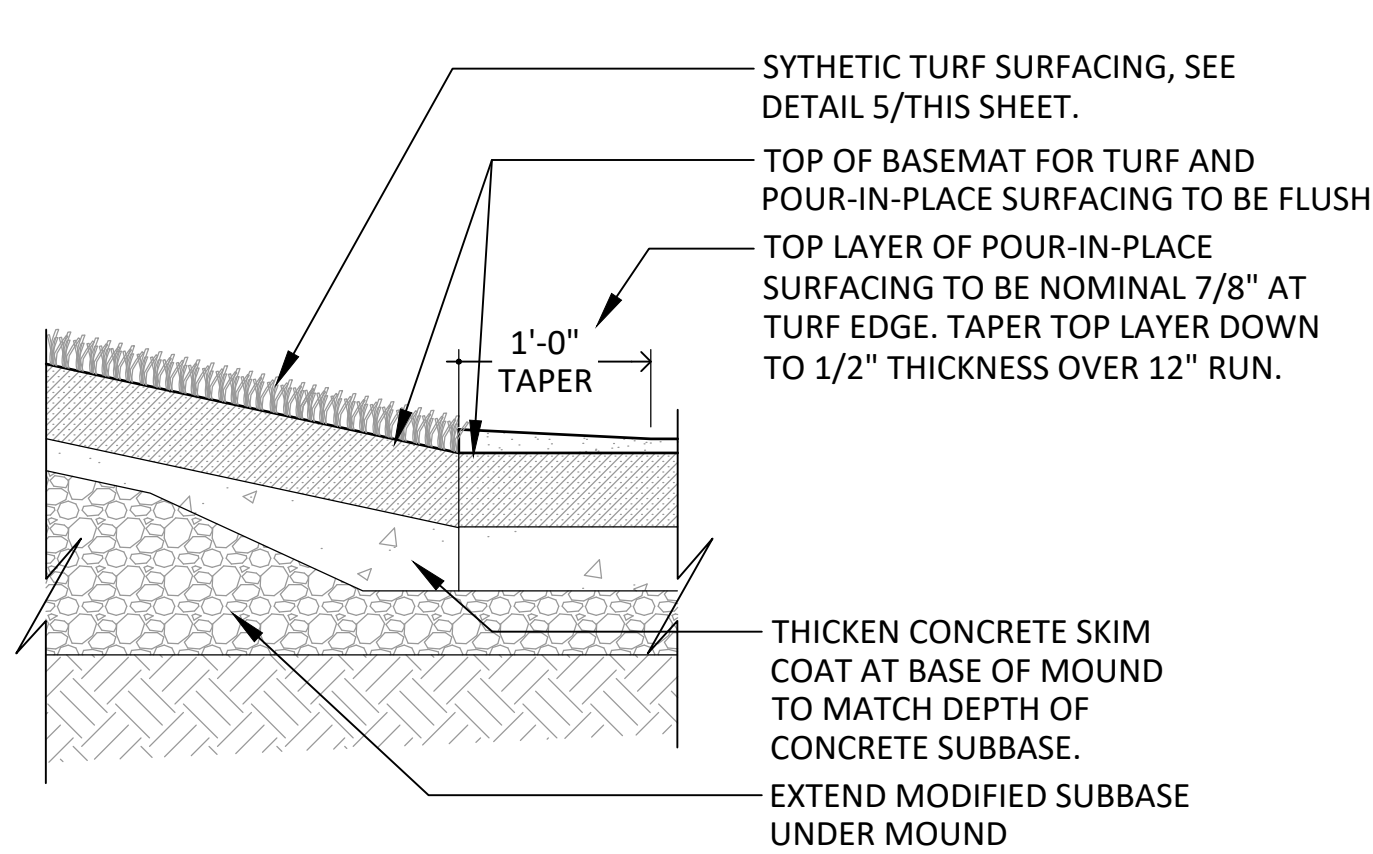
B.05

POURED-IN-PLACE PLAYGROUND SURFACING NOTES:

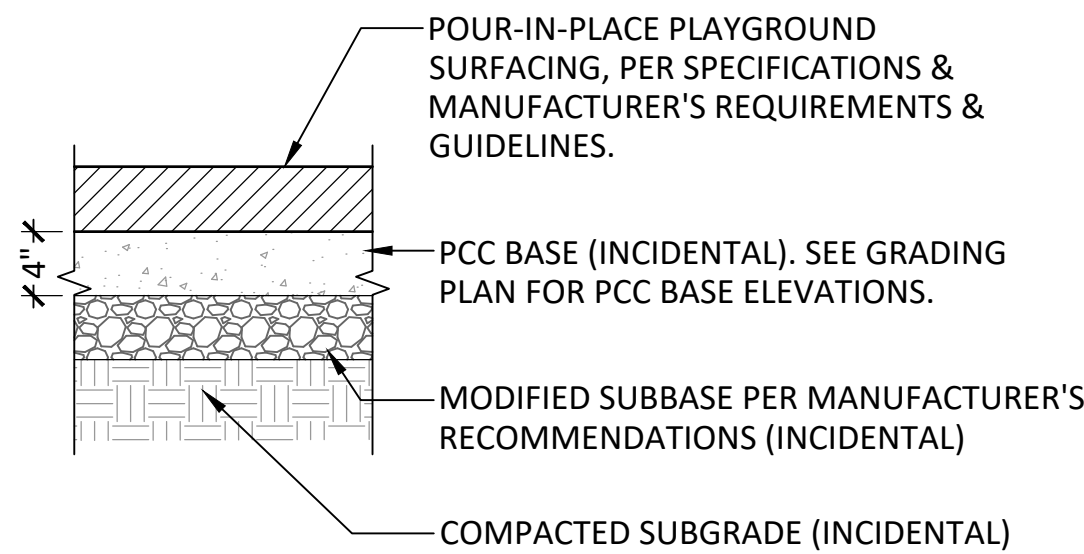
- A. MANUFACTURER: SURFACE AMERICA
CONTACT: DIANE WITT, OUTDOOR RECREATION PRODUCTS
WEST DES MOINES, IOWA
515-802-9861
DIANE@OUTDOORREC.NET
- B. PLAYGROUND SURFACING:
- PLAYBOUND - POURED-IN-PLACE SURFACING
- ALIPHATIC SYSTEM (EXTREME 10 WARRANTY)
- FIVE (5) COLOR VARIATIONS, PATTERN TBD; NO MORE THAN 25% OF PATTERN TO BE MANUFACTURER'S PREMIUM COLORS
- COLOR MIX RATIO: 50% COLOR, 50% BLACK.
- MINIMUM SURFACING DEPTH: 5 1/2" (CONTRACTOR TO VERIFY WITH MANUFACTURER)
- C. ALL COLORS AND AVAILABLE OPTIONS TO BE SUBMITTED TO OWNER FOR APPROVAL.
- D. PROVIDE SHOP DRAWINGS FOR APPROVAL. MANUFACTURER TO CONFIRM SURFACING DEPTH BASED ON SPECIFIED PLAYGROUND LAYOUT.
- E. SURFACING, CONCRETE BASE AND AGGREGATE SUBBASE TO BE INSTALLED PER MANUFACTURER SPECIFICATIONS



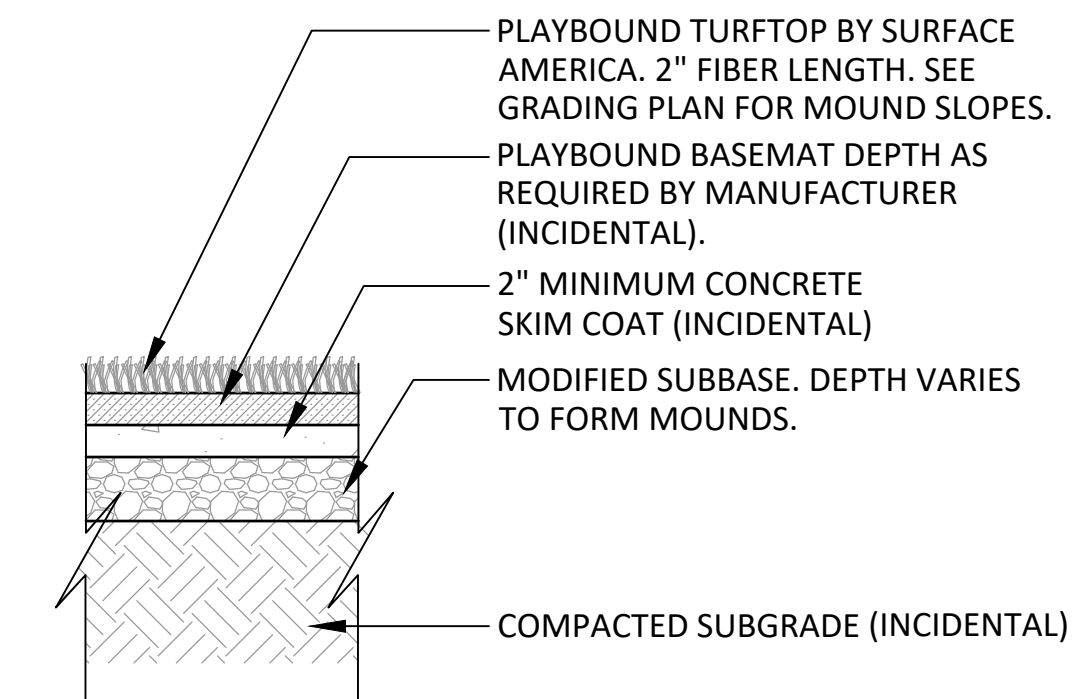
2 SYNTHETIC TURF AT CONCRETE EDGE
SCALE: N.T.S.



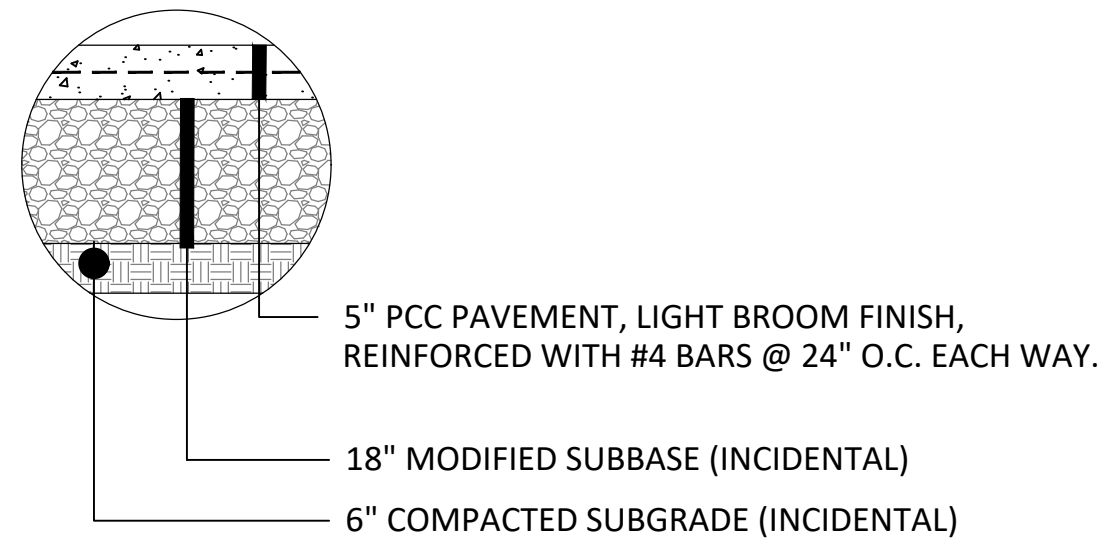
3 SYNTHETIC TURF AT POUR-IN-PLACE SURFACING EDGE
SCALE: N.T.S.



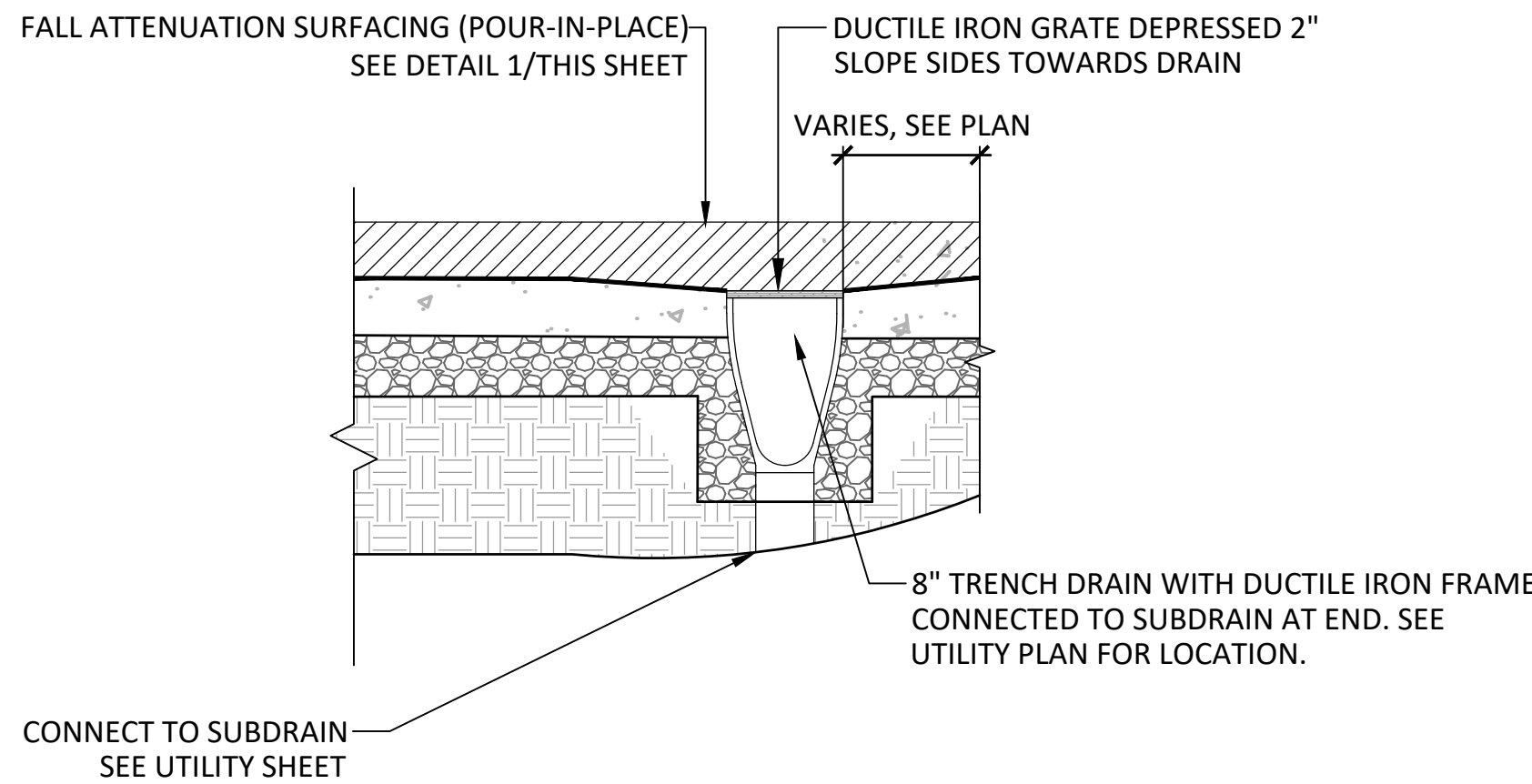
1 FALL ATTENUATION SURFACING (POUR-IN-PLACE)
SCALE: N.T.S.



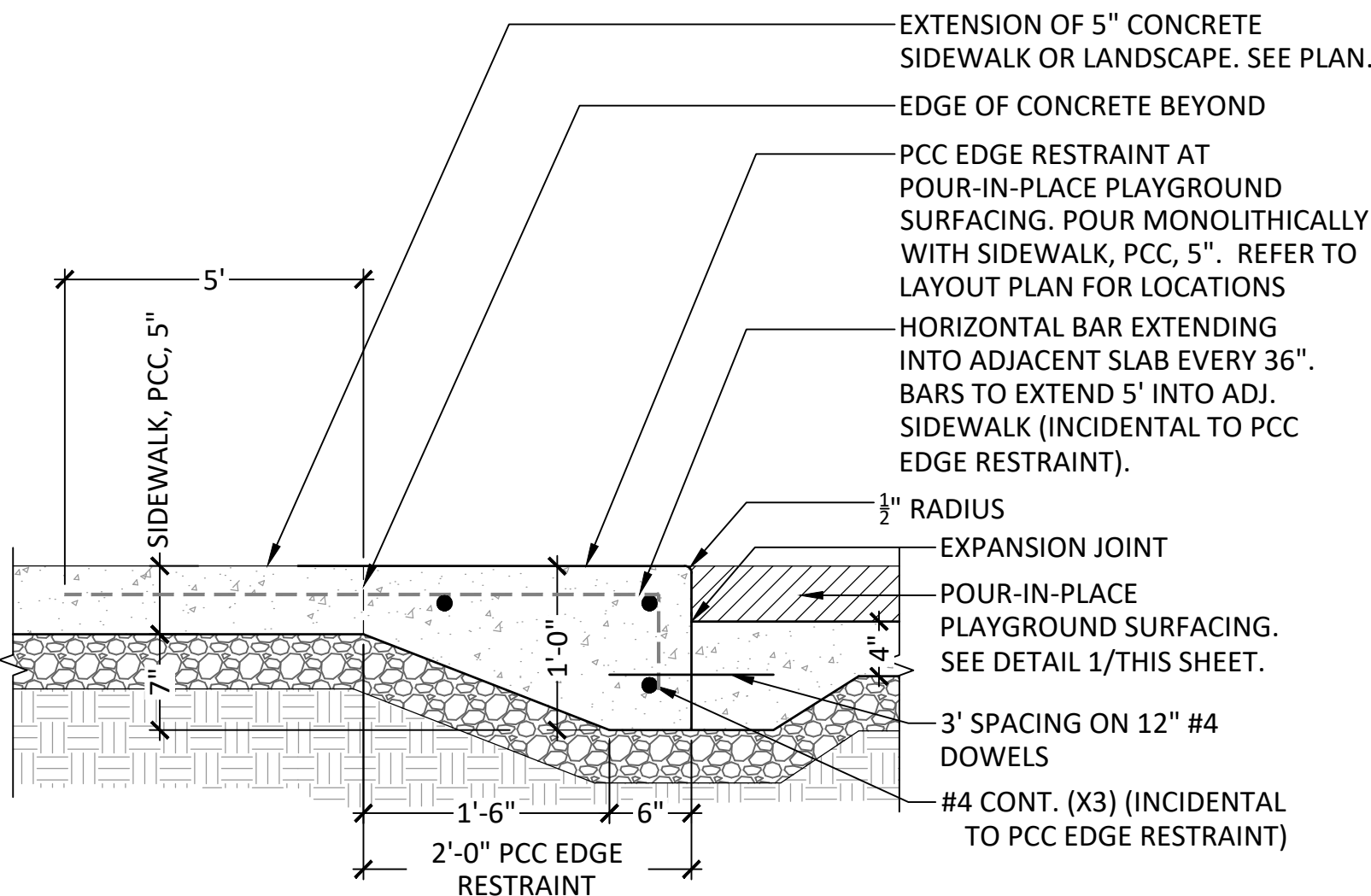
4 FALL ATTENUATION SURFACING (SYNTHETIC TURF)
SCALE: N.T.S.



5 PAVEMENT, PCC, 5" REINFORCED (SPASH PAD)
SCALE: N.T.S.

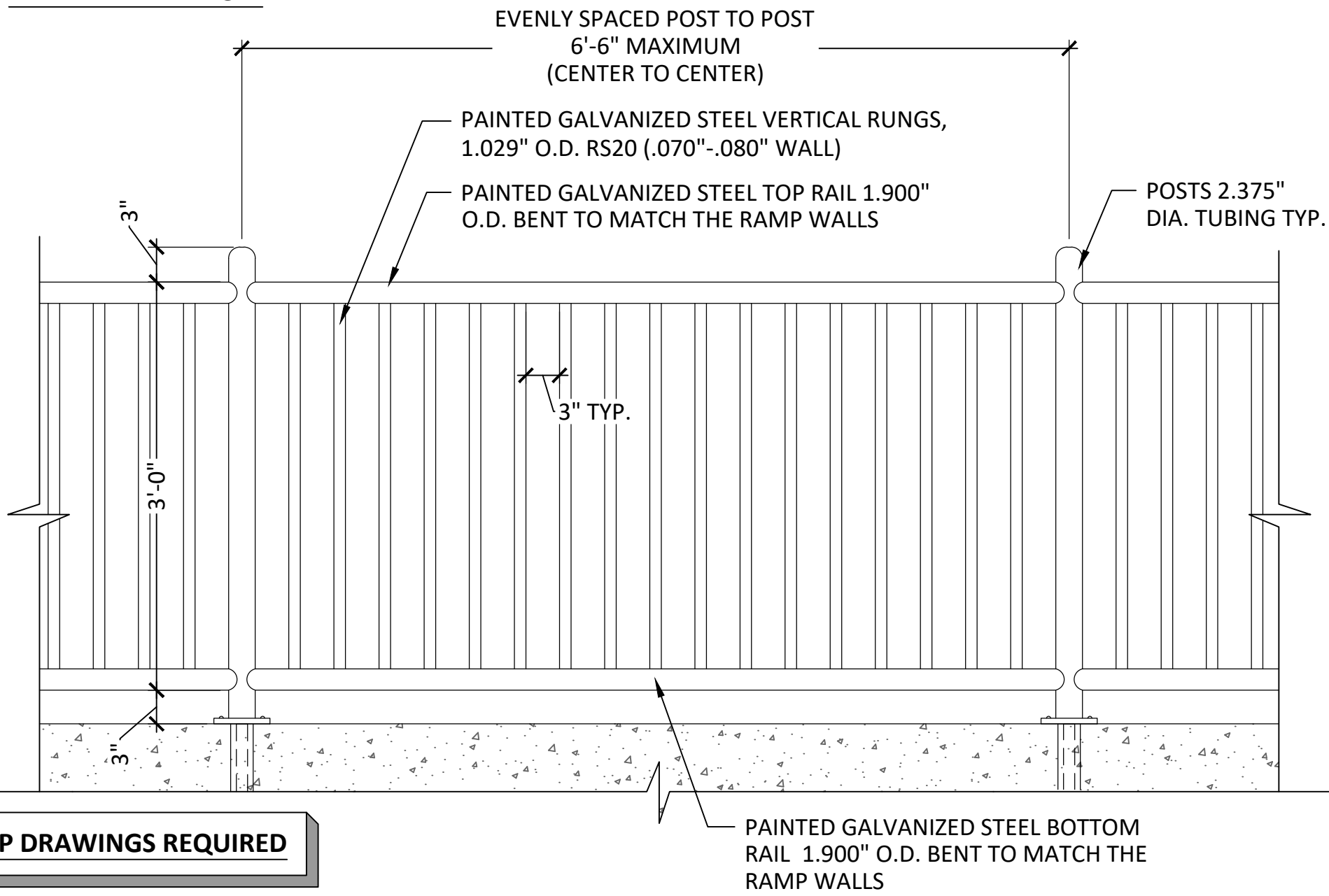


6 LINEAR TRENCH DRAIN
SCALE: N.T.S.



7 PCC EDGE RESTRAINT AT PLAYGROUND SURFACING
SCALE: N.T.S.

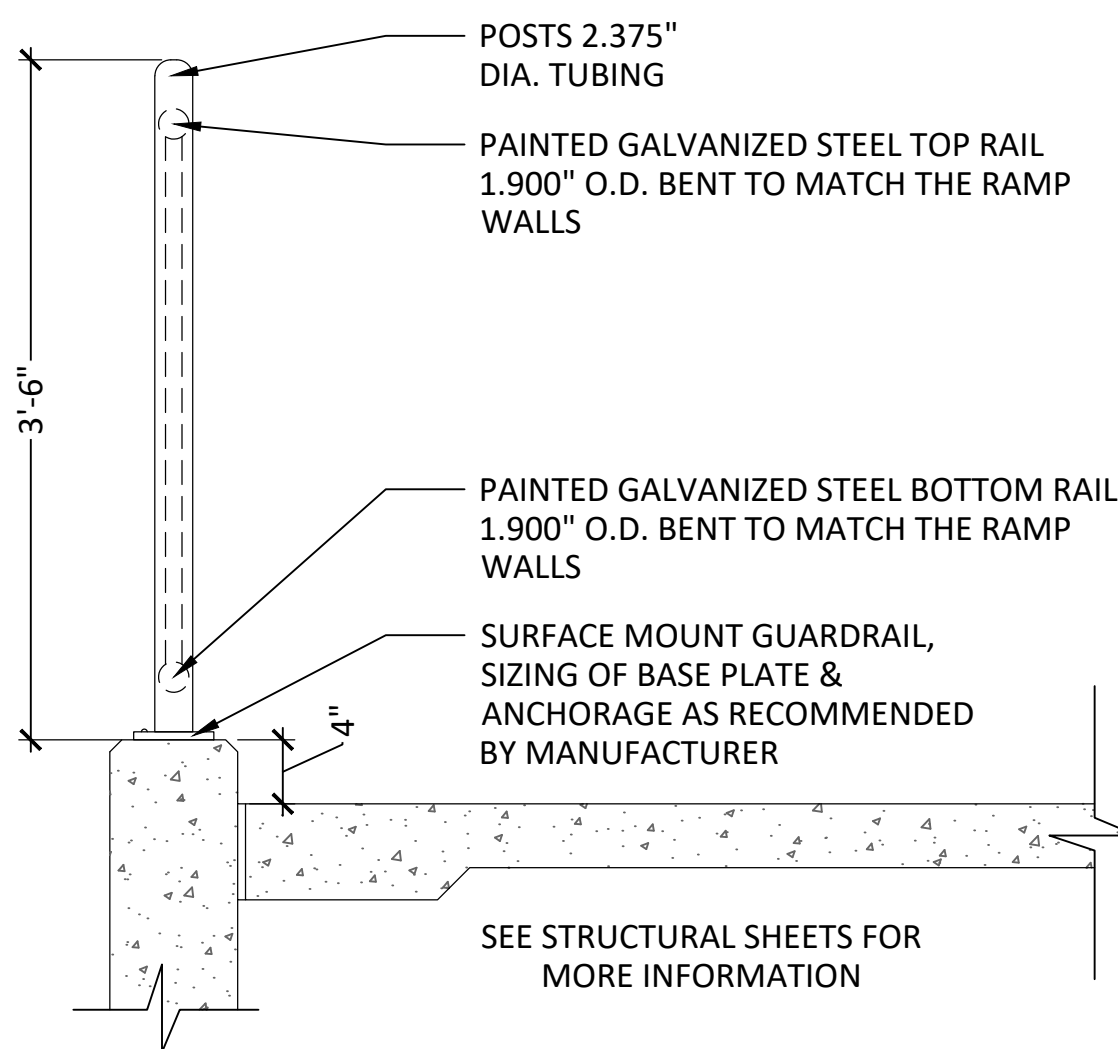
RAIL ELEVATION



SHOP DRAWINGS REQUIRED

8 PLAYGROUND GUARDRAILS (ELEVATION)
SCALE: N.T.S.

RAIL SECTION

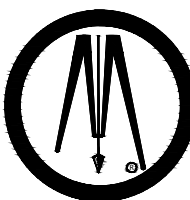


- GUARDRAILS/HANDRAILS:
1. MANUFACTURER: LANDSCAPE STRUCTURES
 2. FINISH: PROSHIELD BY LANDSCAPE STRUCTURES
 3. COLOR: TO BE SELECTED FROM MANUFACTURER'S STANDARD COLORS.
 4. MOUNTING: SURFACE MOUNT

OR APPROVED EQUAL
CONTACT: DIANE WITT
402-289-0400
diane@oudoorrec.net
outdoorrecreationproducts.com

SHOP DRAWINGS REQUIRED

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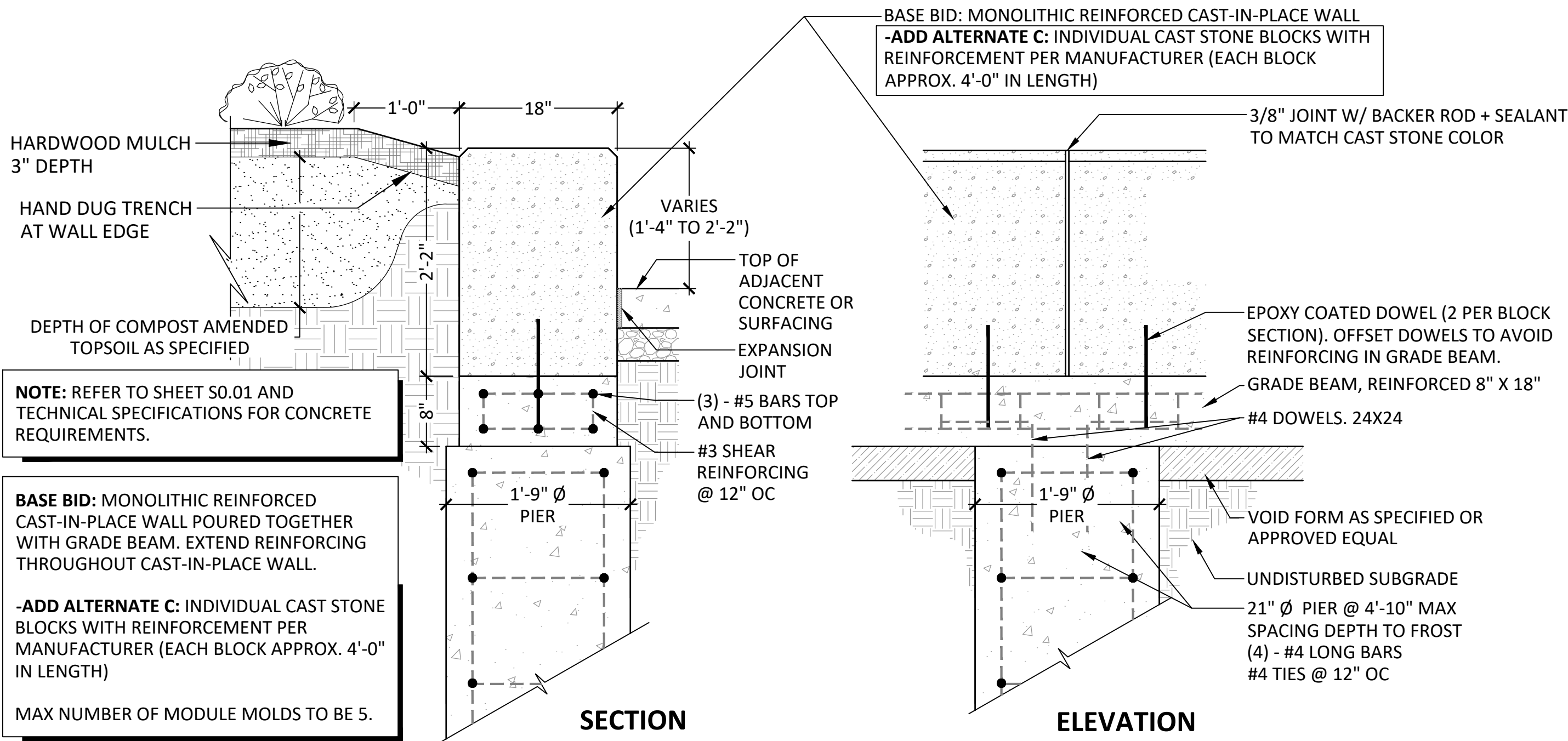
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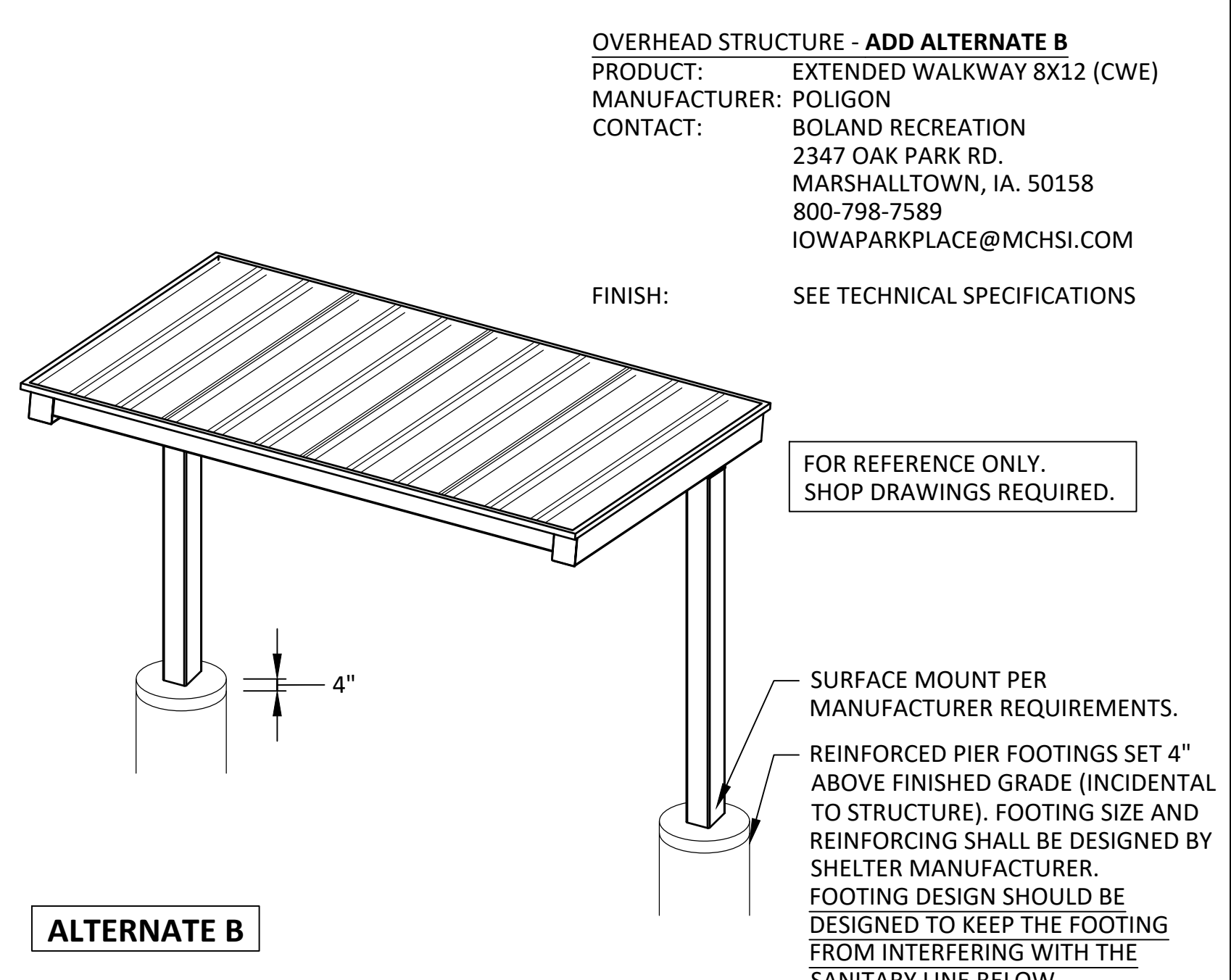


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CHECKED CB
CLIENT PROJ. NO. 076.128908

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2023 COLBY PARK IMPROVEMENTS
TYPICAL DETAILS

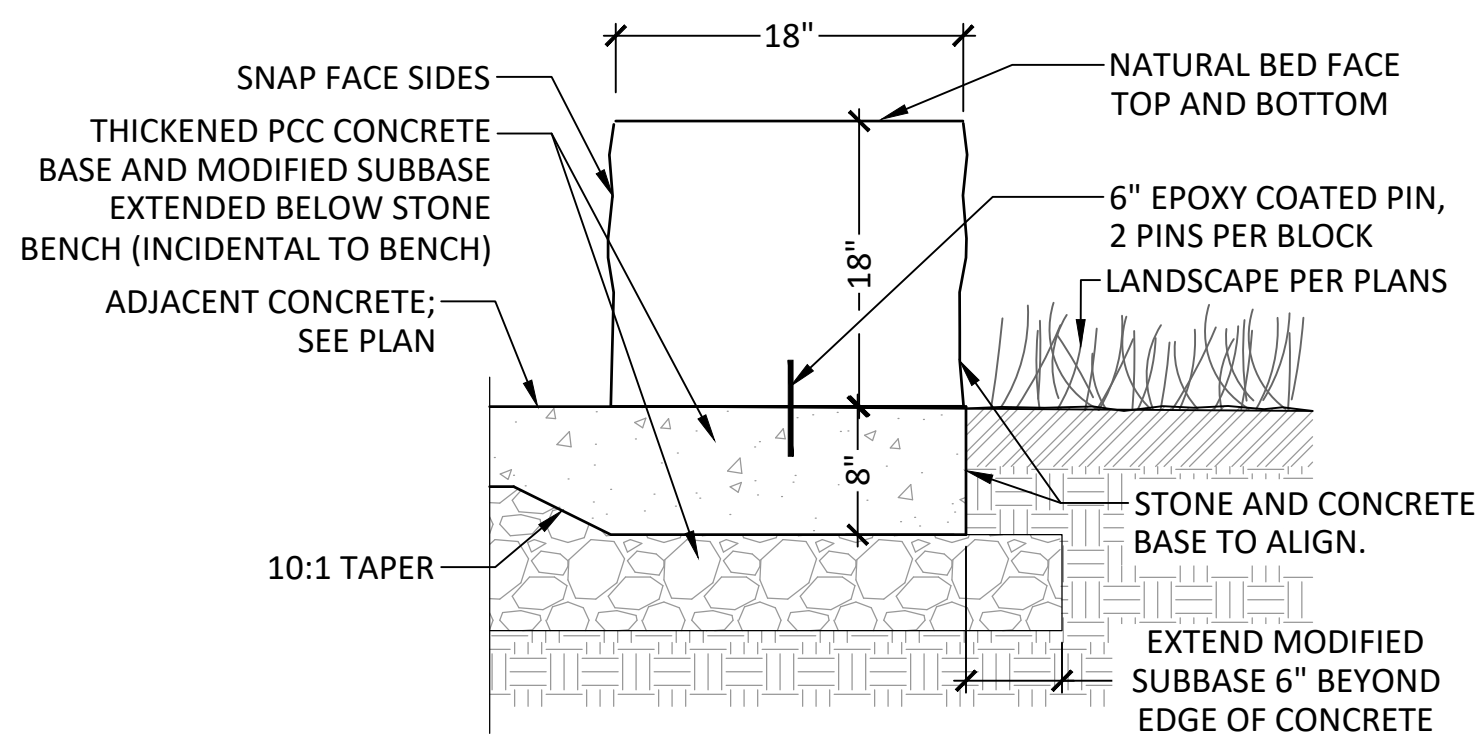


1 CAST STONE RETAINING WALL ON CONCRETE GRADE BEAM
SCALE: N.T.S.



2 OVERHEAD STRUCTURE - ADD ALTERNATE B
SCALE: N.T.S.

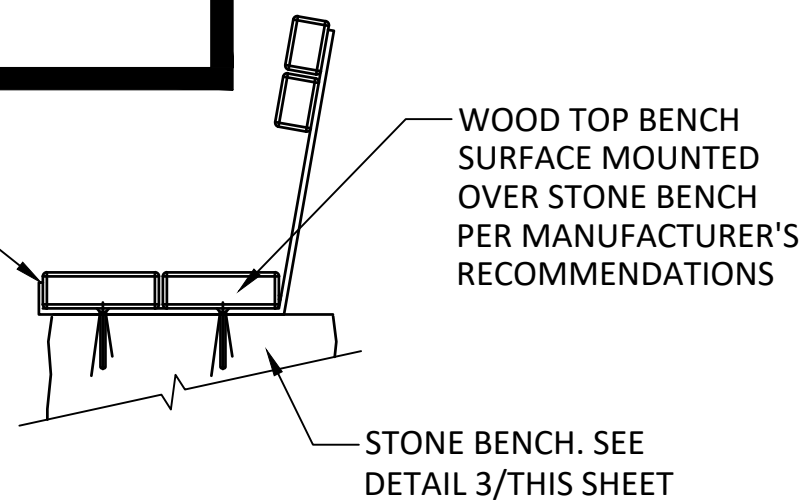
PRODUCT CONTACT: IOWA LANDSCAPE SUPPLY
HEIGHT: 18"
WIDTH: 18"
LENGTH: 72"
COLOR/TYPE: LARGER IOWA BUFF WALLSTONE (PER IOWA LANDSCAPE SUPPLY WEBSITE)
SUBMIT PRODUCT INFORMATION (INCLUDING PHYSICAL SAMPLES AND SOURCE) FOR REVIEW AND APPROVAL BY OWNER OR OWNER'S REP.



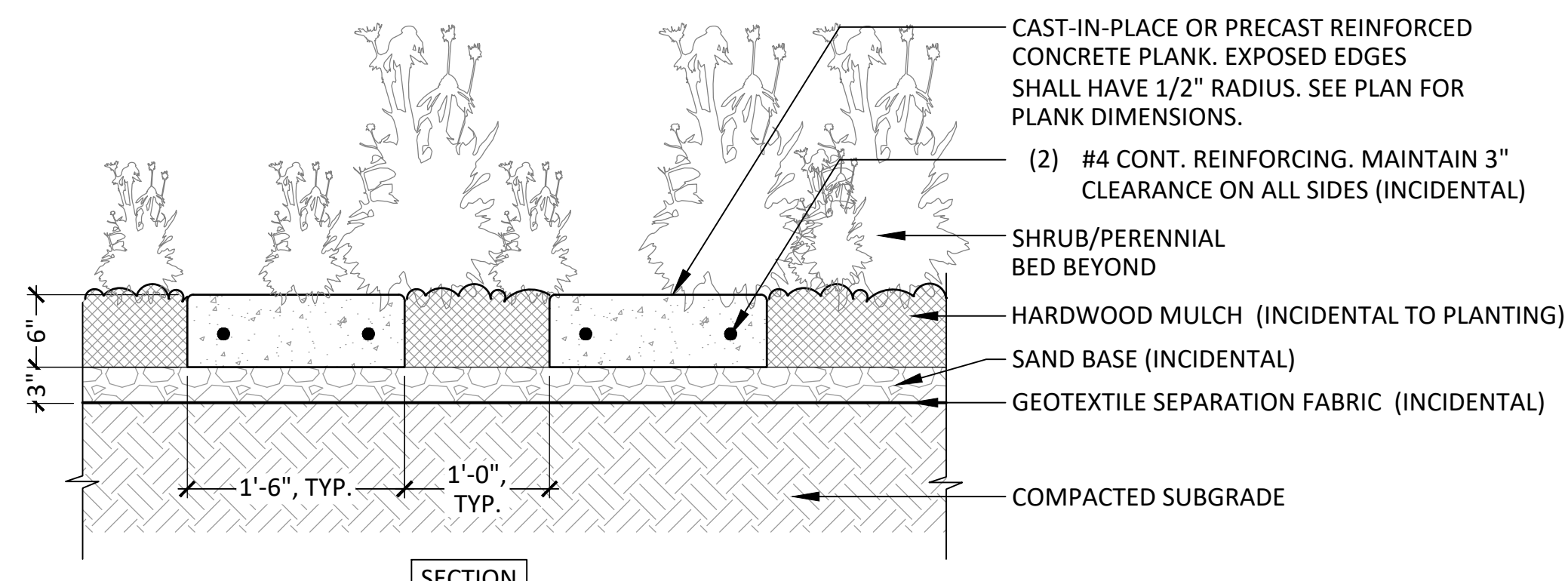
3 STONE BLOCK BENCH - SIDE VIEW
SCALE: N.T.S.

WOOD TOP BENCH:
• CENTRAL PARK 2030 WALL TOP BY TIMBERFORM
CONTACT: TIMBERFORM
PH: 1-800-547-1940
• CENTRAL PARK 2030 WALL TOP BENCH
• BENCH LENGTH: 5'-10"
• BENCH WIDTH: 1'-6"
• MATERIAL: DOUGLAS FIR WOOD (TO BE TREATED WITH CLEAR WOOD SEALER AS APPROVED BY MANUFACTURER)
• STRAP COLOR: BLACK
3. OR APPROVED EQUAL

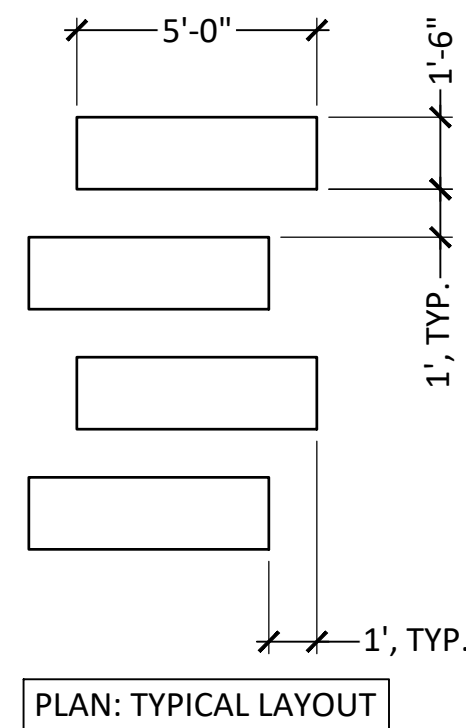
WOOD BENCH TO BE OFFSET TO FRONT EDGE OF STONE.



4 BENCH (WOOD) ON STONE BLOCK BENCH - SIDE VIEW
SCALE: N.T.S.



5 CONCRETE STEPPING PLANKS
SCALE: N.T.S.



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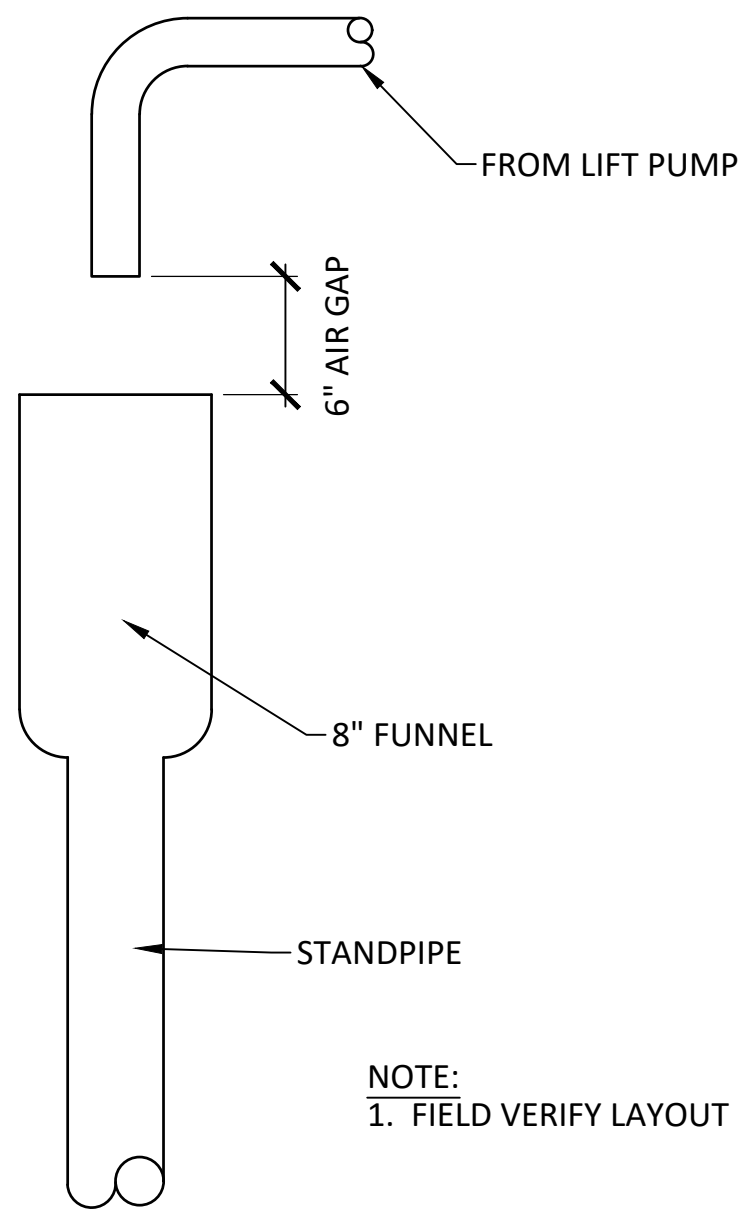


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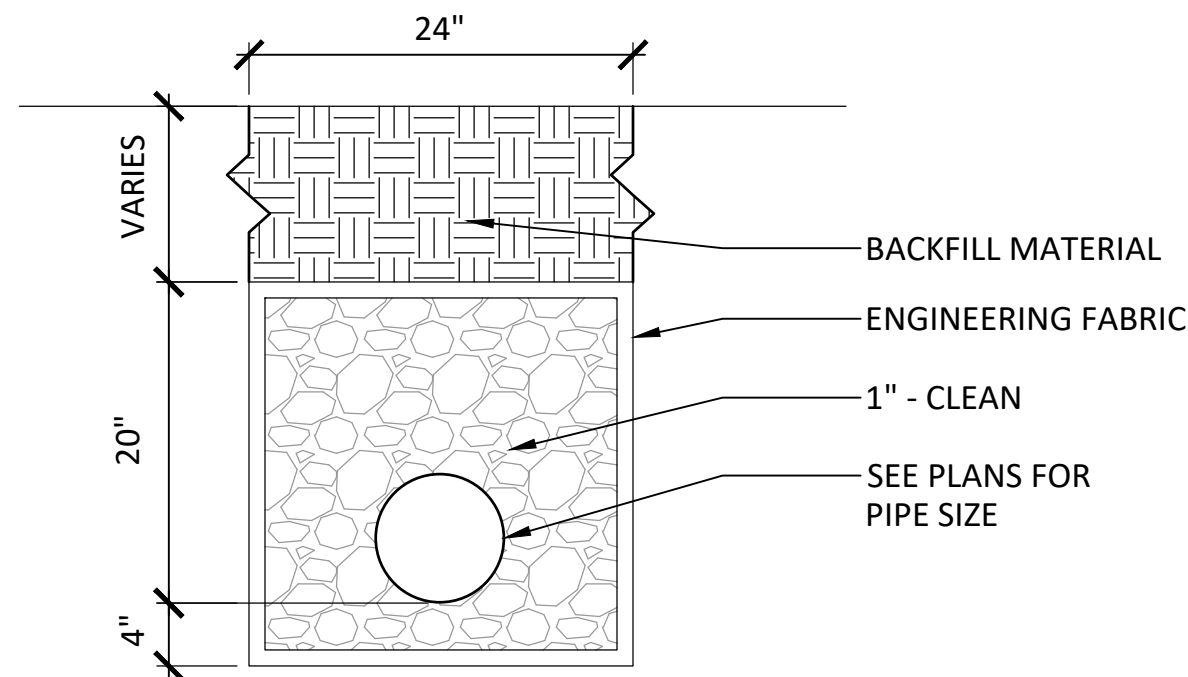


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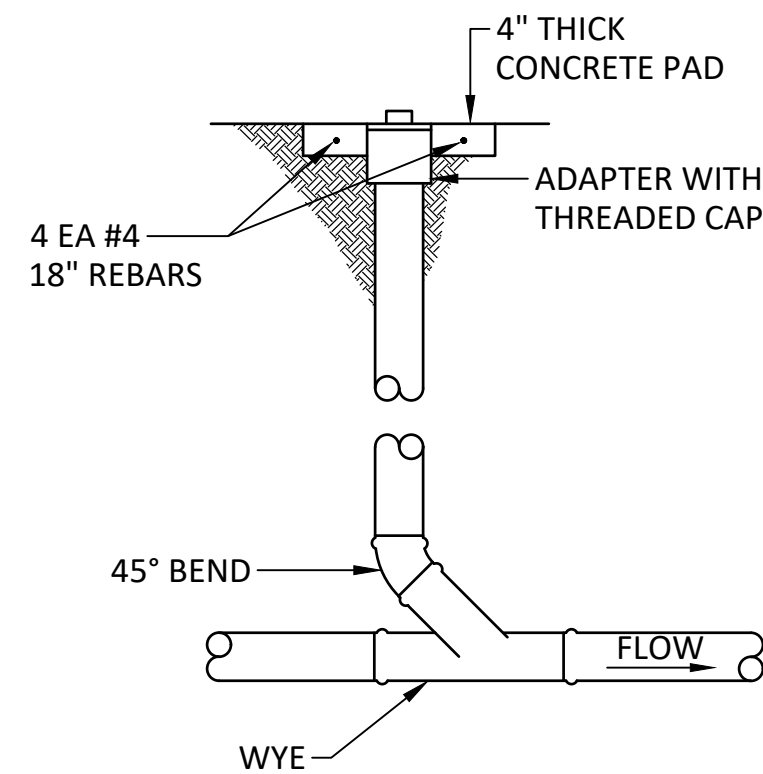
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2023 COLBY PARK IMPROVEMENTS
TYPICAL DETAILS



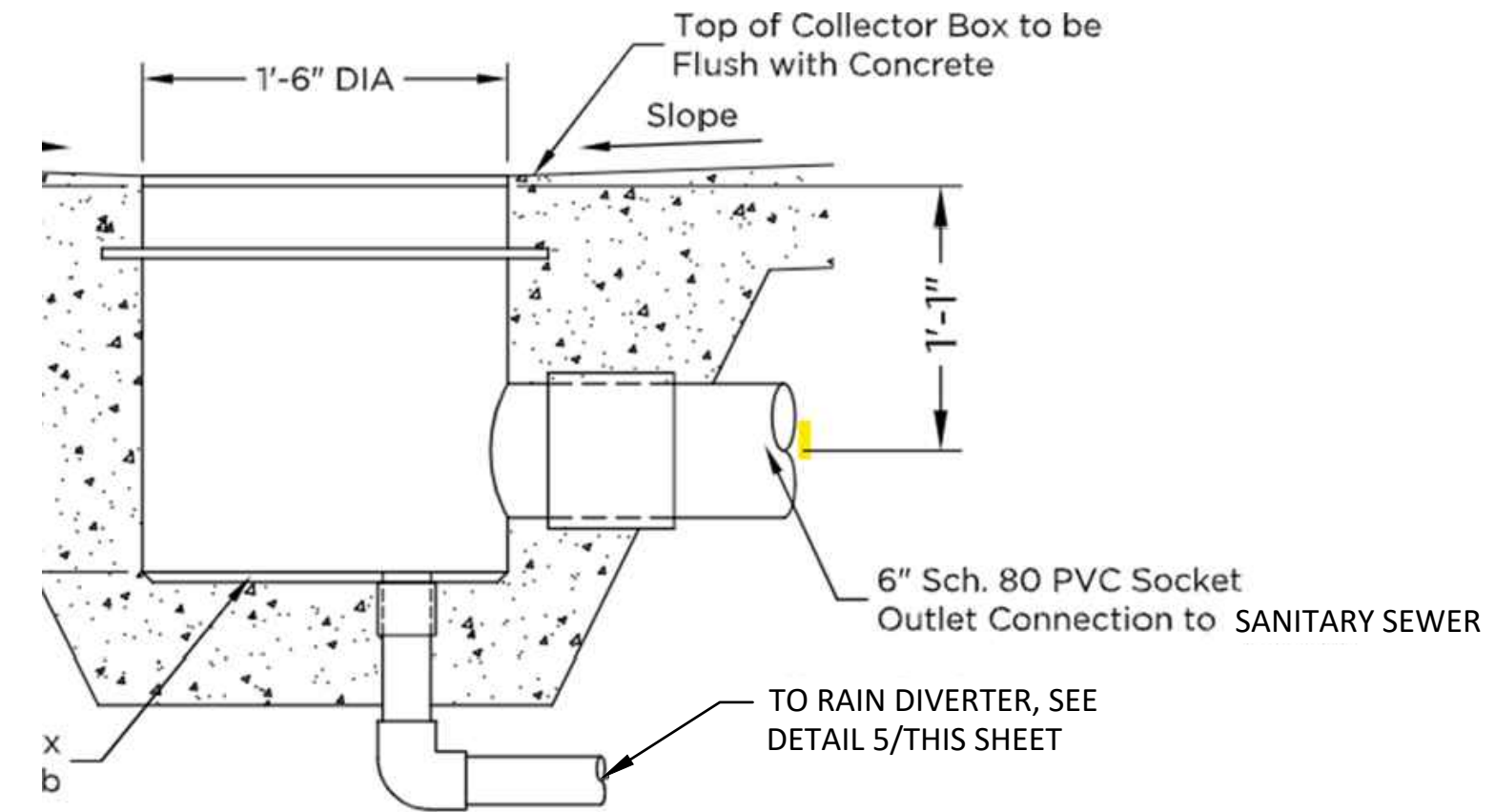
1 BACKWASH STANDPIPE
SCALE: N.T.S.



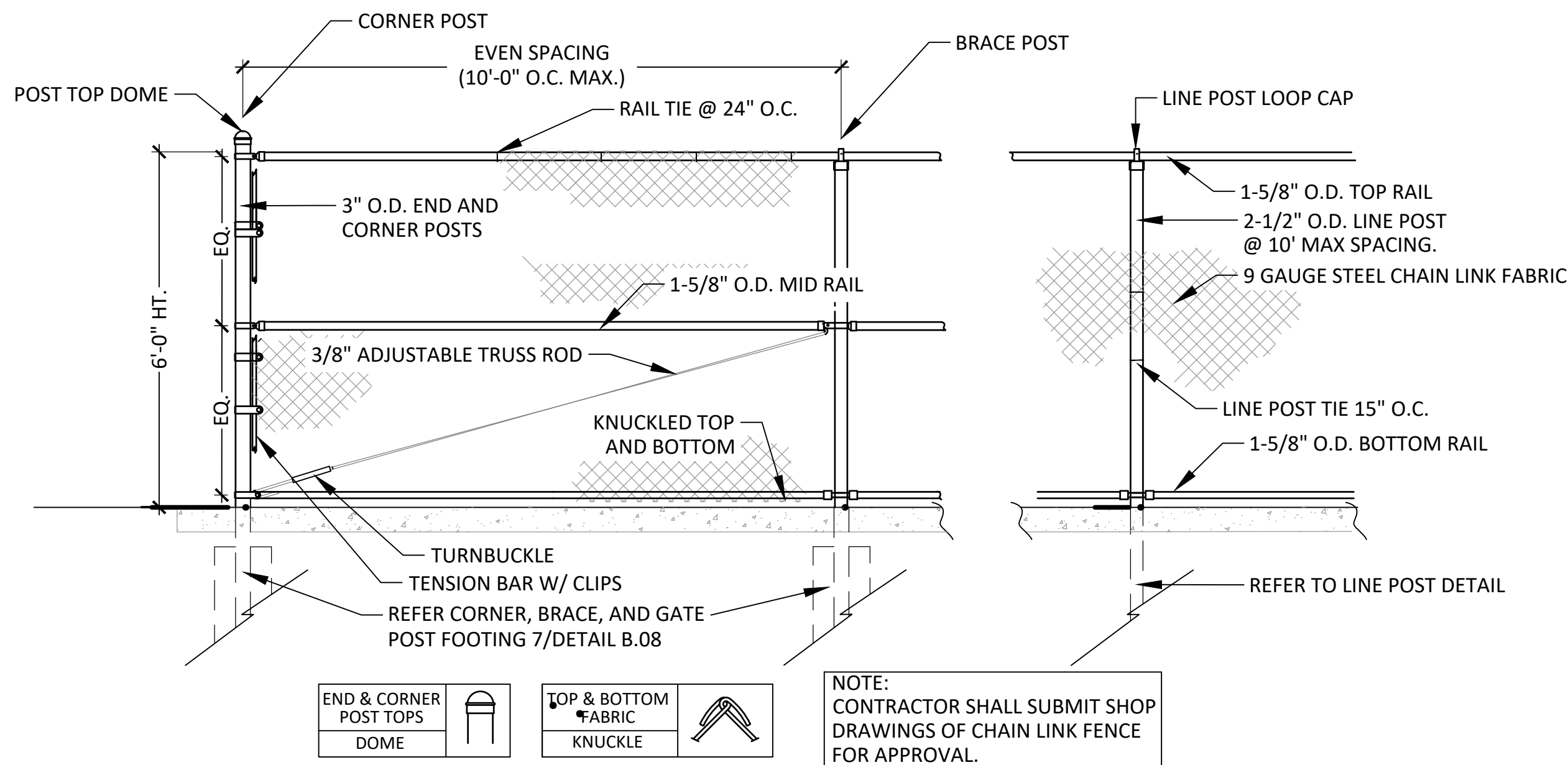
2 DRAIN TILE DETAIL
SCALE: N.T.S.



3 CLEANOUT
SCALE: N.T.S.



4 CATCH BASIN (INCIDENTAL TO SPLASHPAD)
SCALE: N.T.S.



6 6' HT. FENCE
SCALE: N.T.S.

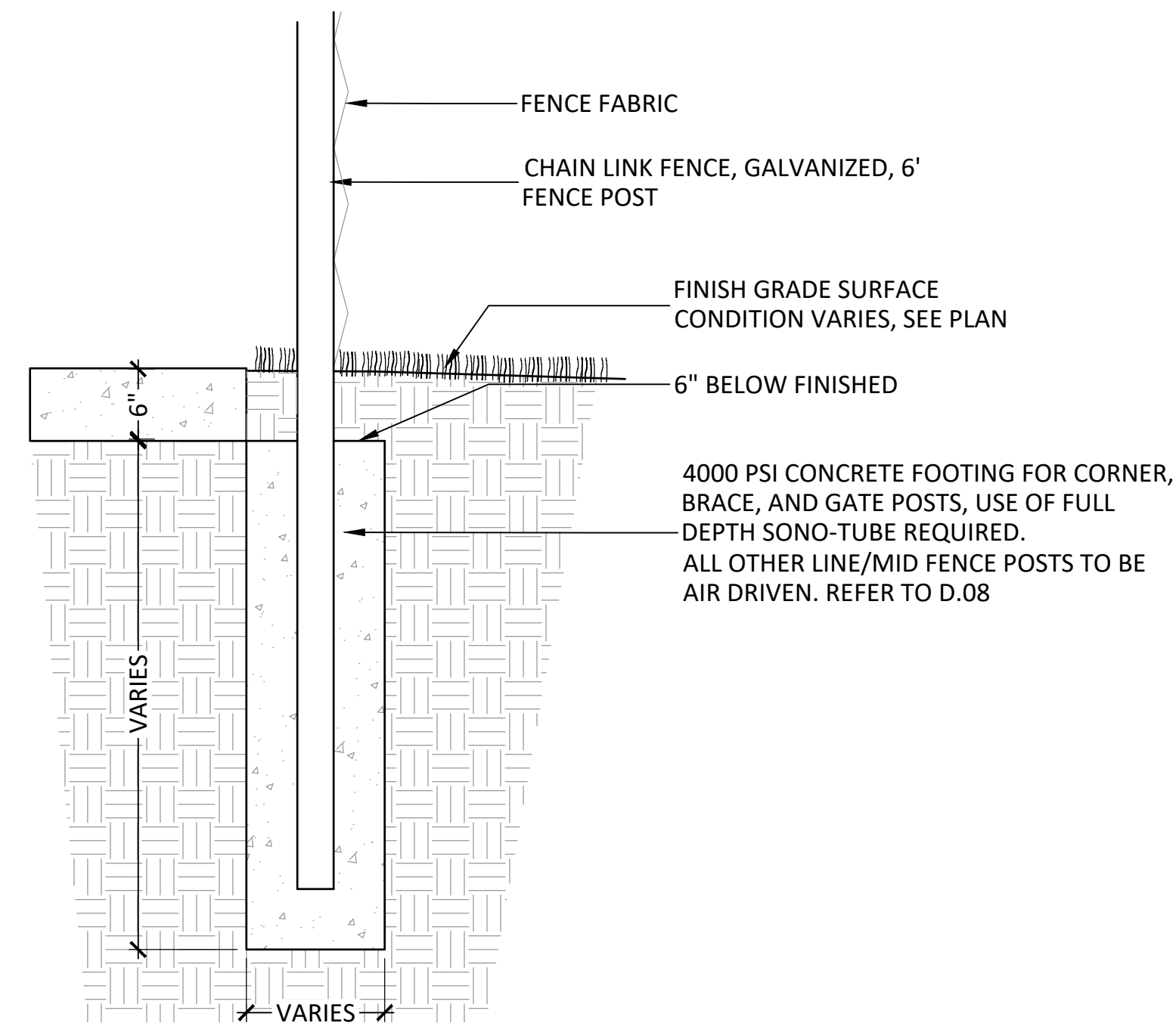
FENCE INFORMATION

MANUFACTURER:
AMERICA'S FENCE STORE
CONTACT: SCOTT MATTIS
EMAIL: dsm1@americafence.com
ADDRESS: 6300 NW BEAVER DR JOHNSTON, IA 50131
PHONE: 515-265-6100

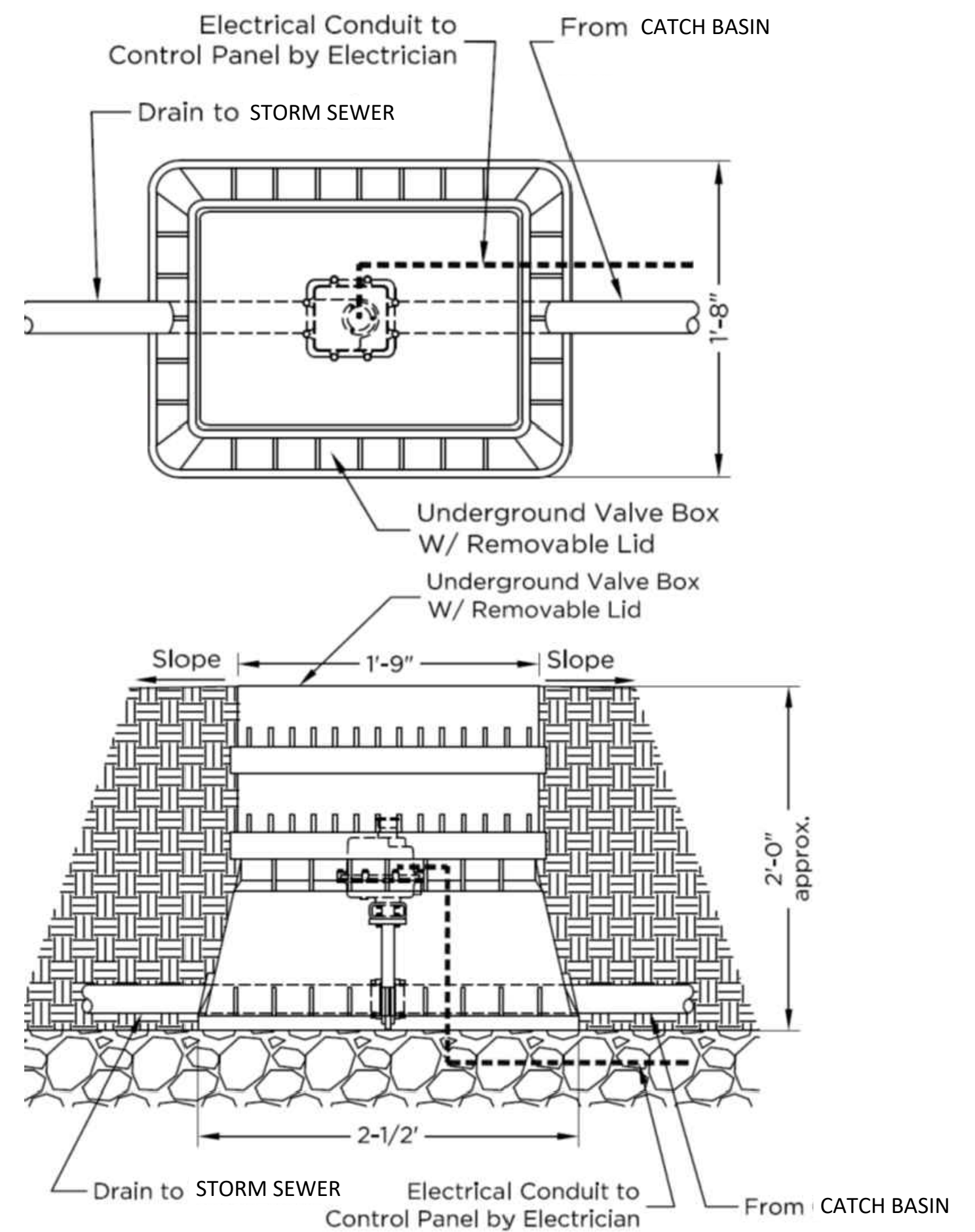
FENCE

- CHAIN LINK FENCE, GALVANIZED, 6' COMMERCIAL CHAIN LINK FENCE TO MEET ASTM F668 FOR FINISHES FOR COATED FABRIC. CONTRACTOR TO PROVIDE SHOP DRAWINGS, PRODUCT MATERIALS, AND CUT SHEETS.
- CHAIN LINK FENCE, GALVANIZED, 6' FABRIC FITTINGS & FRAMEWORK
- EXPOSED HARDWARE USED ON POWDER COATED ELEMENTS TO BE PAINTED TO MATCH & CONTRACTOR RESPONSIBLE FOR ALL HARDWARE REQUIRED FOR INSTALLATION COMPLETE.
- CONTRACTOR RESPONSIBLE FOR STRUCTURAL INTEGRITY OF FENCE AND SHALL AD TENSION RODS AS REQUIRED FOR STRUCTURAL STABILITY. DETAILS SHOWN IN THE BID SET ARE FOR AESTHETICS AND DESIGN GUIDANCE ONLY. NOTIFY OWNER AND ENGINEER IF FENCE DESIGN AND DETAILING REQUIRE ADJUSTMENTS TO ACHIEVE ADEQUATE STRUCTURAL STABILITY.

OR APPROVED EQUAL



7 CORNER AND BRACE POSTS AND FOOTINGS
SCALE: N.T.S.



5 RAIN DIVERTER (INCIDENTAL TO SPLASHPAD)
SCALE: N.T.S.

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CITY OF WINDSOR HEIGHTS, IOWA
2023 COLBY PARK IMPROVEMENTS
TYPICAL DETAILS

GENERAL NOTES:

1. TYPICAL STRUCTURAL DETAILS AND NOTES SHALL APPLY UNLESS NOTED OTHERWISE ON THE DRAWINGS.
2. EXAMINE SITE AND DRAWINGS TO DETERMINE LOCATIONS AND DIMENSIONS OF UTILITIES, AND SITE IMPROVEMENTS.
3. BEFORE CONSTRUCTION FABRICATION AND ERECTION OF ANY MATERIALS, CONTRACTOR SHALL FIELD VERIFY ALL EXISTING ELEVATIONS, DIMENSIONS AND CONDITIONS AS SHOWN ON THE DRAWINGS AND REPORT DISCREPANCIES TO THE ENGINEER AT ONCE FOR RESOLUTION.
4. ALL DIMENSIONS, LOCATIONS, ELEVATIONS AND CONDITIONS OF EXISTING STRUCTURES SHOWN ON THE CONTRACT DRAWINGS SHALL BE FIELD VERIFIED BY THE CONTRACTOR.
5. THE STRUCTURAL DESIGN IS BASED ONLY ON THE STRUCTURE IN ITS COMPLETED STATE. CONTRACTORS AND THEIR SUBCONTRACTORS SHALL TAKE WHATEVER PRECAUTIONS ARE NECESSARY TO WITHSTAND ALL HORIZONTAL AND VERTICAL LOADING THAT MAY BE ENCOUNTERED DURING THE CONSTRUCTION PROCESS PRIOR TO THE COMPLETION OF THE STRUCTURE.
6. WRITTEN DISTANCES & ELEVATIONS SHALL GOVERN OVER SCALED DISTANCES & ELEVATIONS.
7. ELEVATIONS ARE BASED ON THE BENCH MARKS NOTED ON THE DRAWINGS.

MATERIAL NOTES:

REINFORCED CONCRETE:

CONCRETE:

4000 PSI @ 28 DAYS

REINFORCEMENT BARS:
DEFORMED BARS

ASTM A615, GRADE 60

DESIGN CRITERIA & LOADING NOTES:

1. CODE: 2018 INTERNATIONAL BUILDING CODE (IBC)
2. DESIGN LOADING

DEAD LOADS (D)
MATERIALS

CALCULATED

LIVE LOADS (L)

WALKWAY & LANDINGS

60 PSF

LATERAL EARTH PRESSURE LOADS (H)

BACKFILL FRICTION ANGLE

30 DEGREES (ASSUMED)

K_a

0.30

K_p

4.9

SOIL UNIT WEIGHT, MOIST

130 PCF (ASSUMED)

CONCRETE NOTES:

1. LAP SPLICES AND 90 DEGREE END HOOKS SHALL BE AS SHOWN BELOW UNLESS NOTED. WHEN BARS OF TWO DIFFERENT SIZES ARE SPLICED, THE LONGER LAP LENGTH SHALL APPLY.

F'c=4,000 PSI	SLAB, WALL, COLUMN		BEAM		90 DEGREE HOOK
	BAR LAP	TOP BAR	BAR LAP	TOP BAR	
#3	19 IN.	24 IN.	28 IN.	36 IN.	6 IN.
#4	25 IN.	32 IN.	37 IN.	48 IN.	8 IN.
#5	31 IN.	40 IN.	46 IN.	60 IN.	10 IN.

*TOP BAR LAP SPLICES ARE HORIZONTAL REINFORCEMENT PLACED SUCH THAT MORE THAN 12 IN. OF CONCRETE IS CAST IN THE MEMBER BELOW THE SPLICE

2. REINFORCING BARS SHALL HAVE THE FOLLOWING CONC. COVER UNLESS NOTED OTHERWISE.

FOOTINGS AND OTHER UNFORMED SURFACES

3"

CONCRETE EXPOSED TO EARTH, WEATHER OR FLUIDS

#6 BARS OR LARGER

2"

#5 BARS OR SMALLER

1-1/2"

CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND

BEAMS, COLUMNS, TIES, SPIRALS AND STIRRUPS

1-1/2"

SLABS, WALLS & JOISTS

3/4"

3. CONCRETE SHALL BE PLACED WITHOUT CONSTRUCTION JOINTS EXCEPT WHERE SPECIFICALLY SHOWN ON THE DRAWINGS OR AS APPROVED BY THE ENGINEER.
4. CAST-IN-PLACE CONCRETE SHALL NOT BE PLACED IN STANDING WATER, ON FROZEN SOIL OR ON FROZEN CONCRETE.
5. FOR LOCATIONS AND DIMENSIONS OF SLEEVES, CURB, OPENINGS AND DEPRESSIONS NOT SHOWN ON THE STRUCTURAL DRAWINGS, SEE ARCHITECTURAL, CIVIL/MECHANICAL, YARDWORK, PLUMBING, HVAC AND ELECTRICAL DRAWINGS. CONTRACTOR SHALL VERIFY AND COORDINATE REQUIREMENTS FOR AND LOCATION OF ABOVE ITEMS WHETHER SHOWN ON THE STRUCTURAL DRAWINGS OR NOT.
6. BEVEL ALL EXPOSED CORNERS OF CONCRETE 3/4" x 3/4".

EXCAVATION NOTES:

1. TEMPORARY GROUND CONTROL IS BY CONTRACTOR DESIGN.
2. CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL TEMPORARY SHEETING AND BRACING NECESSARY TO PROTECT PERSONNEL AND ADJACENT PROPERTY FROM INJURY OR DAMAGE DURING CONSTRUCTION OPERATION.
3. EXCAVATIONS OR TRENCHING WITHIN CLOSE PROXIMITY TO UNDERGROUND STRUCTURES, UTILITIES, OR UTILITY POLES WILL REQUIRE PROTECTION AND SUPPORT TO PREVENT DAMAGE OR INTERRUPTION TO SERVICE. THE COST TO PROVIDE THIS PROTECTION SHALL BE INCLUDED IN THE CONTRACTOR'S TOTAL BASE BID PRICE.

FOUNDATION & SOIL NOTES:

1. THE GEOTECHNICAL ENGINEER SHALL REVIEW AND APPROVE FOUNDATION BEARING SURFACES PRIOR TO THE PLACEMENT OF FOOTINGS OR FOUNDATION.
2. PROVIDE A MINIMUM OF 3'-6" OF SOIL COVER AT EXTERIOR WALL FOOTINGS.
3. REFER TO GEOTECHNICAL REPORT FOR BACKFILL REQUIREMENTS
4. PROTECT FOUNDATION SOILS FROM FREEZING DURING CONSTRUCTION.
5. PLACE FILL AND BACKFILL AND COMPACT TO FOLLOWING MAXIMUM STANDARD PROCTOR DENSITIES UNLESS NOTED OTHERWISE IN THE SPECIFICATIONS:

LOCATION

DENSITY

FILL BELOW FOOTINGS

98%

FILL BELOW SLABS ON GRADE

95%
6. FOUNDATION DESIGN IS BASED ON REQUIREMENTS OF GEOTECHNICAL EVALUATION
REPORT NO. 222114CPR
DATED: 11/2/2022
PREPARED BY: CONSTRUCTION MATERIALS TESTING (CMT)
7. SOIL BEARING PRESSURES:
ALLOWABLE SOIL BEARING PRESSURE: 3,000 PSF (AFTER BACKFILL OVER-EXCAVATION AND FILL CORRECTION)

INTERPRETATION OF CONFLICT NOTES:

1. SHOULD CONFLICT OCCUR IN THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL REQUEST INTERPRETATION BEFORE PROCEEDING WITH THE ASSOCIATED WORK. ALL SUCH REQUESTS SHALL FIRST BE PRECEDED BY A DILIGENT INVESTIGATION INTO THE CONTRACT DOCUMENTS. EVIDENCE OF SUCH INVESTIGATION SHALL BE COMBINED IN ALL REQUESTS FOR INTERPRETATIONS SUBMITTED.
2. IF THE CONTRACTOR FAILS TO MAKE SUCH A REQUEST, NO EXCUSE WILL THEREAFTER BE ENTERTAINED FOR FAILURE TO CARRY OUT THE WORK IN A SATISFACTORY MANNER. SHOULD CONFLICTS OCCUR IN OR BETWEEN DRAWINGS AND SPECIFICATIONS, THE CONTRACTOR IS DEEMED TO HAVE ESTIMATES ON THE MORE EXPENSIVE WAY OF DOING THE WORK UNLESS HAVING ASKED FOR, AND OBTAINED, WRITTEN DECISION BEFORE SUBMISSION OF PROPOSAL AS TO WHICH METHOD OF MATERIALS WILL BE REQUIRED.

REV	ISSUED FOR	DATE
	BID SET	09-19-2023



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& MENK**

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**WINDSOR
HEIGHTS**
THE HEART OF IT ALL

DESIGNED	JCG
DRAWN	MDH
CHECKED	JCG
CLIENT PROJ. NO.	0TG.128908

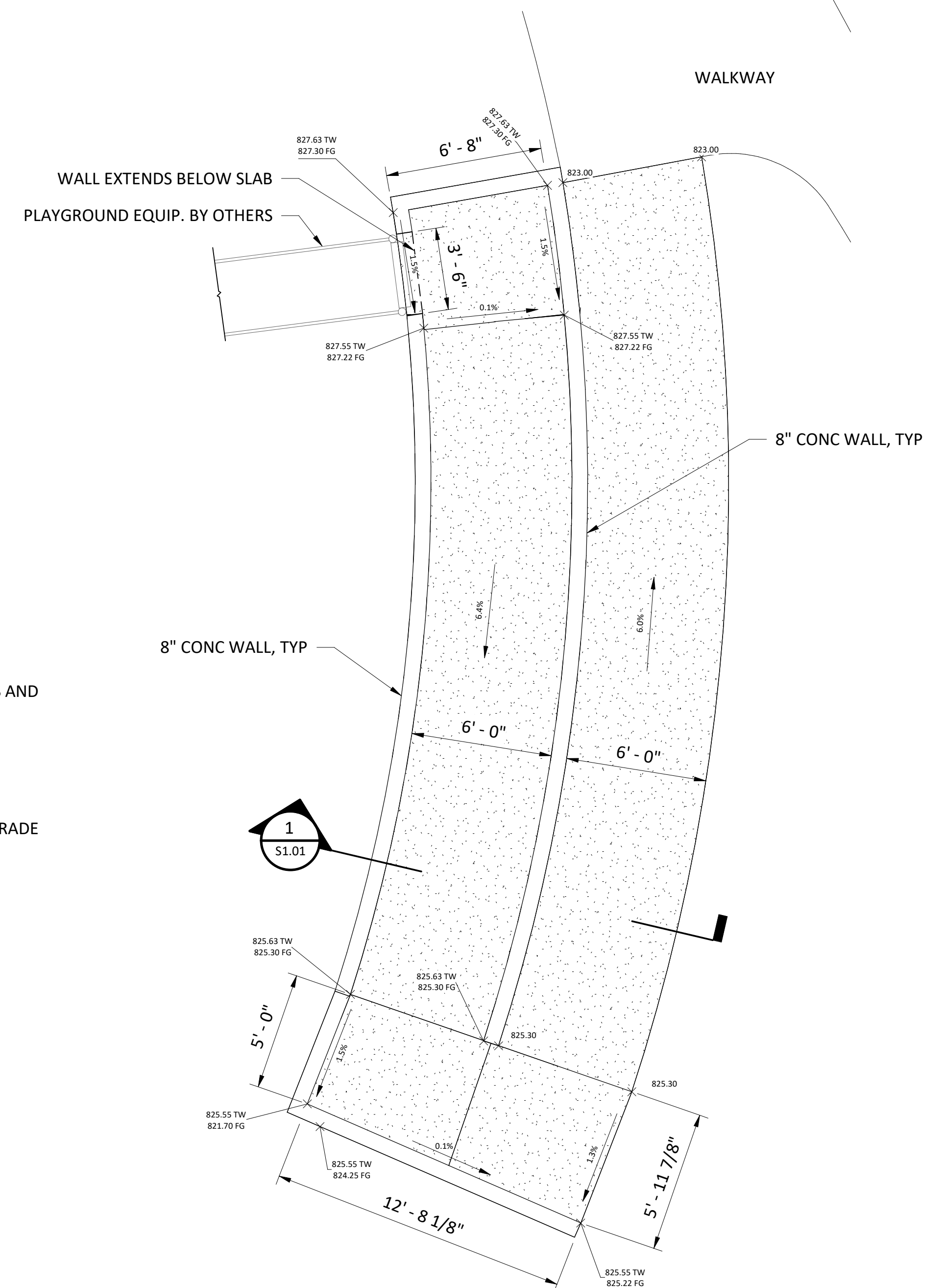
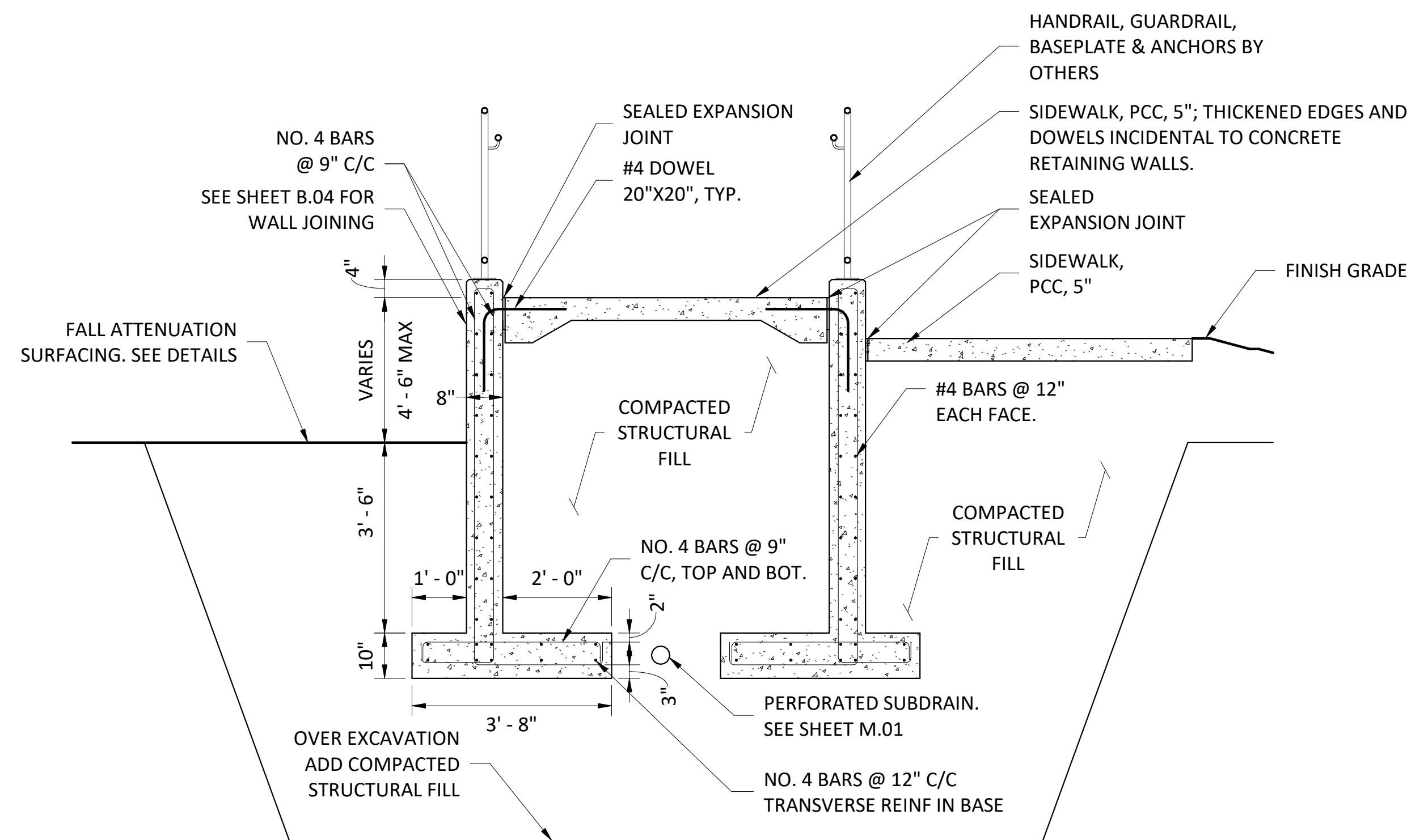
CITY OF WINDSOR HEIGHTS, IOWA

2023 COLBY PARK IMPROVEMENTS

GENERAL (DESIGN CRITERIA & LOADING)

SHEET

S0.01



1 DETAIL - RETAINING WALL & WALKWAY REINFORCEMENT
S1.01 1/2" = 1'-0"

2 RAMP TOP
S1.01 1/4" = 1'-0"

REV	ISSUED FOR	DATE
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R S II	DESIGNED	JCG
	DRAWN	MDH
	CHECKED	JCG
	CLIENT PROJ. NO.	OT6.128908

CITY OF WINDSOR HEIGHTS, IOWA
2023 COLBY PARK IMPROVEMENTS

PLAYGROUND RAMP & RETAINING WALLS PLAN & SECTION

SHEET
1.01

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ESTIMATED PROJECT QUANTITIES - BASE BID					
ITEM NO.	ITEM CODE	ITEM	UNIT	QUANTITY	AS BUILT QUANT.
1	2010-C	CLEARING AND GRUBBING	LS	1	
2	2010-D-2	TOPSOIL, COMPOST AMENDED	CY	500	
3	2010-E	EXCAVATION, CLASS 13	CY	2500	
4	2010-J	SUBBASE, MODIFIED, BERM	TON	255	
5	4020-C	LINEAR TRENCH DRAIN, 8 INCH	LF	75	
6	4020-X	SUBDRAIN, SOLID WALL PVC, 4 INCH	LF	50	
7	4020-X	SUBDRAIN, SOLID WALL PVC, 8 INCH	LF	288	
8	4040-A	SUBDRAIN, HDPE, 8 INCH	LF	85	
9	4040-C	SUBDRAIN CLEANOUT, 8 INCH, TYPE A-1	EA	2	
10	4040-D	SUBDRAIN OUTLETS AND CONNECTIONS, 8 INCH, TO STRUCTURE	EA	2	
11	5010-X-1	WATER SERVICE	LS	1	
12	5010-X-1	WATER SERVICE, WATER FOUNTAIN	LS	1	
13	5020-A	VALVE, GATE, 4 INCH	EA	1	
14	5020-X	BACKFLOW PREVENTER	EA	1	
15	5020-X1	METER PIT	EA	1	
16	5020-X1	PRESSURE REDUCING VALVE	EA	1	
17	5020-E	FLUSHING DEVICE (BLOW OFF), 4 INCH	EA	1	
18	5020-X	PREPARE EXCAVATION FOR TAPPING SLEEVE AND VALVE	EA	1	
19	6010-B	INTAKE, SW-512, 48 INCH	EA	2	
20	6010-X	NYLOPLAST DRAIN BASIN, 12 INCH	EA	3	
21	6010-C-2	EXTERNAL DROP CONNECTION	EA	1	
22	6010-E	MANHOLE ADJUSTMENT, MINOR	EA	1	
23	6010-F	MANHOLE ADJUSTMENT, MAJOR	EA	2	
24	6010-F	MANHOLE ADJUSTMENT, MAJOR, WRA	EA	1	
25	6010-H	REMOVE INTAKE	EA	2	
26	7010-A	PAVEMENT, PCC, 7 INCH	SY	345	
27	7010-A	PAVEMENT, PCC, 5 INCH, REINFORCED (SPLASHPAD)	SY	258	
28	7010-A	PAVEMENT, PCC, 7 INCH, INTEGRAL COLOR	SY	305	
29	7010-E	CURB AND GUTTER, 2 FT, 7 INCH	LF	45	
30	7030-A	REMOVAL OF SIDEWALK	SY	1275	
31	7030-E	SIDEWALK, PCC, 5 INCH	SY	2410	
32	7030-E	SIDEWALK, PCC, 6 INCH	SY	175	
33	7040-H	PAVEMENT REMOVAL	SY	895	
34	7040-H	SALVAGE BRICK PAVERS	SY	250	
35	7040-I	CURB AND GUTTER REMOVAL	LF	45	
36	7080-G	PCC EDGE RESTRAINT, FLUSH, 2 FEET	LF	210	
37	8030-A	TEMPORARY TRAFFIC CONTROL	LS	1	
38	9010-A	CONVENTIONAL SEEDING, SEEDING, FERTILIZING, AND MULCHING (LOW GROW FESCUE)	AC	1	
39	9020-A	SOD	SQ	250	
40	9030-B	DECIDUOUS SHRUBS	EA	195	
41	9030-B	ORNAMENTAL TREE	EA	18	
42	9030-B	PERENNIAL GROUND COVER (1 GAL)	EA	897	
43	9030-B	DECIDUOUS TREE	EA	19	
44	9030-B	EVERGREEN TREE	EA	7	
45	9040-A-1	SWPPP PREPARATION	LS	1	
46	9040-A-2	SWPPP MANAGEMENT	LS	1	
47	9040-D-1	FILTER SOCK, 8", INSTALL, MAINTAIN, AND REMOVE	LF	5000	
48	9080-B	HANDRAIL, PAINTED	LF	442	
49	11020-A	MOBILIZATION	LS	1	
50	11050-A	CONCRETE WASHOUT	LS	1	
51	12000-X-X	TENNIS COURT PAVEMENT AND FENCE REMOVAL	LS	1	
52	12010-X-X	CONCRETE SURFACE STAIN	SF	1335	
53	12010-X-X	NON-SKID RUBBERIZED COATING (SPLASHPAD)	SF	1945	
54	12010-X-X	REINFORCED CAST-IN-PLACE CONCRETE RETAINING WALL (PLAYGROUND RAMP WALL)	CY	30	
55	12010-X-X	REINFORCED CAST-IN-PLACE CONCRETE PIERS (LEAF SEAT WALLS)	EA	36	
56	12010-X-X	REINFORCED CAST-IN-PLACE CONCRETE WALL (LEAF SEAT WALLS)	CF	785	
57	12010-X-X	CONCRETE STEPPING PLANKS	EA	7	
58	12010-X-X	DRINKING FOUNTAIN	EA	1	
59	12010-X-X	SPLASH PAD EQUIPMENT & INSTALLATION	LS	1	
60	12010-X-X	SALVAGE & REINSTALL FURNISHINGS	LS	1	
61	12010-X-X	PLAYGROUND EQUIPMENT & INSTALLATION	LS	1	

62	12010-X-X	FALL ATTENUATION SURFACING, POUR-IN-PLACE	SF	6825	
63	12010-X-X	FALL ATTENUATION SURFACING, SYNTHETIC TURF	SF	2000	
64	12010-X-X	BIKE RACK	EA	8	
65	12010-X-X	BENCH (WOOD)	EA	4	
66	12010-X-X	STONE BLOCK BENCH	EA	8	
67	12010-X-X	ELECTRICAL IMPROVEMENTS, DEMO & SITE PREP	LS	1	
68	12030-X-X	ELECTRICAL IMPROVEMENTS, CIRCUITS	LS	1	
69	12030-X-X	ELECTRICAL IMPROVEMENTS, POLE-TOP LIGHTS	LS	1	
70	12030-X-X	ELECTRICAL IMPROVEMENTS, BOLLARDS	LS	1	
71	12030-X-X	ELECTRICAL IMPROVEMENTS, SALVAGE & RELOCATE B-CYCLE	LS	1	
72	12030-X-X	SALVAGE AND REINSTALL SCULPTURE (BUTTERFLY)	LS	1	
73	12030-X-X	IRRIGATION CAP	LS	1	

ESTIMATED PROJECT QUANTITIES (ALTERNATE A)					
ITEM NO.	ITEM CODE	ITEM	UNIT	QUANTITY	AS BUILT QUANT.
A1	7010-A	PAVEMENT, PCC, 7 INCH	SY	227	
A2	7010-E	CURB AND GUTTER, 2 FT, 7 INCH	LF	64	
A3	7040-H	PAVEMENT REMOVAL	SY	155	
A4	7040-I	CURB AND GUTTER REMOVAL	LF	64	

ESTIMATED PROJECT QUANTITIES (ALTERNATE B)					
ITEM NO.	ITEM CODE	ITEM	UNIT	QUANTITY	AS BUILT QUANT.
B1	12010-X-X	SPLASH PAD OVERHEAD STRUCTURES	EA	3	

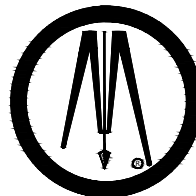
ESTIMATED PROJECT QUANTITIES (ALTERNATE C)					
ITEM NO.	ITEM CODE	ITEM	UNIT	QUANTITY	AS BUILT QUANT.
C1	12010-X-X	CAST STONE CUSTOM WALLS (LEAF SEAT WALLS)	CF	599	

ESTIMATED PROJECT QUANTITIES (ALTERNATE D)					
ITEM NO.	ITEM CODE	ITEM	UNIT	QUANTITY	AS BUILT QUANT.
D1	12030-X-X	IRRIGATION MODIFY AND EXTEND	LS	1	

ESTIMATED PROJECT QUANTITIES (ALTERNATE E)					
ITEM NO.	ITEM CODE	ITEM	UNIT	QUANTITY	AS BUILT QUANT.
E1	12030-X-X	CHAIN LINK FENCE, GALVANIZED, 6'	LF	87	

ESTIMATE REFERENCE INFORMATION		
ITEM NO.	ITEM CODE	DESCRIPTION
1	2010-C	<u>CLEARING AND GRUBBING</u> THIS ITEM SHALL INCLUDE ALL NECESSARY TRIMMING AND CLEARING AND GRUBBING TO COMPLETE CONSTRUCTION. PLANTING BED REMOVALS SHALL BE INCIDENTAL TO THIS ITEM. PROTECTION OF ALL TREES NOT MARKED FOR REMOVAL SHALL BE INCIDENTAL TO THIS ITEM.
2	2010-D-2	<u>TOPSOIL, COMPOST AMENDED</u> ITEM INCLUDES FURNISHING AND INCORPORATING TOPSOIL, SAND, AND COMPOST TO BE PLACED IN PLANTINGS BEDS AT THE DEPTHS INDICATED IN THE B SHEETS. MEASUREMENT SHALL BE THE AMOUNT OF COMPOST AMENDED TOPSOIL PLACED. MIX RATIO IS SPECIFIED ON SHEET L.01. EXCESS HAUL OFF INCIDENTAL.
3	2010-E	<u>EXCAVATION, CLASS 13</u> ALL EXCESS MATERIAL TO BECOME THE PROPERTY OF THE CONTRACTOR AND HAULED OFFSITE. TOPSOIL SHALL BE STRIPPED, SALVAGED AND RESPREAD TO A MINIMUM THICKNESS OF 6" IN ALL DISTURBED TURF AREAS (INCIDENTAL). ITEM INCLUDES HAULING OFF-SITE TO STORE AND HAULING BACK IN IF NEEDED.
4	2010-J	<u>SUBBASE, MODIFIED, BERM</u> THIS ITEM INCLUDES, BUT IS NOT LIMITED TO, FURNISHING, PLACING, COMPACTING, AND TRIMMING TO THE PROPER GRADE FOR THE SYNTHETIC TURF BERMS IN THE PLAYGROUND AREA.
5	4020-C	<u>LINEAR TRENCH DRAIN, 8 INCH</u> THIS ITEM SHALL INCLUDE ALL LABOR, EQUIPMENT, AND MATERIAL REQUIRED TO FURNISH THE LINEAR TRENCH DRAIN INCLUDING FITTINGS FOR CONNECTIONS TO SUBDRAINS. THE TRENCH DRAIN SHALL BE 8 INCH WIDE AND SHALL HAVE A DUCTILE IRON GRATE AND FRAME. THIS ITEM SHALL USE A BOTTOM STYLE OUTLET.
6	4020-X	<u>SUBDRAIN, SOLID WALL PVC, 4 INCH</u> INCLUDES THE INSTALLATION OF ALL REQUIRED BENDS AND TRACER WIRE WITH A TERMINATION POINT INSIDE OF CLEANOUT CASTING.
7	4020-X	<u>SUBDRAIN, SOLID WALL PVC, 8 INCH</u> INCLUDES THE INSTALLATION OF ALL REQUIRED BENDS AND TRACER WIRE WITH A TERMINATION POINT INSIDE OF CLEANOUT CASTING.
8	4040-A	<u>SUBDRAIN, HDPE, 8 INCH</u> INCLUDES THE INSTALLATION OF ALL REQUIRED BENDS AND TRACER WIRE WITH A TERMINATION POINT INSIDE OF CLEANOUT CASTING.

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CITY OF WINDSOR HEIGHTS, IOWA

2023 COLBY PARK IMPROVEMENTS

QUANTITIES AND ESTIMATE REFERENCE NOTES

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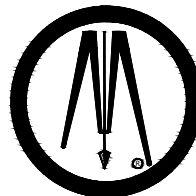
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9	4040-C	<u>SUBDRAIN CLEANOUT, 8 INCH, TYPE A-1</u> THIS ITEM SHALL INCLUDE CONNECTING THE CLEANOUT TO NEW SUBDRAIN.
10	4040-D	<u>SUBDRAIN OUTLETS AND CONNECTIONS, 8 INCH, TO STRUCTURE</u>
11	5010-X-1	<u>WATER SERVICE</u> BID ITEM INCLUDES THE INSTALLATION OF APPROXIMATELY 65 FEET OF NEW 4" C900, DR-14, RESTRAINED JOINT, PVC WATER SERVICE FROM THE TAP AT THE STREET TO THE SPLASHPAD CABINET. THE WATER SERVICE SHALL BE OPEN TRENCHED AT BOTH ENDS OF THE WATER SERVICE WITH THE OPTION OF OPEN TRENCH OR DIRECTIONAL DRILLING BETWEEN AS NECESSARY. FITTINGS SHALL BE DI WITH MEGA-LUG RESTAINED CONNECTIONS. TRACER WIRE SHALL ALSO BE INSTALLED ALONG THE LENGTH OF THE SERVICE LINE. TRACER WIRE SHALL BE IN ACCORDANCE WITH SECTION 5010, 2.05.B AND FIGURE 5010.102. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS. CONTRACTOR SHALL BE REQUIRED TO SUBMIT ALL NECESSARY APPLICATIONS REQUIRED FOR WORK. WORK SHALL BE PERFORMED BY A LICENSED PLUMBER AS REQUIRED. INCIDENTAL TO THIS ITEM IS THE SHUTOFF GATE VALVE AND VALVE BOX LOCATED JUST OUTSIDE THE SPLASH PAD CONTROL VAULT, AT THE END OF THE 4" WATER SERVICE. INCLUDED IN THIS BID ITEM IS ALL INSTALLATION, MATERIALS, AND TESTING, WHICH SHALL BE IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATIONS, SUDAS DIVISION 5, DMWW RULES, CODES AND FIGURES, CITY OF WINDSOR HEIGHTS PLUMBING CODE, AND PROJECT PLANS. CONTRACTOR SHALL COORDINATE WITH DMWW INSPECTOR AND CITY PLUMBING INSPECTON DURING CONSTRUCTION.
12	5010-X-1	<u>WATER SERVICE, WATER FOUNTAIN</u> BID ITEM INCLUDES THE INSTALLATION OF APPROXIMATELY 200 FEET OF NEW 1/2" C900, DR-14, RESTRAINED JOINT, PVC WATER SERVICE FROM THE WYE ON THE 4" SERVICE TO THE WATER FOUNTAIN. THE WATER SERVICE SHALL BE OPEN TRENCHED AT BOTH ENDS OF THE WATER SERVICE WITH THE OPTION OF OPEN TRENCH OR DIRECTIONAL DRILLING BETWEEN AS NECESSARY. FITTINGS SHALL BE DI WITH MEGA-LUG RESTAINED CONNECTIONS. TRACER WIRE SHALL ALSO BE INSTALLED ALONG THE LENGTH OF THE SERVICE LINE. TRACER WIRE SHALL BE IN ACCORDANCE WITH SECTION 5010, 2.05.B AND FIGURE 5010.102. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS. CONTRACTOR SHALL BE REQUIRED TO SUBMIT ALL NECESSARY APPLICATIONS REQUIRED FOR WORK. WORK SHALL BE PERFORMED BY A LICENSED PLUMBER AS REQUIRED. INCIDENTAL TO THIS ITEM IS THE SHUTOFF GATE VALVE AND VALVE BOX LOCATED JUST OUTSIDE THE SPLASH PAD CONTROL VAULT, AT THE END OF THE 4" WATER SERVICE. INCLUDED IN THIS BID ITEM IS ALL INSTALLATION, MATERIALS, AND TESTING, WHICH SHALL BE IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATIONS, SUDAS DIVISION 5, DMWW RULES, CODES AND FIGURES, CITY OF WINDSOR HEIGHTS PLUMBING CODE, AND PROJECT PLANS. CONTRACTOR SHALL COORDINATE WITH DMWW INSPECTOR AND CITY PLUMBING INSPECTON DURING CONSTRUCTION.
13	5020-A	<u>VALVE, GATE, 4 INCH</u>
14	5020-X	<u>BACKFLOW PREVENTER</u> BID ITEM INCLUDES THE INSTALLATION OF THE BACKFLOW PREVENTER, THE BACKFLOW PREVENTER CABINET, ALL PIPE AND FITTINGS FROM THE GATE VALVES ON EACH SIDE OF THE BACKFLOW PREVENTER, INCLUDING THE TWO GATE VALVES WITH VALVE BOXES AS SHOWN IN THE TYPICAL DETAILS. ALL WORKAND MATERIALS REFERRING TO THE BACKFLOW PREVENTER DETAIL SHALL BE INCLUDED IN THIS BID ITEM. CONTRACTOR SHALL PROVIDE NECESSARY INITIAL TESTING. CERTIFICATION OF BACKFLOW PREVENTER UPON COMPLETION OF WORK, WHICH IS INCIDENTAL TO THIS ITEM. BACKFLOW PREVENTER SHALL BE A WATTS 957NRS, OR ENGINEER APPROVED EQUAL. BACKFLOW PREVENTER CABINET SHALL BE AN AQUASHIELD, MODEL BFP3 OR WATTS WB, OR ENGINEER APPROVED EQUAL, SIZED APPROPRIATELY FOR THE BACKFLOW ASSEMBLY AND PIPING AS SHOWN IN THE TYPICAL DETAIL. ALSO INCLUDED IN THIS ITEM IS THE REINFORCED 6" PCC SLAB, ON 6" COMPACTED ROCK BASE, FOR SETTING AND ANCHORING THE BACKFLOW ENCLOSURETO, INCLUDING THE GRADING REQUIRED FOR THE SLAB. ALL WORK AND MATERIALS SHALL BE DONE IN ACCORDANCE AND AS REQUIRED BY THE DES MOINES WATER WORKS, THE SUPPLEMENTAL SPECIFICATIONS, SUDAS DIVISION 5, DMWW RULES, CODES, AND FIGURES, AND CITY OF WINDSOR HEIGHTS PLUMBING CODE. CONTRACTOR SHALL OBTAIN NECESSARY PERMITS AND COORDINATE WITH DMWW INSPECTOR AND CITY PLUMBING INSPECTION DURING CONSTRUCTION.
15	5020-X1	<u>METER PIT</u> BID ITEM INCLUDES THE INSTALLATION OF THE METER PIT. ALL WORK AND MATERIALS SHALL BE DONE IN ACCORDANCE AND AS REQUIRED BY THE DES MOINES WATER WORKS, THE SUPPLEMENTAL SPECIFICATIONS, SUDAS DIVISION 5, DMWW RULES, CODES, AND FIGURES, AND CITY OF WINDSOR HEIGHTS PLUMBING CODE. CONTRACTOR SHALL OBTAIN NECESSARY PERMITS AND COORDINATE WITH DMWW INSPECTOR AND CITY PLUMBING INSPECTION DURING CONSTRUCTION.
16	5020-X1	<u>PRESSURE REDUCING VALVE</u> BID ITEM INCLUDES THE INSTALLATION OF THE METER PIT. ALL WORK AND MATERIALS SHALL BE DONE IN ACCORDANCE AND AS REQUIRED BY THE DES MOINES WATER WORKS, THE SUPPLEMENTAL SPECIFICATIONS, SUDAS DIVISION 5, DMWW RULES, CODES, AND FIGURES, AND CITY OF WINDSOR HEIGHTS PLUMBING CODE. CONTRACTOR SHALL OBTAIN NECESSARY PERMITS AND COORDINATE WITH DMWW INSPECTOR AND CITY PLUMBING INSPECTION DURING CONSTRUCTION.
17	5020-E	<u>FLUSHING DEVICE (BLOW OFF), 4 INCH</u>
18	5020-X	<u>PREPARE EXCAVATION FOR TAPPING SLEEVE AND VALVE</u>
19	6010-B	<u>INTAKE, SW-512, 48 INCH</u> SEE STRUCTURE TABLE FOR GRATE TYPE.
20	6010-X	<u>NYLOPLAST DRAIN BASIN, 12 INCH</u> THIS ITEM SHALL INCLUDE ALL NECESSARY LABOR AND MATERIALS FOR INSTALLING THE DRAIN BASINS INCLUDING GRATES. SEE STRUCTURE TABLE FOR GRATE TYPE.
21	6010-C-2	<u>EXTERNAL DROP CONNECTION</u> CORING AN OPENING IN EXISTING MANHOLE SHALL BE INCIDENTAL TO THIS ITEM.
22	6010-E	<u>MANHOLE ADJUSTMENT, MINOR</u>
23	6010-F	<u>MANHOLE ADJUSTMENT, MAJOR</u> ADJUSTING RINGS TO BE CRETEX PRO-RING OR APPROVED EQUAL.
24	6010-F	<u>MANHOLE ADJUSTMENT, MAJOR, WRA</u> CASTING AND FRAME TO BE COMPOSITE ACCESS PRODUCT (CAP) OR EAST JORDAN GMI COMPOSITE CASTING WITH TWO LOCKING TABS. THE TOOL FOR THE LOCKING TABS MUST BE PROVIDED TO THE WRA. THE WORD "SEWER" SHALL BE STAMPED ON THE TOP OF THE MANHOLE COVER. CONTACT BRETT WARGA AT 402-575-8988 FOR INFORMATION ON COMPOSITE ACCESS PRODUCTS.
25	6010-H	<u>REMOVE INTAKE</u>

26	7010-A	<u>PAVEMENT, PCC, 7 INCH</u> CONCRETE WILL BE C MIX WITH A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS. SLAG IS NOT ALLOWED. FINAL TRIMMING OF SUBGRADE OR SUBBASE, INTEGRAL CURB, BARS AND REINFORCEMENT, JOINTS AND SEALING, SURFACE CURING, PAVEMENT PROTECTION, SAFETY FENCING, CONCRETE FOR RIGID HEADERS, AND BOXOUTS FOR FIXTURES SHALL BE INCIDENTAL TO THIS ITEM. NO EXTRA PAYMENT FOR COLD WEATHER PAVING.
27	7010-A	<u>PAVEMENT, PCC, 5 INCH, REINFORCED (SPLASHPAD)</u> CONCRETE WILL BE C MIX WITH A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS. SLAG IS NOT ALLOWED. FINAL TRIMMING OF SUBGRADE OR SUBBASE, MODIFIED SUBBASE, SUBGRADE PREP, INTEGRAL CURB, BARS AND REINFORCEMENT, JOINTS AND SEALING, SURFACE CURING, PAVEMENT PROTECTION, SAFETY FENCING, CONCRETE FOR RIGID HEADERS, AND BOXOUTS FOR FIXTURES SHALL BE INCIDENTAL TO THIS ITEM. WIRE MESH REINFORCEMENT IN THE SPLASH PAD APRON AS SPECIFIED IS INCIDENTAL. NO EXTRA PAYMENT FOR COLD WEATHER PAVING.
28	7010-A	<u>PAVEMENT, PCC, 7 INCH, INTEGRAL COLOR</u> CONCRETE WILL BE C MIX WITH A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS. SLAG IS NOT ALLOWED. FINAL TRIMMING OF SUBGRADE OR SUBBASE, INTEGRAL CURB, BARS AND REINFORCEMENT, JOINTS AND SEALING, SURFACE CURING, PAVEMENT PROTECTION, SAFETY FENCING, CONCRETE FOR RIGID HEADERS, AND BOXOUTS FOR FIXTURES SHALL BE INCIDENTAL TO THIS ITEM. NO EXTRA PAYMENT FOR COLD WEATHER PAVING. INCLUDES INCORPORATION OF INTEGRAL COLOR PIGMENTATION IN THE MIX, MOCKUPS OF EACH SPECIFIED COLOR FOR REVIEW BY THE ENGINEER, AND SURFACE SEALANT AS RECOMMENDED BY THE MANUFACTURER.
29	7010-E	<u>CURB AND GUTTER, 2 FT, 7 INCH</u> CONCRETE WILL BE C MIX WITH A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS. SLAG IS NOT ALLOWED. FINAL TRIMMING OF SUBGRADE OR SUBBASE, INTEGRAL CURB, BARS AND REINFORCEMENT, JOINTS AND SEALING, SURFACE CURING, PAVEMENT PROTECTION, SAFETY FENCING, CONCRETE FOR RIGID HEADERS, AND BOXOUTS FOR FIXTURES SHALL BE INCIDENTAL TO THIS ITEM. NO EXTRA PAYMENT FOR COLD WEATHER PAVING.
30	7030-A	<u>REMOVAL OF SIDEWALK</u>
31	7030-E	<u>SIDEWALK, PCC, 5 INCH</u> CONCRETE WILL BE C MIX WITH A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS. SLAG IS NOT ALLOWED. FINAL TRIMMING OF SUBGRADE OR SUBBASE, INTEGRAL CURB, BARS AND REINFORCEMENT, JOINTS AND SEALING, SURFACE CURING, PAVEMENT PROTECTION, SAFETY FENCING, CONCRETE FOR RIGID HEADERS, AND BOXOUTS FOR FIXTURES SHALL BE INCIDENTAL TO THIS ITEM. NO EXTRA PAYMENT FOR COLD WEATHER PAVING.
32	7030-E	<u>SIDEWALK, PCC, 6 INCH</u> CONCRETE WILL BE C MIX WITH A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS. SLAG IS NOT ALLOWED. FINAL TRIMMING OF SUBGRADE OR SUBBASE, INTEGRAL CURB, BARS AND REINFORCEMENT, JOINTS AND SEALING, SURFACE CURING, PAVEMENT PROTECTION, SAFETY FENCING, CONCRETE FOR RIGID HEADERS, AND BOXOUTS FOR FIXTURES SHALL BE INCIDENTAL TO THIS ITEM. NO EXTRA PAYMENT FOR COLD WEATHER PAVING.
33	7040-H	<u>PAVEMENT REMOVAL</u>
34	7040-H	<u>SALVAGE BRICK PAVERS</u> ITEM INCLUDES THE REMOVAL, CLEANING, PALLETIZING, AND DELIVERY OF BRICK PAVERS TO PUBLIC WORKS AT 6900 SCHOOL STREET, WINDSOR HEIGHTS, IOWA. REMOVAL AND DISPOSAL OF ANY SUBBASE MATERIALS (CONCRETE OR AGGREGATE) WILL BE INCIDENTAL TO THIS ITEM. PAYMENT SHALL BE MADE FOR THE AREA OF PAVER REMOVAL REGARDLESS OF THICKNESS OF THE SUBBASE MATERIALS.
35	7040-I	<u>CURB AND GUTTER REMOVAL</u>
36	7080-G	<u>PCC EDGE RESTRAINT, FLUSH, 2 FEET</u> MEASUREMENT WILL BE IN LINEAR FEET MEASURED FROM CENTER OF EDGE RESTRAINT. INCLUDES ALL REINFORCING AS SHOWN IN DETAIL 2/B.06.
37	8030-A	<u>TEMPORARY TRAFFIC CONTROL</u> REFER TO J SHEETS FOR DETAILS. THIS ITEM SHALL INCLUDE ALL SIGNAGE DIRECTING VEHICLE AND PEDESTRIAN TRAFFIC DURING ALL PHASES OF CONSTRUCTION. ANY ADDITIONAL SIGNS REQUIRED SHALL BE INCIDENTAL TO THIS ITEM.
38	9010-A	<u>CONVENTIONAL SEEDING, SEEDING, FERTILIZING, AND MULCHING (LOW GROW FESCUE)</u> SEE PLANS FOR SEED MIX AND REQUIREMENTS. REINFORCED EROSION CONTROL PRODUCT AS SPECIFIED IN THE DRAWINGS IS INCIDENTAL TO THIS ITEM.
39	9020-A	<u>SOD</u> THIS ITEM INCLUDES BUT IS NOT LIMITED TO, PREPERATION OF SOD AND SODBED, STAKES, FERTILIZING, WATERING, MAINTENANCE, AND CLEAN UP. ALSO INCLUDES ANY NECESSARY SOD REPLACEMENTS DURING MAINTENANCE PERIOD.
40	9030-B	<u>DECIDUOUS SHRUBS</u> THIS ITEM INCLUDES LABOR, MATERIAL, AND EQUIPMENT TO FURNISH AND INSTALL SHRUBS AS INDICATED IN THE PLANS. PLANTINGS SHALL HAVE ONE YEAR WARRANTY FROM DATE OF FINAL ACCEPTANCE FOR ALL PLANTINGS IN THE PROJECT. ACCEPTANCE OF PLANT MATERIALS CONSTRUES FULL PAYMENT (MINUS ANY PROJECT RETAINAGE). INCLUDES ALL, BUT NOT LIMITED TO, WATERING, EXCAVATION, INSTALLATION, MULCHING, HERBICIDE, MAINTENANCE DURING ESTABLISHMENT PERIOD, AND WARRANTY AND REJECTION REPLACEMENTS.
41	9030-B	<u>ORNAMENTAL TREE</u> THIS ITEM INCLUDES LABOR, MATERIAL, AND EQUIPMENT TO FURNISH AND INSTALL ORNAMENTAL TREES AS INDICATED IN THE PLANS. PLANTINGS SHALL HAVE ONE YEAR WARRANTY FROM DATE OF FINAL ACCEPTANCE FOR ALL PLANTINGS IN THE PROJECT. ACCEPTANCE OF PLANT MATERIALS CONSTRUES FULL PAYMENT (MINUS ANY PROJECT RETAINAGE). INCLUDES ALL, BUT NOT LIMITED TO, WATERING BAG, AMENDED SOILS DELIVERY, EXCAVATION, INSTALLATION, MULCHING, HERBICIDE, MAINTENANCE DURING ESTABLISHMENT PERIOD, AND WARRANTY AND REJECTION REPLACEMENTS.
42	9030-B	<u>PERENNIAL GROUND COVER (1 GAL)</u> THIS ITEM INCLUDES LABOR, MATERIAL, AND EQUIPMENT TO FURNISH AND INSTALL PERENNIALS AND ORNAMENTAL GRASSES AS INDICATED IN THE PLANS. PLANTINGS SHALL HAVE ONE YEAR WARRANTY FROM DATE OF FINAL ACCEPTANCE FOR ALL PLANTINGS IN THE PROJECT. ACCEPTANCE OF PLANT MATERIALS CONSTRUES FULL PAYMENT (MINUS ANY PROJECT RETAINAGE). INCLUDES ALL, BUT NOT LIMITED TO, WATERING, EXCAVATION, INSTALLATION, MULCHING, HERBICIDE, MAINTENANCE DURING ESTABLISHMENT PERIOD, AND WARRANTY AND REJECTION REPLACEMENTS.
43	9030-B	<u>DECIDUOUS TREE</u> THIS ITEM INCLUDES LABOR, MATERIAL, AND EQUIPMENT TO FURNISH AND INSTALL TREES AS INDICATED IN THE PLANS. PLANTINGS SHALL HAVE ONE YEAR WARRANTY FROM DATE OF FINAL ACCEPTANCE FOR ALL PLANTINGS IN THE PROJECT. ACCEPTANCE OF PLANT MATERIALS CONSTRUES FULL PAYMENT (MINUS ANY PROJECT RETAINAGE). INCLUDES ALL, BUT NOT LIMITED TO, WATERING BAG, AMENDED SOILS DELIVERY, EXCAVATION, INSTALLATION, MULCHING, HERBICIDE, MAINTENANCE DURING ESTABLISHMENT PERIOD, AND WARRANTY AND REJECTION REPLACEMENTS.
44	9030-B	<u>EVERGREEN TREE</u> THIS ITEM INCLUDES LABOR, MATERIAL, AND EQUIPMENT TO FURNISH AND INSTALL EVERGREEN TREES AS INDICATED IN THE PLANS. PLANTINGS SHALL HAVE ONE YEAR WARRANTY FROM DATE OF FINAL ACCEPTANCE FOR ALL PLANTINGS IN THE PROJECT. ACCEPTANCE OF PLANT MATERIALS CONSTRUES FULL PAYMENT (MINUS ANY PROJECT RETAINAGE). INCLUDES ALL, BUT NOT LIMITED TO, WATERING BAG, AMENDED SOILS DELIVERY, EXCAVATION, INSTALLATION, MULCHING, HERBICIDE, MAINTENANCE DURING ESTABLISHMENT PERIOD, AND WARRANTY AND REJECTION REPLACEMENTS.

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CITY OF WINDSOR HEIGHTS, IOWA

2023 COLBY PARK IMPROVEMENTS

ESTIMATE REFERENCE NOTES

SHEET

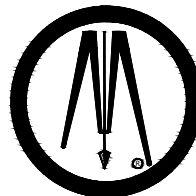
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45	9040-A-1	<u>SWPPP PREPARATION</u>
46	9040-A-2	<u>SWPPP MANAGEMENT</u>
47	9040-D-1	<u>FILTER SOCK, 8", INSTALL, MAINTAIN, AND REMOVE</u> INCLUDES INSTALLATION, MAINTENANCE, AND REMOVAL.
48	9080-B	<u>HANDRAIL, PAINTED</u> INCLUDES ALL MATERIALS, LABOR, AND EQUIPMENT TO INSTALL HANDRAILS AS INDICATED IN THE PLANS. MEASUREMENT AND PAYMENT SHALL BE FOR THE LINEAL FOOT OF HANDRAILS INSTALLED ON THE PROJECT.
49	11020-A	<u>MOBILIZATION</u> THIS ITEM IS FOR ALL PREPARATORY WORK AND COSTS INCURRED BEFORE BEGINNING THE WORK ON THE PROJECT AND DURING THE PROJECT INCLUDING INSTALLING, MAINTAINING, AND REMOVING CONSTRUCTION FENCING TO SECURE THE JOBSITE. THIS ITEM SHALL ALSO INCLUDE THE COSTS FOR ANY STAGED CONSTRUCTION AND EQUIPMENT SET UP TO COMPLETE THE WORK. NO CHANGE IN THE CONTRACT PRICE WILL BE MADE FOR ANY CHANGE IN STAGING OR COMBINATION THEREOF.
50	11050-A	<u>CONCRETE WASHOUT</u>
51	12000-X-X	<u>TENNIS COURT PAVEMENT AND FENCE REMOVAL</u> ALL REMOVALS TO BE MARKED AND MEASURED BY THE ENGINEER. FULL DEPTH SAW CUTS ALONG THE REMOVAL LIMITS ARE INCIDENTAL TO THIS ITEM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADDITIONAL REMOVAL, EARTHWORK, SUBGRADE PREPARATION, MODIFIED SUBBASE AND PAVING EXPENSES DUE TO DAMAGED EDGES. ADDITIONAL REMOVAL TO BE DETERMINED BY ENGINEER. PAYMENT SHALL BE MADE FOR THE AREA OF PAVEMENT REMOVED REGARDLESS OF THICKNESS. REMOVAL OF TENNIS COURT FENCING, PAVEMENT, NETTING, AND POSTS SHALL BE CONSIDERED INCIDENTAL TO THIS ITEM.
52	12010-X-X	<u>CONCRETE SURFACE STAIN</u> INCLUDES ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY FOR DECORATIVE STAINING OF CONCRETE IN AREAS INDICATED ON THE PLANS. MEASUREMENT AND PAYMENT SHALL BE PER SQUARE FOOT OF STAIN APPLIED AS SPECIFIED ON THE DRAWINGS. ALL SURFACE PREP, LIGHT SANDBLASTING, STAINING, SEALER, PROTECTION OF SURROUNDINGS, CLEAN UP, AND TOUCH UP AS REQUIRED AND DETAILED IN THE PLANS ARE CONSIDERED INCIDENTAL. SEE SUPPLEMENTAL SPECIFICATIONS FOR CONCRETE SURFACE STAIN IN THE CONTRACT DOCUMENTS.
53	12010-X-X	<u>NON-SKID RUBBERIZED COATING (SPLASHPAD)</u> INCLUDES ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY FOR FURNISHING AND COMPLETE APPLICATION OF NON-SKID RUBBERIZED COATING. MEASUREMENT AND PAYMENT SHALL BE PER SQUARE FOOT OF COATING AS SPECIFIED ON THE DRAWINGS. ALL SURFACE PREP AND PRIMING COATS ARE CONSIDERED INCIDENTAL. SEE SUPPLEMENTAL SPECIFICATIONS FOR NON-SKID RUBBERIZED COATING (TUFFCOAT) IN CONTRACT DOCUMENTS.
54	12010-X-X	<u>REINFORCED CAST-IN-PLACE CONCRETE RETAINING WALL (PLAYGROUND RAMP WALL)</u> THIS ITEM INCLUDES LABOR, MATERIALS AND EQUIPMENT TO FURNISH MATERIALS AND CONSTRUCT THE CONCRETE RETAINING WALLS FOR THE PEDESTRIAN RAMP SYSTEM AT THE PLAYGROUND. SEE SHEETS S0.01 AND S1.01 FOR DETAILS AND SPECIFICATIONS. ITEM IS TO BE MEASURED AND PAID FOR ON A CUBIC YARD BASIS OF CONCRETE RETAINING WALL AND FOOTINGS CONSTRUCTED. ALL ITEMS NECESSARY FOR COMPLETE EXCAVATION, COMPACTION, FORMWORK, REINFORCING, TESTING AND PLACEMENT OF CONCRETE, BACKFILL, REINFORCING TIES TO RAMP SURFACE PAVEMENT, AND ANY OTHER ITEMS REQUIRED FOR COMPLETE CONSTRUCTION OF THE WALLS ARE CONSIDERED INCIDENTAL TO THIS ITEM. MOCKUPS TO BE USED FOR QUALITY CONTROL, AS STATED IN THE SPEC, ARE ALSO INCIDENTAL TO THIS ITEM.
55	12010-X-X	<u>REINFORCED CAST-IN-PLACE CONCRETE PIERS (LEAF SEAT WALLS)</u> THIS ITEM INCLUDES LABOR, MATERIALS AND EQUIPMENT TO FURNISH MATERIALS AND CONSTRUCT THE CONCRETE PIERS SUPPORTING THE LEAF SEATWALLS IN THE PLAYGROUND AND PLAZA AREAS. ITEM IS TO BE MEASURED AND PAID FOR ON A COUNT BASIS FOR EACH CONCRETE PIER CONSTRUCTED. ALL ITEMS NECESSARY FOR COMPLETE EXCAVATION, REINFORCING, TESTING AND PLACEMENT OF CONCRETE, BACKFILL AND ANY OTHER ITEMS REQUIRED FOR COMPLETE CONSTRUCTION OF THE PIER FOUNDATIONS ARE CONSIDERED INCIDENTAL TO THIS ITEM. MOCKUPS TO BE USED FOR QUALITY CONTROL, AS STATED IN THE SPEC, ARE ALSO INCIDENTAL TO THIS ITEM.
56	12010-X-X	<u>REINFORCED CAST-IN-PLACE CONCRETE WALL (LEAF SEAT WALLS)</u> THIS ITEM INCLUDES LABOR, MATERIALS AND EQUIPMENT TO FURNISH MATERIALS AND CONSTRUCT THE DECORATIVE CONCRETE LEAF SEATWALLS IN THE PLAYGROUND AND PLAZA AREAS. ITEM IS TO BE MEASURED AND PAID FOR ON A CUBIC FOOT BASIS OF CONCRETE SEATWALLS CONSTRUCTED. ALL ITEMS NECESSARY FOR COMPLETE EXCAVATION, COMPACTION, FORMWORK, VOID FORMS, REINFORCING, TESTING AND PLACEMENT OF CONCRETE, BACKFILL AND ANY OTHER ITEMS REQUIRED FOR COMPLETE CONSTRUCTION OF THE WALLS ARE CONSIDERED INCIDENTAL TO THIS ITEM. MOCKUPS TO BE USED FOR QUALITY CONTROL, AS STATED IN THE SPEC, ARE ALSO INCIDENTAL TO THIS ITEM.
57	12010-X-X	<u>CONCRETE STEPPING PLANKS</u> THIS ITEM INCLUDES LABOR, MATERIALS AND EQUIPMENT TO FURNISH MATERIALS AND INSTALL THE CONCRETE STEPPING PLANKS. ITEM IS TO BE MEASURED AND PAID FOR ON A COUNT BASIS FOR EACH CONCRETE STEPPING PLANK INSTALLED. ALL ITEMS NECESSARY FOR COMPLETE EXCAVATION, SAND SETTING BED, SEPARATION FABRIC, REINFORCING, PLACEMENT OF CONCRETE, BACKFILL AND ANY OTHER ITEMS REQUIRED FOR COMPLETE INSTALLATION OF THE CONCRETE STEPPING PLANKS ARE CONSIDERED INCIDENTAL TO THIS ITEM.
58	12010-X-X	<u>DRINKING FOUNTAIN</u> THIS ITEM INCLUDES ALL LABOR, MATERIAL, AND EQUIPMENT TO FURNISH AND INSTALL THE DRINKING FOUNTAIN AND ASSOCIATED ROCK DRAINAGE PIT. THE CONNECTION TO WATER SERVICE, ROCK DRAINAGE PIT, AND AT-GRADE MAINTENANCE VAULT TO DRAINAGE PIT ARE INCIDENTAL TO THIS ITEM AS DETAILED. THIS ITEM MUST BE INSTALLED BY MAY 2024 AND THE PROJECT SHALL BE STAGED BY THE CONTRACTOR TO FACILITATE THIS INSTALLATION TIMELINE.
59	12010-X-X	<u>SPLASH PAD EQUIPMENT & INSTALLATION</u> THIS ITEM INCLUDES ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY FOR COMPLETE INSTALLATION OF THE SPLASH PAD EQUIPMENT AS INDICATED IN THE DRAWINGS AND SPECS. ITEM INCLUDES ALL FURNISHING AND INSTALLATION OF ALL EQUIPMENT MAKING UP THE SPLASH PAD SYSTEM BEGINNING WITH THE DISTRIBUTION MANIFOLD VAULT AND EXTENDING TO AND INCLUDING THE RAIN DIVERTING WASTE VALVE BOX. SEE SUPPLEMENTAL SPECIFICATIONS FOR SPLASHPADS IN CONTRACT DOCUMENTS.
60	12010-X-X	<u>SALVAGE & REINSTALL FURNISHINGS</u> THIS ITEM INCLUDES ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY FOR SALVAGING, RELOCATING, AND SURFACE MOUNTING SIGNS AND KIOSKS AND THE HARMONY PARK PLAY EQUIPMENT PER MANUFACTURER INSTALLATION REQUIREMENTS WITH NEW STAINLESS STEEL MOUNTING HARDWARE. MANUFACTURER-APPROVED STORAGE OF THE EQUIPMENT DURING THE CONSTRUCTION OF THE PROJECT IS INCIDENTAL TO THIS ITEM.
61	12010-X-X	<u>PLAYGROUND EQUIPMENT & INSTALLATION</u> THIS ITEM INCLUDES FURNISHING AND INSTALLATION OF ALL PLAY EQUIPMENT IN THE PLAYGROUND IN ADDITION TO THE MATCHING GUARDRAIL SYSTEM ON THE ACCESSIBLE RAMP. ALL MANUFACTURER FEES TO PROVIDE FINAL DESIGN OF EQUIPMENT, FOOTINGS, AND GUARDRAILS ARE INCLUDED IN THIS ITEM. ITEM INCLUDES OVEREXCAVATION, EXPLORATORY POTHOLING FOR UTILITY CONFLICTS, SUBGRADE PREP, FORMWORK, REINFORCING, AND PLACEMENT OF CONCRETE FOOTINGS FOR THE PLAYGROUND EQUIPMENT AS REQUIRED BY THE MANUFACTURER. PLAYGROUND EQUIPMENT TO BE INSTALLED IN ACCORDANCE WITH THE PLAYGROUND MANUFACTURER'S RECOMMENDATIONS, REQUIREMENTS, AND SPECIFICATIONS. PLAYGROUND EQUIPMENT TO BE INSTALLED BY AN INSTALLER CERTIFIED BY THE PLAYGROUND EQUIPMENT MANUFACTURER.

62	12010-X-X	<u>FALL ATTENUATION SURFACING, POUR-IN-PLACE</u> THIS ITEM INCLUDES ALL TESTING, LABOR, MATERIALS, AND EQUIPMENT TO PLACE POURED-IN-PLACE FALL ATTENUATION SURFACING IN THE PLAYGROUND AREA AS INDICATED IN THE DOCUMENTS. INCIDENTAL TO THIS ITEM IS ALL BASE MATERIAL, INCLUDING CONCRETE PAVING, AGGREGATE SUBBASE, AND ANY SUBGRADE PREPARATION AS NECESSARY TO OBTAIN PROPER COMPACTION LEVELS. SEE SUPPLEMENTAL SPECIFICATIONS FOR POURED-IN-PLACE RUBBER SURFACING IN CONTRACT DOCUMENTS.
63	12010-X-X	<u>FALL ATTENUATION SURFACING, SYNTHETIC TURF</u> THIS ITEM INCLUDES ALL TESTING, LABOR, MATERIALS, AND EQUIPMENT TO PLACE SYNTHETIC TURF FALL ATTENUATION SURFACING AND SYSTEM BUILDUP IN THE PLAYGROUND AREA AS INDICATED IN THE DOCUMENTS AND AS REQUIRED BY THE MANUFACTURER. INCIDENTAL TO THIS ITEM IS ALL MANUFACTURER PROVIDED BASE MATTING, AND CONCRETE SKIM COAT REQUIRED FOR THE CONSTRUCTION OF THE SYNTHETIC TURF MOUNDS. INCREASED MATERIAL SQUARE FOOTAGE RESULTING FROM VERTICAL DIMENSIONS OF SYNTHETIC TURF BERMS ARE INCIDENTAL TO THIS ITEM.
64	12010-X-X	<u>BIKE RACK</u> THIS ITEM INCLUDES LABOR, MATERIALS AND EQUIPMENT TO FURNISH AND INSTALL BIKE RACKS. SEE PLANS FOR LOCATIONS, DETAILS, AND SPEC INFORMATION. ITEM IS TO BE MEASURED AND PAID FOR ON A COUNT BASIS PER EACH.
65	12010-X-X	<u>BENCH (WOOD)</u> THIS ITEM INCLUDES LABOR, MATERIALS AND EQUIPMENT TO FURNISH AND INSTALL WOOD BENCHES TO BE SURFACE MOUNTED ON TOP OF STONE BENCHES. SEE PLANS FOR LOCATIONS, DETAILS, AND SPEC INFORMATION. ITEM IS TO BE MEASURED AND PAID FOR ON A COUNT BASIS PER EACH.
66	12010-X-X	<u>STONE BLOCK BENCH</u> THIS ITEM INCLUDES LABOR, MATERIALS AND EQUIPMENT TO FURNISH AND INSTALL STONE BENCHES. CONCRETE BASE, PINS, AND MODIFIED SUBBASE UNDER THE STONES IS INCLUDED IN THIS ITEM. SEE PLANS FOR LOCATIONS, DETAILS, AND SPEC INFORMATION. ITEM IS TO BE MEASURED AND PAID FOR ON A COUNT BASIS PER EACH.
67	12010-X-X	<u>ELECTRICAL IMPROVEMENTS, DEMO & SITE PREP</u> THIS ITEM INCLUDES LABOR, MATERIAL, AND EQUIPMENT TO REMOVE OR ABANDON ANY EXISTING CIRCUITS NOTED TO BE REMOVED IN THE PLANS. INCLUDES REMOVAL AND DISPOSAL OF EXISTING LIGHTPOLES, BOLLARDS, AND FOOTINGS, INCLUDING EXISTING TENNIS COURT LIGHT POLES, NOTED TO BE REMOVED OR REPLACED. SEE ELECTRICAL SUPPLEMENTAL SPECIFICATION SECTION FOR ADDITIONAL INFORMATION. THIS ITEM WILL BE PAID ON A LUMP SUM BASIS.
68	12030-X-X	<u>ELECTRICAL IMPROVEMENTS, CIRCUITS</u> THIS ITEM INCLUDES LABOR, MATERIALS AND EQUIPMENT TO FURNISH AND INSTALL NEW CIRCUITS, PANELS, AND CONDUIT FOR ELECTRICAL IMPROVEMENTS. SEE PLANS FOR LOCATION, DETAILS, AND SPEC INFORMATION. ITEM IS TO BE MEASURED AND PAID AS A LUMP SUM FOR CIRCUITRY COMPLETE. CABINETS, CONDUIT & FEEDERS (TRENCHED OR BORED AS NECESSARY), PERMITS, TESTING, AND SITE RESTORATION TO ORIGINAL CONDITIONS IN TRENCHED AREAS ARE INCIDENTAL TO THIS ITEM. SEE ELECTRICAL SUPPLEMENTAL SPECIFICATION SECTION FOR ADDITIONAL INFORMATION. ELECTRICAL SERVICE AND CONNECTIONS TO THE SPLASH PAD MANIFOLD, RAIN DIVERTING WASTE VALVE BOX, AND AQUAVATOR ACTUATION UNIT.
69	12030-X-X	<u>ELECTRICAL IMPROVEMENTS, POLE-TOP LIGHTS</u> THIS ITEM INCLUDES LABOR, MATERIALS AND EQUIPMENT TO FURNISH AND INSTALL POLE TOP AREA LIGHTS (NOTED AS "S2" IN THE PLANS). SEE PLANS FOR LOCATION, DETAILS, AND SPEC INFORMATION. ITEM IS TO BE MEASURED AND PAID AS A LUMP SUM FOR POLE TOP AREA LIGHTS COMPLETE. LIGHTS, POLES, FOOTINGS, AND CONNECTIONS ARE INCIDENTAL TO THIS ITEM. SEE ELECTRICAL SUPPLEMENTAL SPECIFICATION SECTION FOR ADDITIONAL INFORMATION.
70	12030-X-X	<u>ELECTRICAL IMPROVEMENTS, BOLLARDS</u> THIS ITEM INCLUDES LABOR, MATERIALS AND EQUIPMENT TO FURNISH AND INSTALL BOLLARD LIGHTS AND PERSONAL CHARGING PEDESTALS (NOTED AS "S1" AND "PED-1" IN THE PLANS, RESPECTIVELY). SEE PLANS FOR LOCATION, DETAILS, AND SPEC INFORMATION. ITEM IS TO BE MEASURED AND PAID AS A LUMP SUM FOR BOLLARD LIGHTS AND PERSONAL CHARGING STATIONS COMPLETE. FOOTINGS AND CONNECTIONS ARE INCIDENTAL TO THIS ITEM. SEE ELECTRICAL SUPPLEMENTAL SPECIFICATION SECTION FOR ADDITIONAL INFORMATION.
71	12030-X-X	<u>ELECTRICAL IMPROVEMENTS, SALVAGE & RELOCATE B-CYCLE</u> THIS ITEM INCLUDES LABOR, MATERIALS AND EQUIPMENT TO SALVAGE, RELOCATE, AND CONNECT B-CYCLE BICYCLE RENTAL UNIT. SEE PLANS FOR LOCATIONS. ITEM IS TO BE MEASURED AND PAID AS A LUMP SUM FOR RELOCATION OF THE B-CYCLE STATION COMPLETE. COORDINATION WITH VENDOR TO INSTALL PER VENDOR'S REQUIREMENTS IS INCIDENTAL TO THIS ITEM. SEE ELECTRICAL SUPPLEMENTAL SPECIFICATION SECTION FOR ADDITIONAL INFORMATION.
72	12030-X-X	<u>SALVAGE AND REINSTALL SCULPTURE (BUTTERFLY)</u> THIS ITEM INCLUDES LABOR, MATERIALS AND EQUIPMENT TO SALVAGE, RELOCATE, AND CONNECT B-CYCLE BICYCLE RENTAL UNIT. SEE PLANS FOR LOCATIONS. ITEM IS TO BE MEASURED AND PAID AS A LUMP SUM FOR RELOCATION OF THE B-CYCLE STATION COMPLETE. COORDINATION WITH VENDOR TO INSTALL PER VENDOR'S REQUIREMENTS IS INCIDENTAL TO THIS ITEM. SEE ELECTRICAL SUPPLEMENTAL SPECIFICATION SECTION FOR ADDITIONAL INFORMATION.
73	12030-X-X	<u>IRRIGATION CAP</u> INCLUDES ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY FOR THE DESIGN MODIFICATIONS AND CAPPING OF EXISTING IRRIGATION ZONES IMPACTED BY THE PROJECT. INCLUDES ALL ITEMS NECESSARY TO PROVIDE A FULLY FUNCTIONAL MODIFIED IRRIGATION SYSTEM TO BE CAPPED AT AREAS IMPACTED BY THE PROJECT.

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CITY OF WINDSOR HEIGHTS, IOWA

2023 COLBY PARK IMPROVEMENTS

ESTIMATE REFERENCE NOTES

SHEET

C.03

ESTIMATE REFERENCE INFORMATION (ALTERNATE A)		
ITEM NO.	ITEM CODE	DESCRIPTION
A1	7010-A	<u>PAVEMENT, PCC, 7 INCH</u> CONCRETE WILL BE C MIX WITH A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS. SLAG IS NOT ALLOWED. FINAL TRIMMING OF SUBGRADE OR SUBBASE, INTEGRAL CURB, BARS AND REINFORCEMENT, JOINTS AND SEALING, SURFACE CURING, PAVEMENT PROTECTION, SAFETY FENCING, CONCRETE FOR RIGID HEADERS, AND BOXOUTS FOR FIXTURES SHALL BE INCIDENTAL TO THIS ITEM. NO EXTRA PAYMENT FOR COLD WEATHER PAVING.
A2	7010-E	<u>CURB AND GUTTER, 2 FT, 7 INCH</u> CONCRETE WILL BE C MIX WITH A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS. SLAG IS NOT ALLOWED. FINAL TRIMMING OF SUBGRADE OR SUBBASE, INTEGRAL CURB, BARS AND REINFORCEMENT, JOINTS AND SEALING, SURFACE CURING, PAVEMENT PROTECTION, SAFETY FENCING, CONCRETE FOR RIGID HEADERS, AND BOXOUTS FOR FIXTURES SHALL BE INCIDENTAL TO THIS ITEM. NO EXTRA PAYMENT FOR COLD WEATHER PAVING.
A3	7040-H	<u>PAVEMENT REMOVAL</u> ALL REMOVALS TO BE MARKED AND MEASURED BY THE ENGINEER. FULL DEPTH SAW CUTS ALONG THE REMOVAL LIMITS ARE INCIDENTAL TO THIS ITEM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADDITIONAL REMOVAL, EARTHWORK, SUBGRADE PREPARATION, MODIFIED SUBBASE AND PAVING EXPENSES DUE TO DAMAGED EDGES. ADDITIONAL REMOVAL TO BE DETERMINED BY ENGINEER. PAYMENT SHALL BE MADE FOR THE AREA OF PAVEMENT REMOVED REGARDLESS OF THICKNESS.
A4	7040-I	<u>CURB AND GUTTER REMOVAL</u>

ESTIMATE REFERENCE INFORMATION (ALTERNATE B)		
ITEM NO.	ITEM CODE	DESCRIPTION
B1	12010-X-X	<u>SPLASH PAD OVERHEAD STRUCTURES</u> THIS ITEM INCLUDES ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY FOR COMPLETE FURNISHING AND INSTALLATION OF ALL COMPONENTS OF THE OVERHEAD STRUCTURES AS INDICATED IN THE DRAWINGS AND SPECIAL PROVISIONS. INCIDENTAL TO THIS ITEM IS THE REINFORCED CONCRETE FOOTING PER MANUFACTURER AND MANUFACTURER'S STRUCTURAL ENGINEERING FEES. CONSTRUCTION OF THE FOOTINGS, INCLUDING EXCAVATION, REINFORCING, AND BACKFILL, ARE ALSO INCIDENTAL TO THIS ITEM. THIS ITEM WILL BE PAID ON A COUNT BASIS PER EACH STRUCTURE INSTALLED. SEE SUPPLEMENTAL SPECIFICATIONS FOR SHELTERS IN CONTRACT DOCUMENTS.

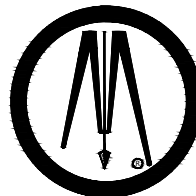
ESTIMATE REFERENCE INFORMATION (ALTERNATE C)		
ITEM NO.	ITEM CODE	DESCRIPTION
C1	12010-X-X	<u>CAST STONE CUSTOM WALLS (LEAF SEAT WALLS)</u> THIS ITEM INCLUDES THE ADDITIONAL COST TO UPGRADE THE PORTION OF THE REINFORCED CAST-IN-PLACE CONCRETE WALL (LEAF SEAT WALLS) TO CAST STONE AS INDICATED ON SHEET B.07. THIS ITEM INCLUDES LABOR, MATERIALS AND EQUIPMENT TO FURNISH MATERIALS AND CONSTRUCT THE CAST STONE CUSTOM WALLS (LEAF SEATWALLS) IN THE PLAYGROUND AND PLAZA AREAS. ITEM IS TO BE MEASURED AND PAID FOR ON A CUBIC FOOT BASIS OF CAST STONE SEATWALLS CONSTRUCTED. ALL ITEMS NECESSARY FOR COMPLETE PROCUREMENT AND INSTALLATION OF CAST STONE, SEALING OF JOINTS, AND BACKFILLING REQUIRED FOR COMPLETE CONSTRUCTION OF THE WALLS AS RECOMMENDED BY THE MANUFACTURER ARE CONSIDERED INCIDENTAL TO THIS ITEM. CAST STONE MANUFACTURER SHALL BE EDWARDS CAST STONE, DUBUQUE, IOWA -- OR APPROVED EQUAL.

ESTIMATE REFERENCE INFORMATION (ALTERNATE D)		
ITEM NO.	ITEM CODE	DESCRIPTION
D1	12030-X-X	<u>IRRIGATION MODIFY AND EXTEND</u> THIS ITEM INCLUDES THE ADDITIONAL COST ASSOCIATED WITH EXTENDING THE EXISTING IRRIGATION SYSTEM INTO THE PROJECT AREA AS INDICATED ON THE L-SERIES SHEETS. ITEM INCLUDES ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY FOR THE DESIGN AND INSTALLATION OF THE EXPANSION OF THE IRRIGATION SYSTEM AS INDICATED IN THE PLANS FOR ADD ALTERNATE D. INCLUDES ALL ITEMS NECESSARY TO PROVIDE A FULLY FUNCTIONAL IRRIGATION SYSTEM IN THE EXISTING IRRIGATED AREAS AND THE ADDITIONAL AREAS INDICATED ON THE PLAN SET.

ESTIMATE REFERENCE INFORMATION (ALTERNATE E)		
ITEM NO.	ITEM CODE	DESCRIPTION
E1	12030-X-X	<u>CHAIN LINK FENCE, GALVANIZED, 6'</u> INCLUDES ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY FOR THE DESIGN AND INSTALLATION OF THE CHAINLINK FENCE AS INDICATED IN THE PLANS FOR ADD ALTERNATE E. INCLUDES ALL ITEMS NECESSARY TO PROVIDE A FULLY INSTALLED FENCE SYSTEM IN THE AREAS INDICATED ON THE PLAN SET INCLUDING BUT NOT LIMITED TO EXCAVATIONS, CONCRETE FOOTINGS, BACKFILLING AND INSTALLATION OF ALL COMPONENTS AND HARDWARE.

Structure Table					
Structure Name	Structure Details	HEIGHT	SUMP/INV	STRUCTURE TYPE	BID ITEM
CO - 1	RIM = 821.14 SUMP = 816.75 Pipe - (25) INV OUT = 817.20	4.48	816.75	SUBDRAIN CLEANOUT, 8 INCH	SUBDRAIN CLEANOUT, 8 INCH
CO - 2	RIM = 824.58 SUMP = 820.10	4.48	820.10	SUBDRAIN CLEANOUT, 8 INCH	Structure Text
EX - 2	RIM = 823.55 SUMP = 812.12 Pipe - (26) (1) INV IN =812.94 Pipe - (19) INV IN =812.84 Pipe - (27) INV IN =812.94 Pipe - (26) INV IN =818.15 Pipe - (18) INV OUT = 812.84	11.42	812.12	EX SANITARY	EXTERNAL DROP CONNECTION MANHOLE ADJUSTMENT, MAJOR
INT - 0	RIM = 821.00 SUMP = 816.87 Pipe - (20) INV IN =816.97 Pipe - (17) INV OUT = 816.87	4.13	816.87	SW-512 (24in, TYPE 3B GRATE)	INTAKE, SW-512
INT - 1	RIM = 823.55 SUMP = 819.36 Pipe - (2) (2) INV IN =819.60 Pipe - (4) INV IN =819.50 Pipe - (20) INV OUT = 819.50	4.19	819.36	NYLOPLAST 12" DRAIN BASIN: 2812AG GRATE: 1299CGSL	NYLOPLAST DRAIN BASIN, 12 INCH
INT - 2	RIM = 824.26 SUMP = 820.95 Pipe - (1) INV IN =820.95 Pipe - (2) INV OUT = 820.95	3.31	820.95	NYLOPLAST 12" DRAIN BASIN: 2812AG GRATE: 1299CGPL	NYLOPLAST DRAIN BASIN, 12 INCH
INT - 3	RIM = 824.24 SUMP = 821.20 Pipe - (1) INV OUT = 821.36	3.03	821.20	NYLOPLAST 12" DRAIN BASIN: 2812AG GRATE: 1299CGPL	NYLOPLAST DRAIN BASIN, 12 INCH
INT - 4	RIM = 824.30 SUMP = 819.77 Pipe - (3) INV IN =819.82 Pipe - (16) INV IN =820.04 Pipe - (4) INV OUT = 819.82	4.53	819.77	NYLOPLAST 12" DRAIN BASIN: 2812AG GRATE: 1299CGSL	NYLOPLAST DRAIN BASIN, 12 INCH
INT - 5	RIM = 824.06 SUMP = 820.36 Pipe - (3) INV OUT = 820.45	3.70	820.36	NYLOPLAST 12" DRAIN BASIN: 2812AG GRATE: 1299CGSL	NYLOPLAST DRAIN BASIN, 12 INCH
INT - 6	RIM = 820.30 SUMP = 816.62 Pipe - (25) INV IN =817.11 Pipe - (21) INV OUT = 817.11	3.69	816.62	TRENCH DRAIN, ACO KLASSIKDRAIN KS100	LINEAR TRENCH DRAIN
INT - 7	RIM = 820.22 SUMP = 816.42 Pipe - (21) INV IN =816.77 Pipe - (28) INV IN =816.87 Pipe - (22) INV OUT = 816.77	3.79	816.42	TRENCH DRAIN, ACO KLASSIKDRAIN KS100	LINEAR TRENCH DRAIN
INT - 8	RIM = 820.39 SUMP = 816.60 Pipe - (28) INV OUT = 817.36	3.79	816.60	TRENCH DRAIN, ACO KLASSIKDRAIN KS100	LINEAR TRENCH DRAIN
INT - 9	RIM = 821.36 SUMP = 815.87 Pipe - (22) INV IN =815.97 Pipe - (23) INV OUT = 815.87	5.49	815.87	SW-512 (18in, TYPE 4A GRATE)	INTAKE, SW-512

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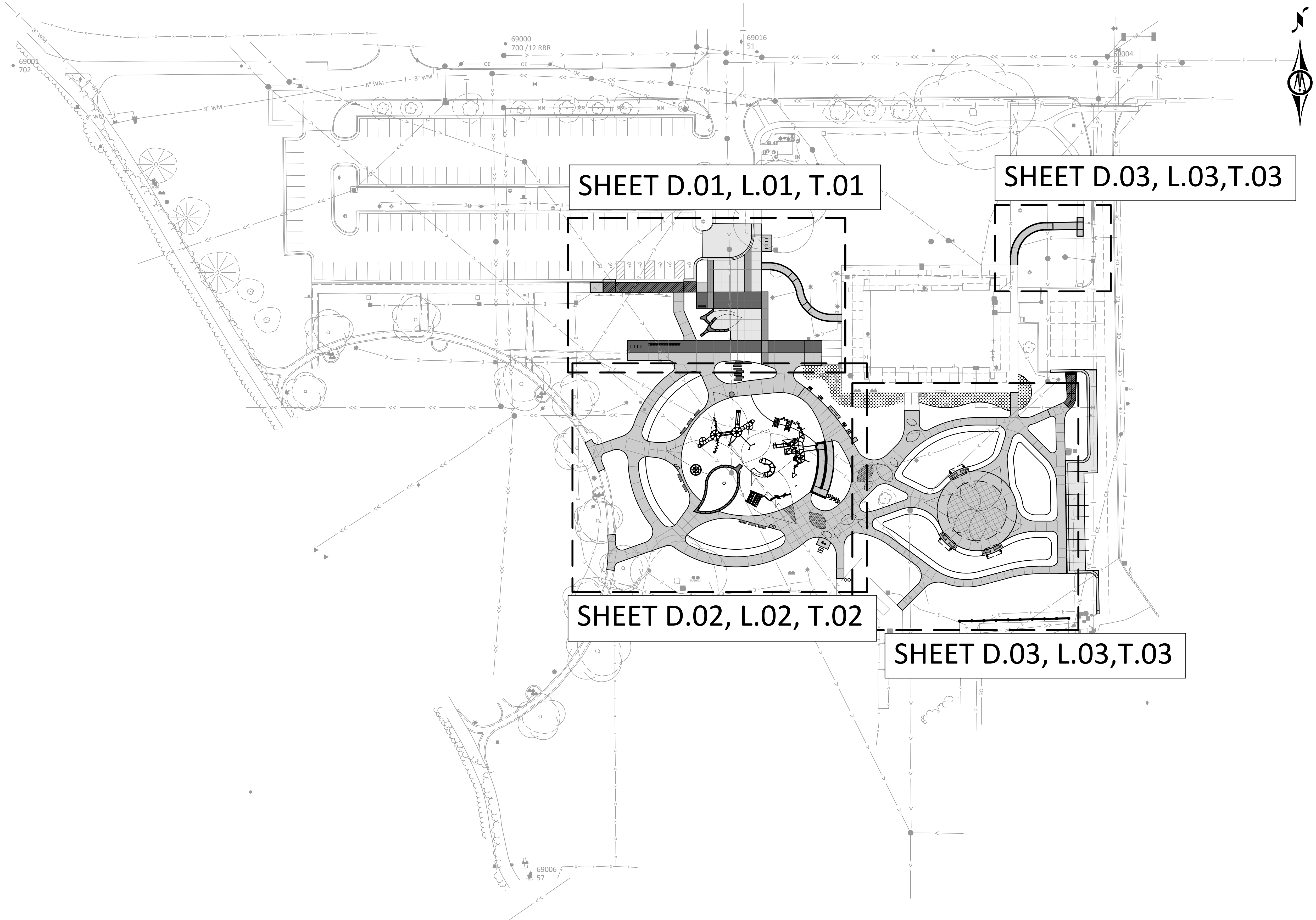
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2023 COLBY PARK IMPROVEMENTS

ESTIMATE REFERENCE NOTES

SHEET

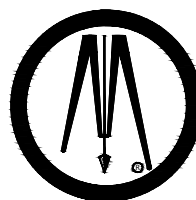
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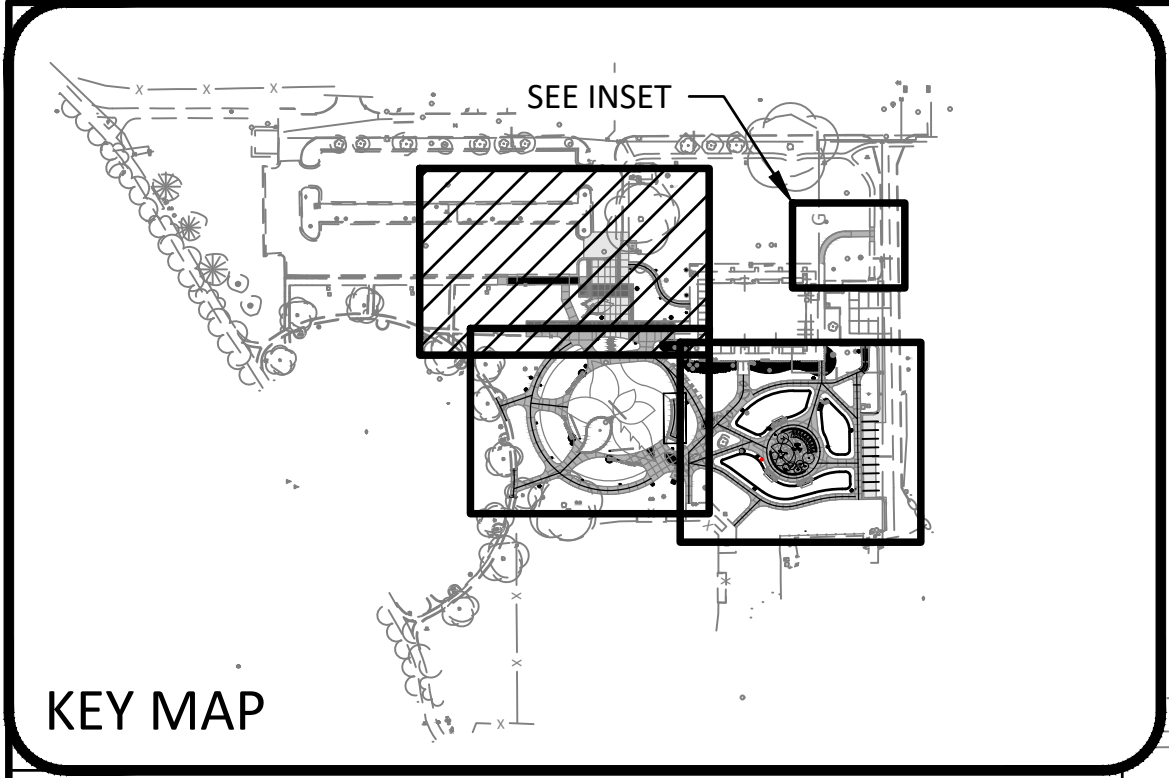
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CITY OF WINDSOR HEIGHTS, IOWA
2023 COLBY PARK IMPROVEMENTS
OVERALL SITE MAP

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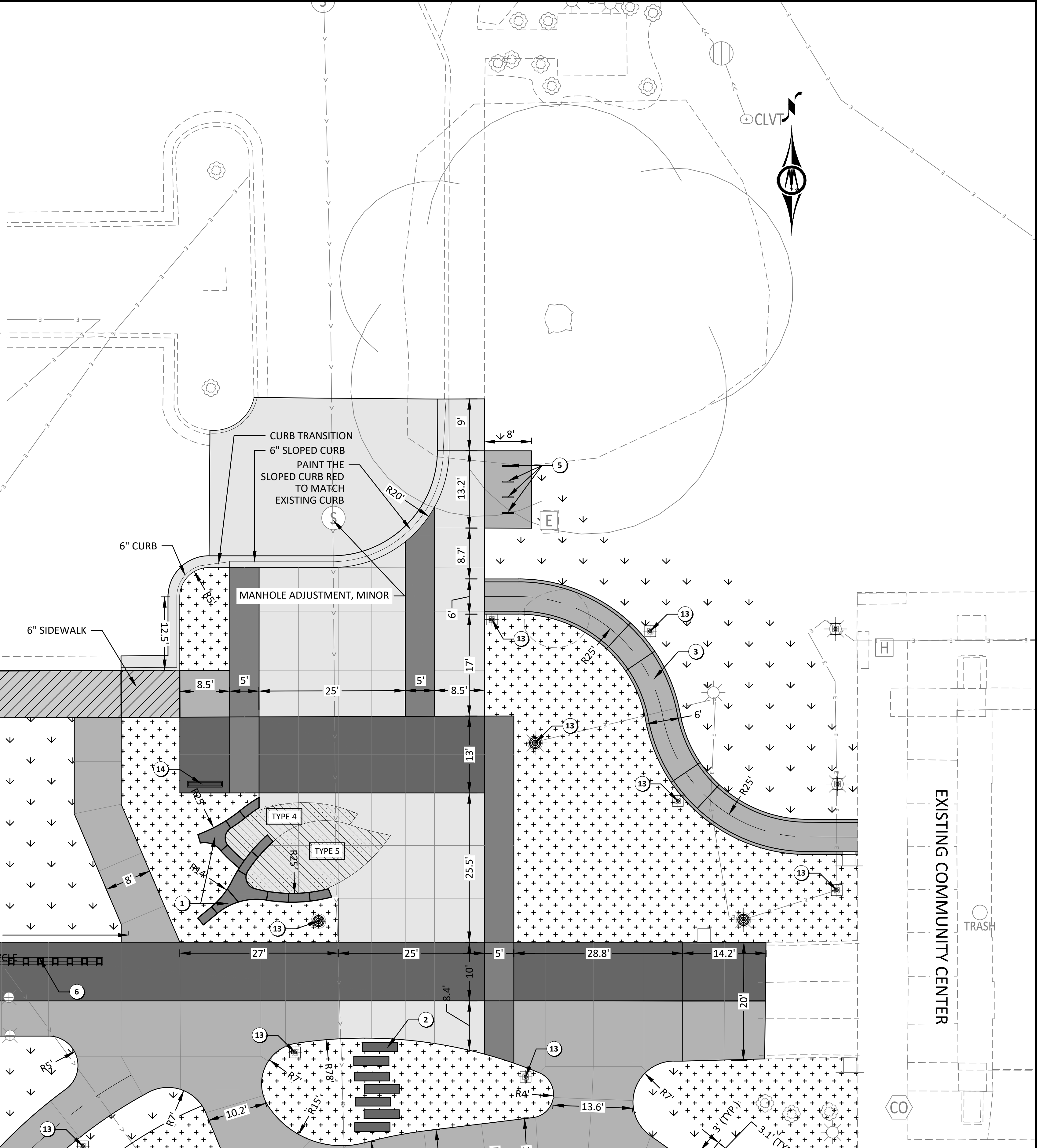
SITE LAYOUT KEYNOTES:

- 1 REINFORCED CAST-IN-PLACE CONCRETE WALL (LEAF SEAT WALLS) OR CAST STONE CUSTOM WALLS, SEE DETAIL 1/B.07
- 2 CONCRETE STEPPING PLANKS, SEE DETAIL 5/B.07
- 3 RAMP WITH HANDRAIL, SEE GRADING SHEETS & DETAIL SHEET 8/B.01
- 4 NOT USED
- 5 BIKE RACK, SEE DETAIL 3/B.03
- 6 B-CYCLE STATION, (COORDINATE W/B-CYCLE BEFORE REMOVAL & NEW PLACEMENT)
- 7 LANDSCAPE BERM, SEE GRADING SHEETS
- 8 STONE BLOCK BENCH, SEE DETAIL 3/B.07
- 9 STONE BLOCK BENCH WITH BENCH (WOOD), SEE DETAIL 4/B.07
- 10 DRINKING FOUNTAIN, SEE DETAIL SHEET 8.03 (WATER FOUNTAIN MUST BE INSTALLED BY MAY 2024)
- 11 TRASH & RECYCLING RECEPTACLES, BY OTHERS
- 12 DUMOR BENCH, BY OTHERS
- 13 LIGHTING, SEE ELECTRICAL SHEETS
- 14 EXISTING KIOSK, REMOVE AND REINSTALL (BY OWNER)
- 15 REINSTALL SALVAGED BUTTERFLY SCULPTURE AND CONCRETE BASE

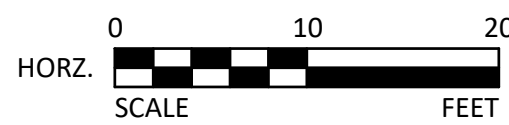
LEGEND			
	PAVEMENT, PCC 7"		FALL ATTENUATION SURFACING, POUR-IN-PLACE
	SIDEWALK, PCC 5"		LANDSCAPE BED
	SIDEWALK, PCC 6"		SOD
	PAVEMENT, PCC, 7" INTEGRAL COLOR CONCRETE, TYPE 1 (PER SPECS)		FALL ATTENUATION SURFACING, POUR-IN-PLACE
	PAVEMENT, PCC, 7" INTEGRAL COLOR CONCRETE, TYPE 2 (PER SPECS)		NON-SKID RUBBERIZED COATING (SPLASHPAD)
	CONCRETE SURFACE STAIN (PER SPECS)	SEE B SHEETS FOR ALL CONSTRUCTION DETAILS	

GENERAL NOTES:

1. UNDERGROUND UTILITIES: FIELD LOCATE UNDERGROUND UTILITIES PRIOR TO EXCAVATION FOR INSTALLATION OF SITE IMPROVEMENTS. IF A CONFLICT EXISTS BETWEEN PROPOSED SITE IMPROVEMENTS AND EXISTING OR PROPOSED UTILITIES, IMMEDIATELY ADVISE THE LANDSCAPE ARCHITECT.
2. HORIZONTAL CONTROL: HORIZONTAL CONTROL FOR THE LAYOUT OF SITE IMPROVEMENTS WILL BE PROVIDED BY THE ENGINEER. STATIONS AND OFFSETS INDICATED ON THE DRAWINGS ARE RELATIVE TO THE ROADWAY STATIONING.
3. ISOLATION JOINTS IN SIDEWALK PAVING: GENERALLY, ISOLATION JOINTS WILL BE LOCATED ALONG THE BACK OF CURB BETWEEN SIDEWALK PAVEMENTS AND PERMANENT STRUCTURES, WALLS AND BUILDINGS. ISOLATION JOINTS WILL ALSO BE LOCATED WHERE THE SIDEWALK PAVEMENT TURNS OR CHANGES DIRECTION, AND AT EVERY 100 FOOT MARK OF LINEAR SIDEWALK.
4. ALL SIDEWALKS AND CONCRETE SURFACES TO HAVE A LIGHT BROOM FINISH PERPENDICULAR TO DIRECTION OF TRAVEL UNLESS OTHERWISE NOTED, TYPICAL.
5. SAWCUTS TO BE MADE AS SHOWN ON PLANS UNLESS DIRECTED OTHERWISE BY LANDSCAPE ARCHITECT.
6. CONTRACTOR IS TO PRESERVE AND PROTECT EXISTING VEGETATION TO REMAIN AT ALL STAGES OF CONSTRUCTION. DAMAGED PLANT MATERIAL WILL BE REPLACED AT CONTRACTOR'S EXPENSE.
7. CONTRACTOR IS TO PRESERVE AND PROTECT EXISTING BUILDINGS AND FOUNDATIONS AT ALL STAGES OF CONSTRUCTION.
8. CONTRACTOR IS TO VERIFY THAT ALL SLOPES, CROSS SLOPES, LONGITUDINAL SLOPES, DROP CURB SLOPES, ETC. DO NOT EXCEED PROWAG MAXIMUMS. CONTRACTOR IS TO NOTIFY OWNER'S REPRESENTATIVE IF SLOPES EXCEED GUIDELINE RECOMMENDATIONS.
9. HATCH PATTERNS ON PLAN DRAWINGS SHALL NOT BE USED FOR CONSTRUCTION OR SCALING PURPOSES. REFER TO CONSTRUCTION DETAILS FOR PAVER PATTERNS AND FINISHES.



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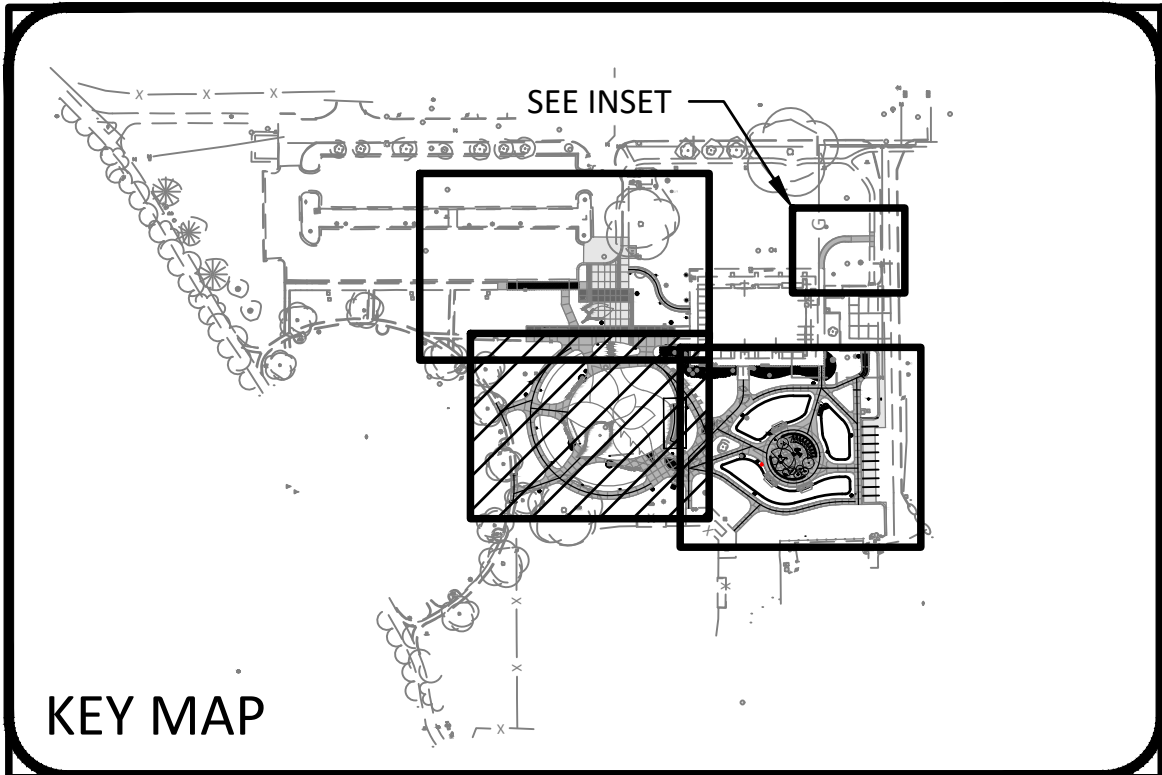
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2023 COLBY PARK IMPROVEMENTS
LAYOUT PLAN

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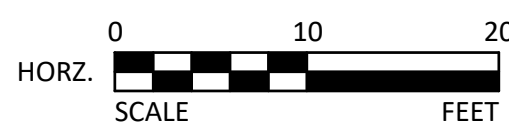
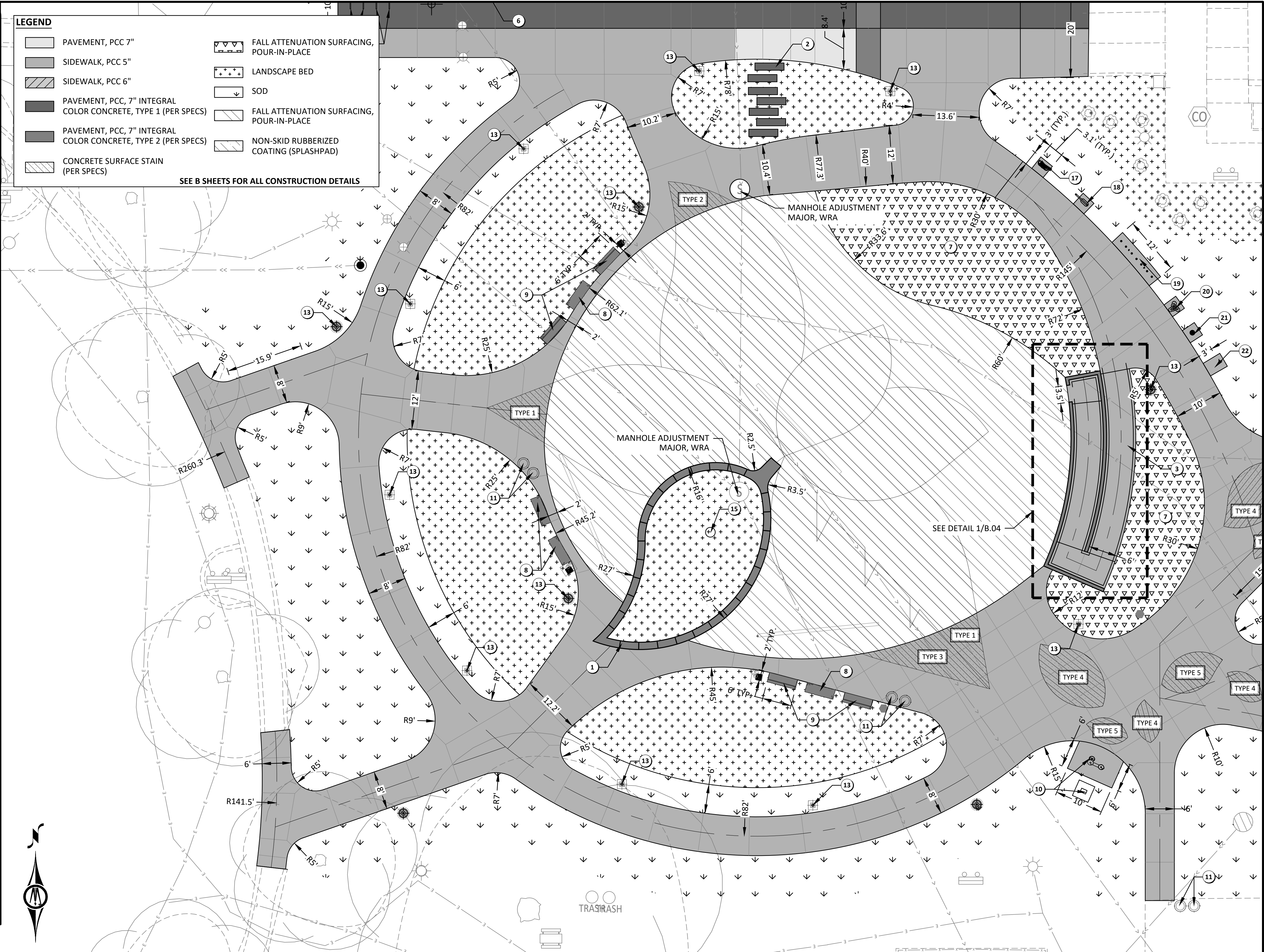
SITE LAYOUT KEYNOTES:

- 1 REINFORCED CAST-IN-PLACE CONCRETE WALL (LEAF SEAT WALLS) OR CAST STONE CUSTOM WALLS, SEE DETAIL 1/B.07
- 2 CONCRETE STEPPING PLANKS, SEE DETAIL 5/B.07
- 3 RAMP WITH HANDRAIL, SEE GRADING SHEETS & DETAIL SHEET 8/B.01
- 4 NOT USED
- 5 BIKE RACK, SEE DETAIL 3/B.03
- 6 B-CYCLE STATION, (COORDINATE W/B-CYCLE BEFORE REMOVAL & NEW PLACEMENT)
- 7 LANDSCAPE BERM, SEE GRADING SHEETS
- 8 STONE BLOCK BENCH, SEE DETAIL 3/B.07
- 9 STONE BLOCK BENCH WITH BENCH (WOOD), SEE DETAIL 4/B.07
- 10 DRINKING FOUNTAIN, SEE DETAIL SHEET B.03 (WATER FOUNTAIN MUST BE INSTALLED BY MAY 2024)
- 11 TRASH & RECYCLING RECEPTACLES, BY OTHERS
- 12 DUMOR BENCH, BY OTHERS
- 13 LIGHTING, SEE ELECTRICAL SHEETS
- 14 EXISTING KIOSK, REMOVE AND REINSTALL (BY OWNER)
- 15 REINSTALL SALVAGED BUTTERFLY SCULPTURE AND CONCRETE BASE
- 16 SPLASHPAD OVERHEAD STRUCTURES (ALTERNATE B), SEE DETAIL SHEET 2/B.07
- 17 ARIA (HARMONY PARK ELEMENT), TO BE SURFACE MOUNTED PER MANUFACTURER REQ.
- 18 HARP (HARMONY PARK ELEMENT), TO BE SURFACE MOUNTED PER MANUFACTURER REQ.
- 19 CONTRABASS CHIMES (HARMONY PARK ELEMENT), TO BE SURFACE MOUNTED PER MANUFACTURER REQ.
- 20 LILYPAD CYMBALS (HARMONY PARK ELEMENT), TO BE SURFACE MOUNTED PER MANUFACTURER REQ.
- 21 PAGODA BELLS (HARMONY PARK ELEMENT), TO BE SURFACE MOUNTED PER MANUFACTURER REQ.
- 22 MANTA RAY (HARMONY PARK ELEMENT), TO BE SURFACE MOUNTED PER MANUFACTURER REQ.
- 23 6' HIGH GALVANIZED CHAIN LINK FENCE, SEE DETAIL 6/B.08 (ALTERNATE F)

LEGEND

PAVEMENT, PCC 7"	FALL ATTENUATION SURFACING, POUR-IN-PLACE
SIDEWALK, PCC 5"	LANDSCAPE BED
SIDEWALK, PCC 6"	SOD
PAVEMENT, PCC, 7" INTEGRAL COLOR CONCRETE, TYPE 1 (PER SPECS)	FALL ATTENUATION SURFACING, POUR-IN-PLACE
PAVEMENT, PCC, 7" INTEGRAL COLOR CONCRETE, TYPE 2 (PER SPECS)	NON-SKID RUBBERIZED COATING (SPLASHPAD)
CONCRETE SURFACE STAIN (PER SPECS)	

SEE B SHEETS FOR ALL CONSTRUCTION DETAILS



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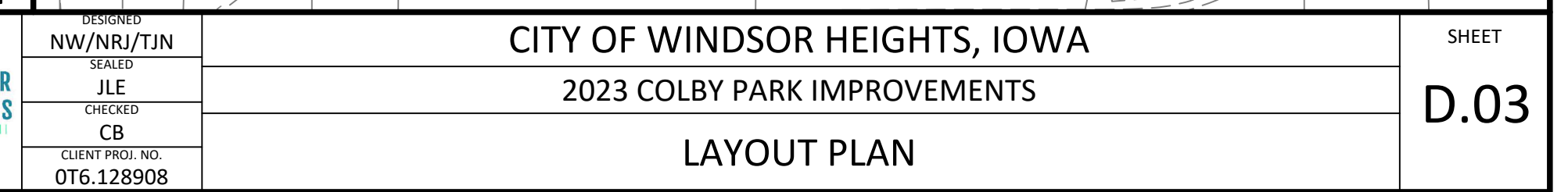
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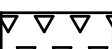
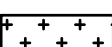
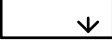
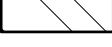
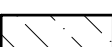
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2023 COLBY PARK IMPROVEMENTS

LAYOUT PLAN

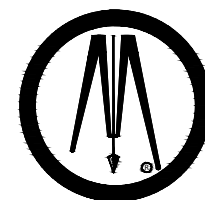
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|---|---|--|
| MENT, PCC 7" |  | FALL ATTENUATION SURFACING,
POUR-IN-PLACE |
| WALK, PCC 5" |  | LANDSCAPE BED |
| WALK, PCC 6" |  | SOD |
| MENT, PCC, 7" INTEGRAL
OR CONCRETE, TYPE 1 (PER SPECS) |  | FALL ATTENUATION SURFACING,
POUR-IN-PLACE |
| MENT, PCC, 7" INTEGRAL
OR CONCRETE, TYPE 2 (PER SPECS) |  | NON-SKID RUBBERIZED
COATING (SPLASHPAD) |
| CRETE SURFACE STAIN
(SPECS) | | |
- SEE B SHEETS FOR ALL CONSTRUCTION DETAILS**

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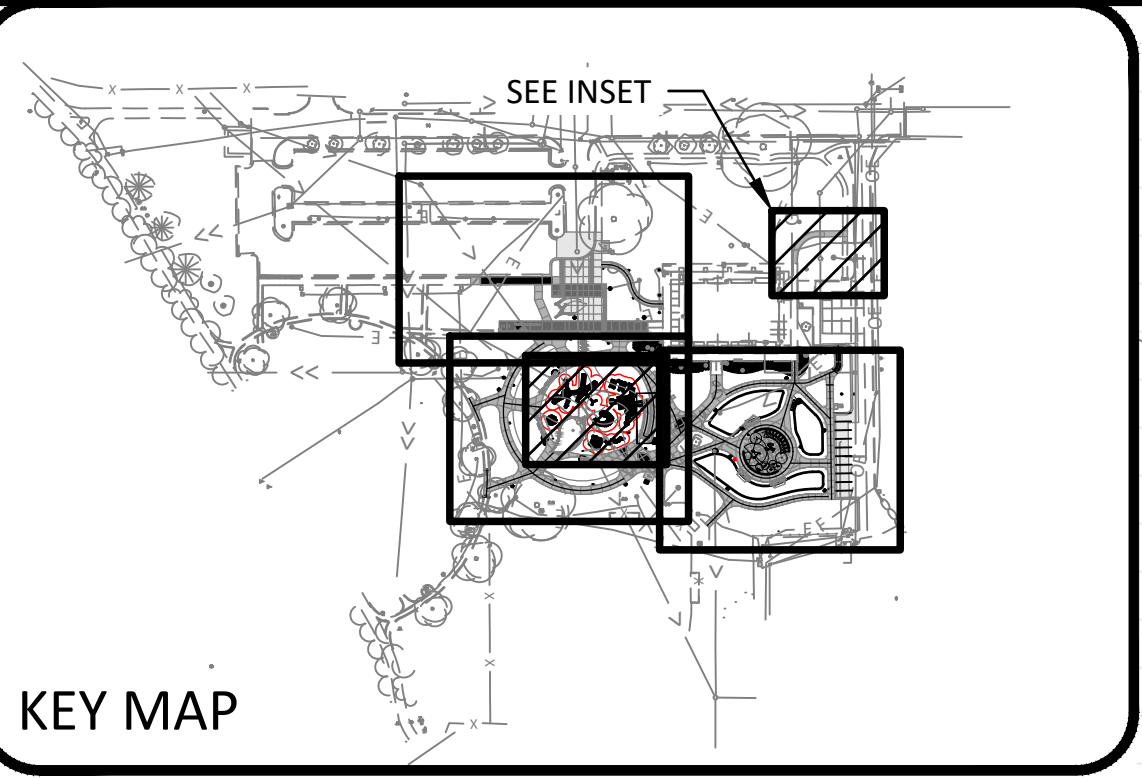
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2023 COLBY PARK IMPROVEMENTS

LAYOUT PLAN

SHEET
03



KEY MAP

PLAYGROUND EQUIPMENT KEYNOTES:

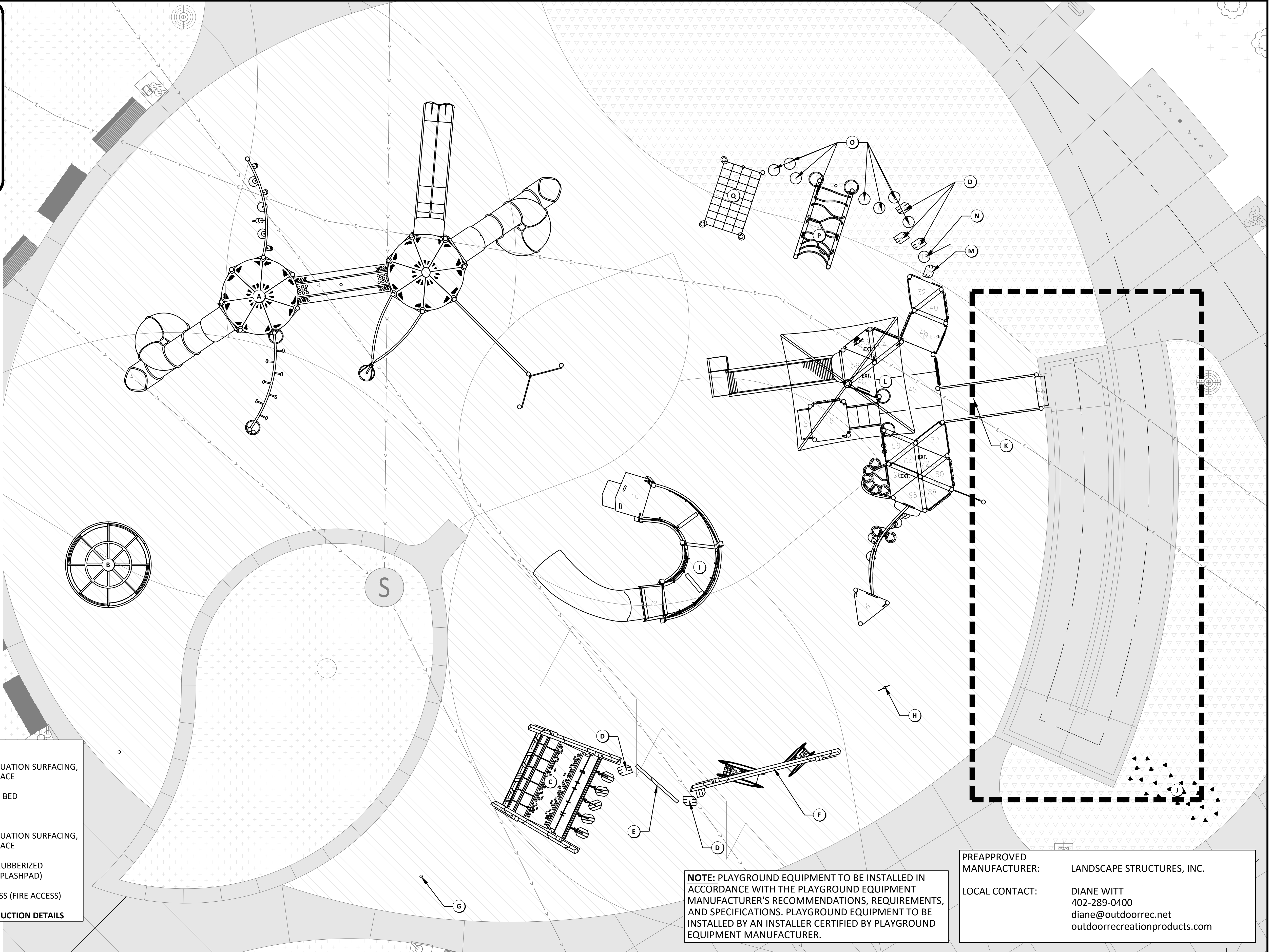
- A** SUPER NETPLEX BY LANDSCAPE STRUCTURES
- B** WE-GO-ROUND W/ DIGIFUSE PANELS BY LANDSCAPE STRUCTURES
- C** FOXTROT MULTI-CLIMBER
- D** FOOTPRINT STEPPER 8"
- E** FOOTPRINT BALANCE BEAM
- F** FOX DEN HANGOUTS
- G** WELCOME SIGN (2-5 YEARS)
- H** WELCOME SIGN (5-12 YEARS)
- I** FORMA ALPINE SLIDE
- J** HILLSIDE CLIMBING HANDGRIPS
- K** RAMP W/BARRIER
- L** PLAYBOOSTER STRUCTURE FOR 5-12Y AGE GROUP. INCLUDES: TRANSFER DECK, RAMP ACCESS, MULTIPLE ACTIVITY PANELS, DECK PLATFORMS, MULTIPLE CLIMBERS. SEE DETAIL SHEET.
- M** FOOTPRINT STEPPER 24"
- N** POD CLIMBER 16"
- O** POD CLIMBER 8"
- P** RING TANGLE CLIMBER
- Q** HILL NET CLIMBER

NOTE: LAYOUT OF PLAY EQUIPMENT SHOWN FOR REFERENCE ONLY. FINAL LAYOUT OF PLAY EQUIPMENT BY MANUFACTURER.

LEGEND

- PAVEMENT, PCC 7"
- SIDEWALK, PCC 5"
- SIDEWALK, PCC 6"
- PAVEMENT, PCC, 7" INTEGRAL COLOR CONCRETE, TYPE 1 (PER SPECS)
- PAVEMENT, PCC, 7" INTEGRAL COLOR CONCRETE, TYPE 2 (PER SPECS)
- CONCRETE SURFACE STAIN (PER SPECS)
- FALL ATTENUATION SURFACING, POUR-IN-PLACE
- LANDSCAPE BED
- SOD
- FALL ATTENUATION SURFACING, POUR-IN-PLACE
- NON-SKID RUBBERIZED COATING (SPLASHPAD)
- 7" THICKNESS (FIRE ACCESS)

SEE B SHEETS FOR ALL CONSTRUCTION DETAILS



NOTE: PLAYGROUND EQUIPMENT TO BE INSTALLED IN ACCORDANCE WITH THE PLAYGROUND EQUIPMENT MANUFACTURER'S RECOMMENDATIONS, REQUIREMENTS, AND SPECIFICATIONS. PLAYGROUND EQUIPMENT TO BE INSTALLED BY AN INSTALLER CERTIFIED BY PLAYGROUND EQUIPMENT MANUFACTURER.

PREAPPROVED MANUFACTURER: LANDSCAPE STRUCTURES, INC.

LOCAL CONTACT: DIANE WITT
402-289-0400
diane@outdoorrec.net
outdoorrecreationproducts.com

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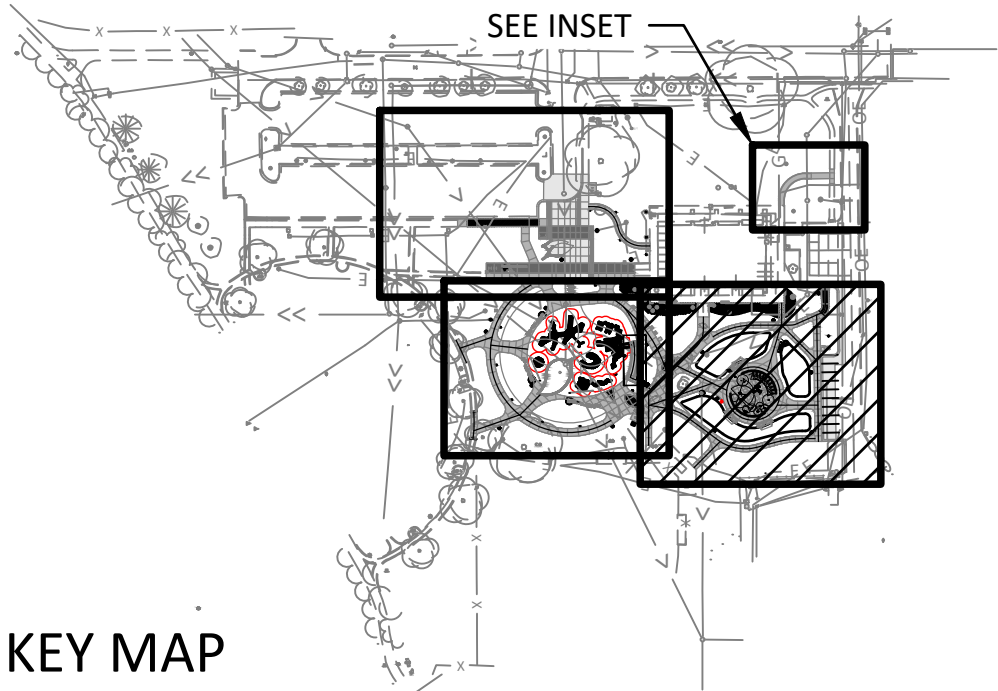


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CITY OF WINDSOR HEIGHTS, IOWA
2023 COLBY PARK IMPROVEMENTS
PLAYGROUND LAYOUT PLAN



KEY MAP

SPLASHPAD EQUIPMENT KEYNOTES:

- ⑤ CANOPY CLUSTER W/ ACRYLIC
- ① HYDROSPHERE
- ④ ARCH JET
- ⑥ CRACKLE CORN
- ⑦ CROWN JET
- ⑧ GROUND FUNNEL
- ⑨ JUNIOR WATER JEWEL
- AA STREAM JET
- BB STREAM JET TRIANGLE
- CC AQUAVATOR
- DD DRAIN BOX
- EE VALVE VAULT

LEGEND

- PAVEMENT, PCC 7"
- SIDEWALK, PCC 5"
- SIDEWALK, PCC 6"
- PAVEMENT, PCC, 7" INTEGRAL COLOR CONCRETE, TYPE 1 (PER SPECS)
- PAVEMENT, PCC, 7" INTEGRAL COLOR CONCRETE, TYPE 2 (PER SPECS)
- CONCRETE SURFACE STAIN (PER SPECS)
- FALL ATTENUATION SURFACING, POUR-IN-PLACE
- LANDSCAPE BED
- SOD
- FALL ATTENUATION SURFACING, POUR-IN-PLACE
- NON-SKID RUBBERIZED COATING (SPLASHPAD)

SEE B SHEETS FOR ALL CONSTRUCTION DETAILS

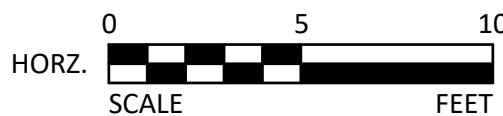
CONTACT: DIANE WITT
402-289-0400
diane@outdoorrec.net
outdoorrecreationproducts.com

NOTE: SPLASHPAD EQUIPMENT TO BE INSTALLED IN ACCORDANCE WITH THE SPLASHPAD EQUIPMENT MANUFACTURER'S RECOMMENDATIONS, REQUIREMENTS, AND SPECIFICATIONS. SPLASHPAD EQUIPMENT TO BE INSTALLED BY AN INSTALLER CERTIFIED BY SPLASHPAD EQUIPMENT MANUFACTURER.

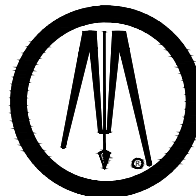
NON-SKID RUBBERIZED COATING TO BE APPLIED TO SPLASHPAD SURFACE.

MANUFACTURER: TUFFCOAT

COLOR: TBD



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430 E GRAND AVE, SUITE 101
DES MOINES, IOWA 50309
Phone: (515) 259-9190
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CITY OF WINDSOR HEIGHTS, IOWA
2023 COLBY PARK IMPROVEMENTS
SPLASHPAD LAYOUT PLAN

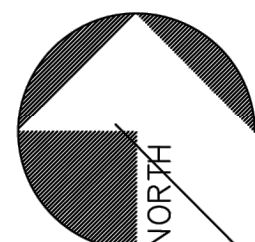
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SCALE IN FEET:
0' 2.5' 5' 10'



Colby Park Playground
Playground Improvements
6900 School St, Windsor Heights, IA 50324

Outdoor Recreation
Products
Diane Witt

SYSTEM TYPE:
PlayBooster

DRAWING #:
1171503-02-03_ORP

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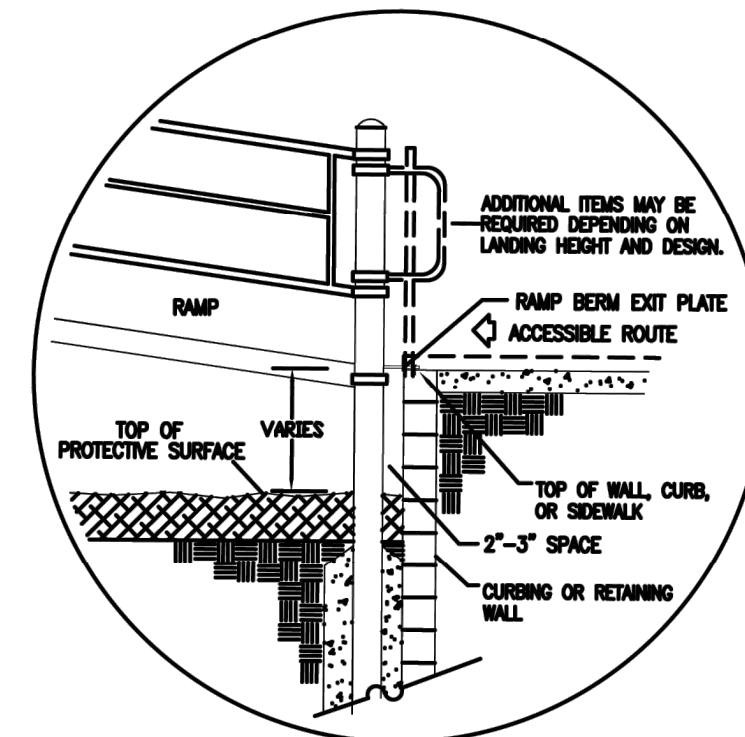
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CITY OF WINDSOR HEIGHTS, IOWA
2023 COLBY PARK IMPROVEMENTS
PLAYGROUND LAYOUT PLAN

SHEET

D.07

PlayBooster®EvoS®and Forma™
(5-12 years)
Max Fall Height: 144 inches



SUGGESTED ELEVATED RAMP BERM EXIT PLATE
24" PLUS DECK TO GRADE/DB INSTALLATION
REFER TO RAMP BERM EXIT PLATE INSTALLATION SHEET
SEE PLAN FOR ELEVATION OF PLATE

landscape
structures

IT IS THE MANUFACTURERS OPINION AND
INTENT THAT THE USE AND LAYOUT OF
THESE COMPONENTS CONFORM WITH THE
AMERICAN SOCIETY FOR TESTING AND
MATERIALS (ASTM) STANDARD ASTM F1487

THIS PLAY AREA & PLAY EQUIPMENT IS
DESIGNED FOR AGES 2-12 YEARS
UNLESS OTHERWISE NOTED ON PLAN.

IT IS THE MANUFACTURERS OPINION THAT
THIS PLAY AREA DOES CONFORM TO
THE A.D.A. ACCESSIBILITY STANDARDS,
ASSUMING AN ACCESSIBLE PROTECTIVE
SURFACING IS PROVIDED, AS INDICATED, OR
WITHIN THE ENTIRE USE ZONE.

THIS CONCEPTUAL PLAN WAS BASED ON
INFORMATION AVAILABLE TO US. PRIOR TO
CONSTRUCTION, DETAILED SITE INFORMATION
INCLUDING SITE DIMENSIONS, TOPOGRAPHY, EXISTING
UTILITIES, SOIL CONDITIONS, AND DRAINAGE
SOLUTIONS SHOULD BE OBTAINED, EVALUATED, &
UTILIZED IN THE FINAL DESIGN. PLEASE VERIFY ALL
DIMENSIONS OF PLAY AREA, SIZE, ORIENTATION, AND
LOCATION OF ALL EXISTING UTILITIES, EQUIPMENT,
AND SITE FURNISHINGS PRIOR TO ORDERING. SLIDES
SHOULD NOT FACE THE HOT AFTERNOON SUN.

CHOOSE A PROTECTIVE SURFACING MATERIAL THAT
HAS A CRITICAL HEIGHT VALUE TO MEET THE
MAXIMUM FALL HEIGHT FOR THE EQUIPMENT (REF.
ASTM F1487 STANDARD CONSUMER SAFETY
PERFORMANCE SPECIFICATION FOR PLAYGROUND
EQUIPMENT FOR PUBLIC USE, SECTION 8 CURRENT
REVISION). THE SUBSURFACE MUST BE WELL
DRAINED. IF THE SOIL DOES NOT DRAIN NATURALLY
IT MUST BE TILED OR SLOPED 1/8" TO 1/4" PER
FOOT TO A STORM SEWER OR A "FRENCH DRAIN".

DESIGNED BY:
DEW

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LANDSCAPE STRUCTURES, INC.
601 7th STREET SOUTH - P.O. BOX 198
DELANO, MINNESOTA 55328
PH: 1-800-328-0035 FAX: 1-763-972-6091

7/6/2023	1171503-02-02	VAO
5/11/23	1171503-02-01	VAO
4/19/23	1171503-01-01	VAO
Date	Previous Drawing #	Initials

ONE LINE/SCHEDULE GENERAL NOTES	
SYMBOL	DESCRIPTION
[LSIG]	ELECTRONIC TRIP CIRCUIT BREAKER (LONG TIME, SHORT TIME, INST. GROUND FAULT)
[LSI]	ELECTRONIC TRIP CIRCUIT BREAKER (LONG TIME, SHORT TIME, INST)
[LSIA]	ELECTRONIC TRIP CIRCUIT BREAKER (LONG TIME, SHORT TIME, INST. GROUND FAULT ALARM)
HL	HANDLE LOCK
SD	DENOTES SERVICE DISCONNECT
(ST)	120V SHUNT TRIP OPERATOR
(GF)	GROUND FAULT CIRCUIT INTERRUPTER
(E)	EXISTING BREAKER IN EXISTING PANEL
(N)	NEW BREAKER IN EXISTING PANEL
(NE)	NEW BREAKER, EXTEND EXISTING LOAD

GENERAL ELECTRICAL SYMBOLS	
	CONNECTION TO MECHANICAL EQUIPMENT
	ELECTRICAL CNNECTION TO MISC EQUIPMENT
	BOILER EMERGENCY STOP PUSH BUTTON. ONE NORMALLY OPEN AND ONE NORMALLY CLOSED CONTACT. RED MUSHROOM HEAD WITH ALARMED. CLEAR, HINGED COVER. PROVIDE WITH ENGRAVED LABEL, "EMERGENCY BOILER SHUT-DOWN"
	DIGITAL POWER METER, LCD DISPLAY, MONITORING OF VOLTAGE, CURRENT, POWER, PF, FREQUENCY, MIN/MAX AND AVERAGE VALUES, AND ENERGY
	PANELBOARD - SEE SCHEDULES FOR MORE INFORMATION
	TRANSFORMER - SEE SCHEDULES FOR MORE INFORMATION
	SWITCHBOARD - SEE SCHEDULES FOR MORE INFORMATION
	TRANSFORMER - SEE SCHEDULES FOR MORE INFORMATION
	DISCONNECT SWITCH. HEAVY DUTY. SIZE INDICATED ON PLANS (A/B/C) WHERE A = RATING IN AMPS, B = NUMBER OF POLES, C = NEMA RATING (E.G. 1 = NEMA 1). XXX = NAME OF LOAD SERVED
	POWER METER

GENERAL ELECTRICAL SYMBOLS	
C.M.	CONSTRUCTION MANAGER
M.C.	MECHANICAL CONTRACTOR
P.C.	PLUMBING/PIPING CONTRACTOR
E.C.	ELECTRICAL CONTRACTOR
A.T.C.	AUTOMATIC TEMPERATURE CONTROLS CONTRACTOR
G.C.	GENERAL CONTRACTOR
F.P.C.	FIRE PROTECTION CONTRACTOR
K.E.C.	KITCHEN EQUIPMENT CONTRACTOR
EQUIPMENT	SCHEDULED EQUIPMENT (UNDERLINED)
EQUIPMENT	NON-SCHEDULED EQUIPMENT
X_EQUIPMENT	EXISTING EQUIPMENT (X_ PREFIX)
A	6" ABOVE COUNTER OR BACKSPLASH TO CENTERLINE OF DEVICE
M	INSTALL DEVICE IN MILLWORK
XX	LOCATION-SPECIFIC MOUNTING HEIGHT ABOVE FINISHED FLOOR TO CENTERLINE OF DEVICE
H	INSTALL DEVICE HORIZONTALLY
B	BLACK DEVICE COLOR WITH BLACK UNBREAKABLE THERMOPLASTIC COVER PLATE
/	USED BETWEEN TWO OR MORE SUBSCRIPTS
	SECTION VIEW. TOP REPRESENTS DETAIL NUMBER, BOTTOM REPRESENTS SHEET NUMBER

GENERAL LIGHTING SYMBOLS	
SYMBOL	DESCRIPTION
	DOUBLE FACED EXIT SIGN
	SINGLE FACED EXIT SIGN
	RECESSED ARCHITECTURAL TROFFER
	RECESSED DOWNLIGHT
	EMERGENCY FIXTURE
	POLE MOUNTED SITE FIXTURE
	POLE MOUNTED SITE FIXTURE
	INDUSTRIAL FIXTURE
	SURFACE OR PENDANT LINEAR FIXTURE
	SURFACE OR PENDANT CIRCULAR FIXTURE
	WALL MOUNTED FIXTURE
	WALL SCONCE

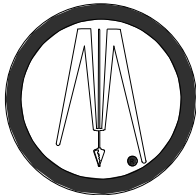
GENERAL SWITCH SYMBOLS	
SYMBOL	DESCRIPTION
	SWITCH.REFER TO SUBSCRIPT SCHEDULE FOR MORE INFORMATION.
	REFER TO SUBSCRIPT SCHEDULE FOR MORE INFORMATION
	REFER TO SUBSCRIPT SCHEDULE FOR MORE INFORMATION
	REFER TO SUBSCRIPT SCHEDULE FOR MORE INFORMATION

GENERAL POWER SYMBOLS	
SYMBOL	DESCRIPTION
	DUPLEX RECEPTACLE, NEMA 5-20R, EMERGENCY POWER
	DUPLEX RECEPTACLE. REFER TO SUBSCRIPT SCHEDULE FOR MORE INFORMATION.
	CORD REEL
	CORD DROP
	DOUBLE DUPLEX RECEPTACLE, NEMA 5-20R
	SIMPLEX RECEPTACLE, NEMA 5-20R
	SPECIAL RECEPTACLE
	RECESSED FLOOR BOX OR POKE-THRU
	DOUBLE DUPLEX RECEPTACLE, NEMA 5-20R, EMERGENCY POWER

DEMOLITION NOTES	
1.	REFER TO SPECIFICATION SECTION 260502 FOR ADDITIONAL DEMOLITION INFORMATION.
2.	REMOVE POWER, LIGHTING, CONTROL, AND COMMUNICATIONS DEVICES SHOWN, UNLESS NOTED OTHERWISE. REMOVE ALL UNUSED CONDUIT, RACEWAYS, WIRING, JUNCTION BOXES, DISCONNECTS, AND ACCESSORIES COMPLETELY BACK TO THE SOURCE.
3.	MAKE PROVISIONS AND BACK-FEED OR RE-CIRCUIT ANY ITEMS THAT ARE EXISTING TO REMAIN WHICH ARE AFFECTED BY DEMOLITION.
4.	INVESTIGATION OF EXISTING POWER AND LIGHTING SYSTEMS WILL BE REQUIRED BY THE E.C. AS PART OF THE BIDDING PROCESS TO DETERMINE THE FULL EXTENT OF DEMOLITION WORK REQUIRED. THE E.C. SHALL BE RESPONSIBLE FOR REMOVAL OF SOME PORTIONS OF POWER AND LIGHTING SYSTEMS NOT EXPLICITLY SHOWN ON THESE DRAWINGS, BUT ARE REQUIRED FOR THE PROJECT.
5.	E.C. SHALL FIELD VERIFY ACTUAL LOCATION AND SIZES OF EXISTING CONDUIT, WIRING, AND EQUIPMENT.
6.	PROTECT ALL FINISHED SURFACES THAT ARE NOT SCHEDULED FOR DEMOLITION. IF DAMAGED, THE RESPONSIBLE CONTRACTOR SHALL REPAIR TO MATCH EXISTING CONDITIONS AT NO ADDITIONAL COST TO THE OWNER.
7.	ALL SALVAGE SHALL REMAIN THE PROPERTY OF THE OWNER. DELIVER TO A LOCATION ON SITE AS DESIGNATED BY THE OWNER. IN THE EVENT THE OWNER DOES NOT WANT TO RETAIN THE SALVAGE MATERIAL, THE MATERIAL BECOMES THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OR RECYCLED BY THE CONTRACTOR.

GENERAL ELECTRICAL NOTES	
1.	ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH N.E.C., LOCAL, AND ALL OTHER APPLICABLE CODES.
2.	INSTALLATION OF EQUIPMENT SHALL BE IN ACCORDANCE WITH CURRENT STANDARDS AND SPECIFICATIONS APPROVED BY THE AUTHORITY HAVING JURISDICTION (AHJ). PLACE ALL CABLE/WIRING IN CONDUIT OR RACEWAY UNLESS NOTED OTHERWISE. PROVIDE NEW WIRING FOR ALL BRANCH CIRCUITS AND FEEDERS.
3.	FEEDERS ON DRAWINGS ARE SCHEMATIC ONLY. CONDUIT RUNS SHALL COMPLY WITH CONDUIT SPECIFICATIONS AND CONTAIN BENDS THAT ARE NOT GREATER THAN 90 DEGREES.
4.	ALL FEEDER AND BRANCH CIRCUITS TO PANELS, MOTORS, LIGHTS, RECEPTACLES, GENERAL DISTRIBUTION, ETC. SHALL CONTAIN AN EQUIPMENT GROUNDING CONDUCTOR SIZED ACCORDING TO THE N.E.C. THE CONDUIT SYSTEM SHALL NOT BE CONSIDERED AN ACCEPTABLE GROUND.
5.	ALL WIRING AND FEEDER SIZES ON DRAWINGS ARE SIZED FOR COPPER WIRING UNLESS SPECIFICALLY NOTED OTHERWISE.
EQUIPMENT/DEVICE HOME RUN KEY	
1.	BRANCH CIRCUIT WIRING SHALL BE #10AWG UNLESS NOTED OTHERWISE ON THE PLAN OR IN THE SCHEDULES.
2.	AS A MINIMUM USE 10 AWG CONDUCTOR FOR 20 AMPERE, 120 VOLT BRANCH CIRCUIT HOME RUNS LONGER THAN 100 FEET.
3.	REFER TO SPECIFICATION SECTION 260519 FOR ADDITIONAL REQUIREMENTS.
LINE TYPE KEY	
	NEW WORK BY THE E.C. (DARK SOLID LINE)
	NEW UNDERGROUND WORK BY THE E.C. (DARK DASHED LINE)
	WORK BY OTHERS AND/OR EXISTING (LIGHT SOLID LINE)
	DEMO WORK BY THE E.C. (DARK DASHED LINE)

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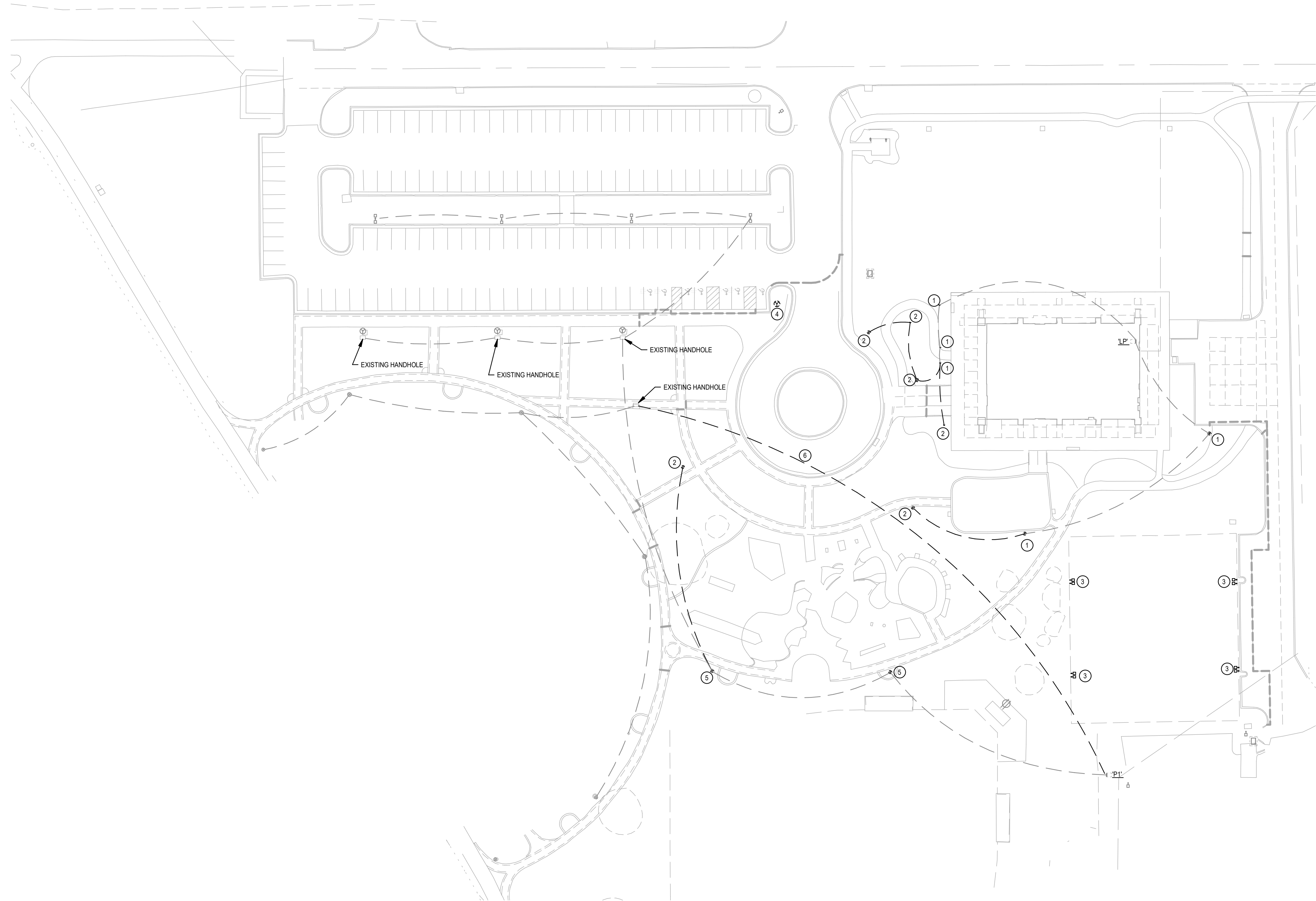
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CITY OF WINDSOR HEIGHTS, IOWA
2023 COLBY PARK IMPROVEMENTS
ELECTRICAL COVER SHEET

SHEET

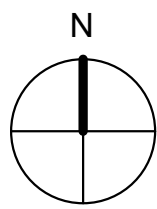
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KEYED NOTES:

1. REMOVE LIGHT FIXTURE. MAINTAIN BASE AND WIRING FOR USE WITH NEW LIGHT FIXTURE IN SAME LOCATION.
2. REMOVE LIGHT FIXTURE, BASE, AND WIRE BACK TO LOCATION OF LAST EXISTING LIGHT FIXTURE LOCATION TO REMAIN. ABANDON THE EXISTING CONDUIT IN PLACE.
3. DEMO EXISTING TENNIS COURT LIGHTING, POLES, CONDUIT, AND CONDUCTORS BACK TO PANEL "P1".
4. DISCONNECT B-CYCLE POWER CONNECTION FOR RELOCATION. CONTRACTOR SHALL COORDINATE WITH DSM B-CYCLE PRIOR TO DISCONNECTING AND RELOCATING.
5. REMOVE LIGHT FIXTURE AND BASE. A HAND HOLE IS TO BE INSTALLED IN THIS LOCATION DURING CONSTRUCTION FOR SPLICING AND EXTENDING EXISTING CIRCUITS.
6. DISCONNECT THE EXISTING LIGHTING CIRCUIT AND REMOVE WIRE FROM HANDHOLE TO PANEL. CONDUIT TO BE ABANDONED IN PLACE. CIRCUITS SHALL BE REFEED DURING CONSTRUCTION TO AVOID THE PLAYGROUND.



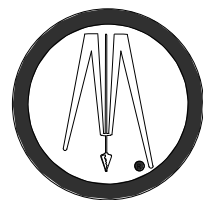
1 ELECTRICAL DEMO PLAN
1" = 40'-0"

5518 NW 88th Street
Johnston, IA 50131
515-727-0700
www.bluestonemep.com/
Project #: 123-004A

bluestone
engineering

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CITY OF WINDSOR HEIGHTS, IOWA
2023 COLBY PARK IMPROVEMENTS
ELECTRICAL DEMO PLAN

SHEET

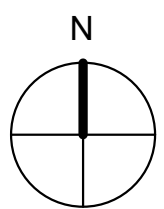
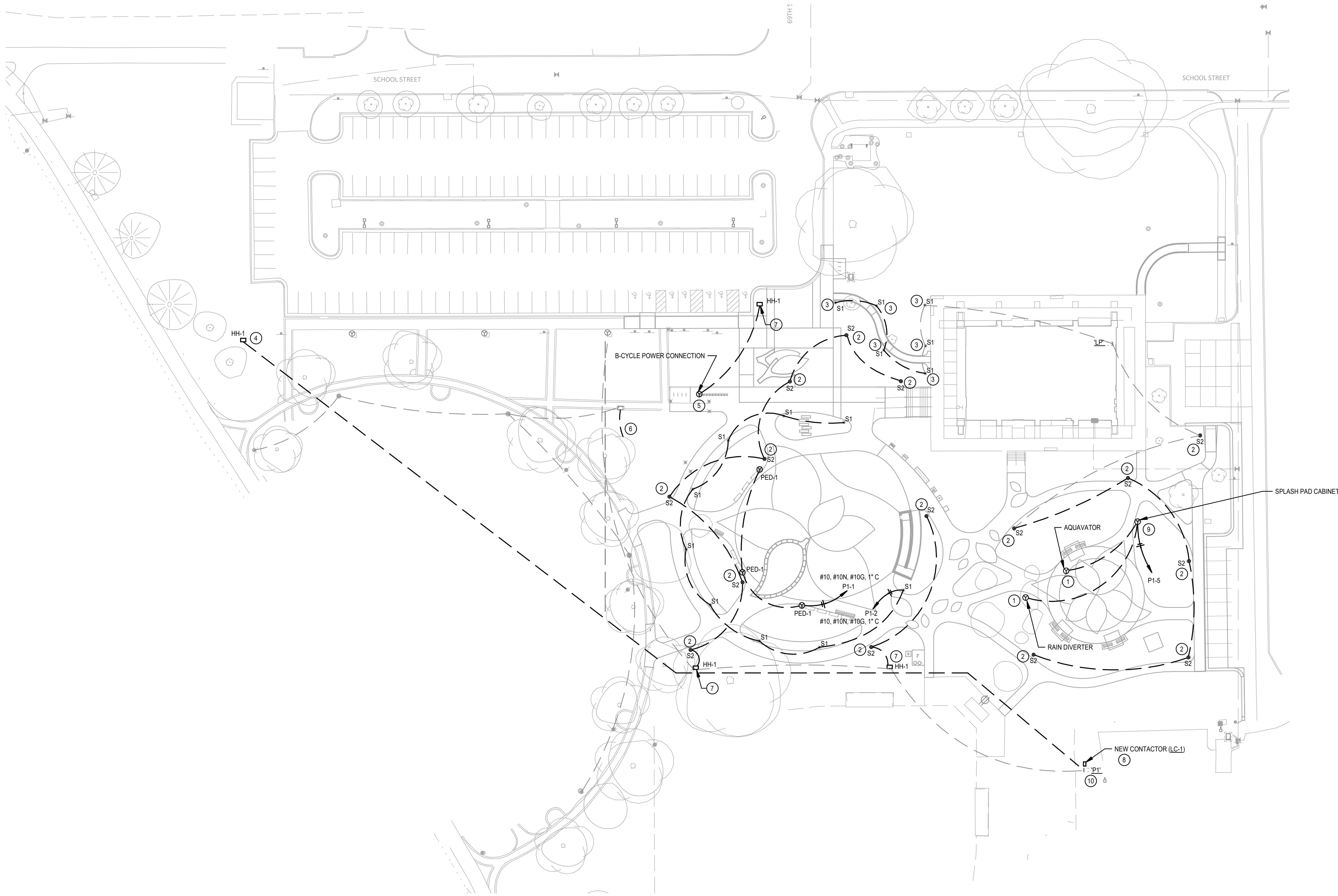
ED.10

GENERAL NOTES:

- SEE SHEET E.50 FOR DETAILS AND SCHEDULES.
- CONDUITS AND WIRES SHALL NOT BE ROUTED UNDER THE PLAYGROUND OR SPLASH PAD AREA.

KEYED NOTES:

- INSTALL 1" CONDUIT FROM SPASH PAD CONTROLLER TO AQUAVATOR AND 1" CONDUIT FROM SPASH PAD CONTROLLER TO RAIN DIVERTER. CONFIRM LOCATION OF AQUAVATOR AND RAIN DIVERTER WITH SPASH PAD INSTALLER.
- UTILIZE THE EXISTING SITE LIGHT CIRCUIT FOR THE NEW POLE FIXTURES. EXTEND CIRCUIT TO NEW LIGHT FIXTURE LOCATIONS. 2#10, #10N, #10G, 1" CONDUIT.
- UTILIZE THE EXISTING SITE LIGHT CIRCUIT FOR THE NEW BOLLARD. EXTEND CIRCUIT TO NEW LIGHT FIXTURE LOCATIONS. #10, #10N, #10G, 1" CONDUIT.
- INSTALL THREE 1" CONDUITS AND ONE 1 1/2" CONDUIT FROM PANEL TO NEW HANDHOLE ON PLANS FOR FUTURE TENNIS COURT LIGHTING. INSTALL PULL STRING IN EACH CONDUIT.
- EXTEND EXISTING CIRCUIT SERVING THE B-CYCLE POWER CONNECTION TO NEW LOCATION. #10, #10N, #10G, 1" CONDUIT.
- PUMP OUT AND CLEAN WATER AND MUD OUT OF THE EXISTING HAND HOLD. REFEED LIGHTING CIRCUITS FROM PANEL P1 TO AVOID THE PLAYGROUND. 2#10, #10N, #10G, 1" CONDUIT.
- INSTALL NEW HANDHOLES AT THE PREVIOUS LOCATION OF SITE LIGHT FIXTURES OR ELECTRICAL CONNECTION AS A SPLICE POINT FOR THE EXISTING CIRCUITS.
- INSTALL NEW LIGHTING CONTACTOR (LC-1) FOR SITE LIGHTING. THE EXISTING PHOTOCELL NEAR PANEL P1 SHALL CONTROL THE NEW LIGHTING CONTACTOR. CONTROL WITH CIRCUIT P1-3. MOUNT LC-1 TO THE EXISTING UNISTRUT RACK.
- INSTALL BONDING AND EQUIPMENT GROUNDING IN ACCORDANCE WITH NEC 680.6 FOR ALL ELECTRICAL EQUIPMENT ASSOCIATED WITH THE SPLASH PAD.
- ELECTRICAL CONTRACTOR SHALL VERIFY THE CIRCUITING OF THE EXISTING LOADS IN PANEL P1. PROVIDE UPDATED PANEL SCHEDULE AT END OF PROJECT.



1

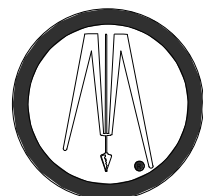
ELECTRICAL SITE PLAN

1" = 40'-0"



HORZ. SCALE
0 40 80
FEET

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CITY OF WINDSOR HEIGHTS, IOWA

2023 COLBY PARK IMPROVEMENTS

ELECTRICAL SITE PLAN

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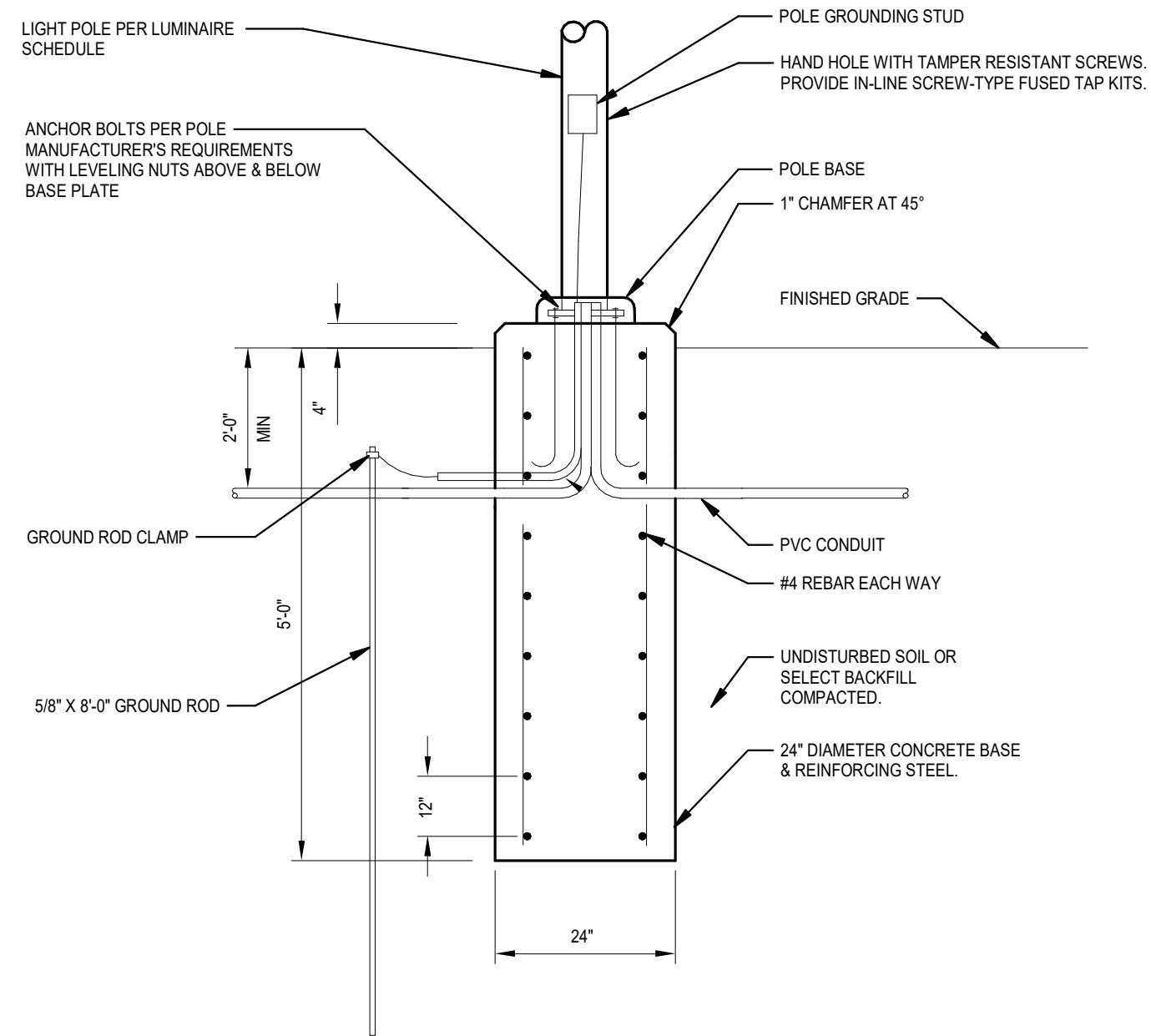
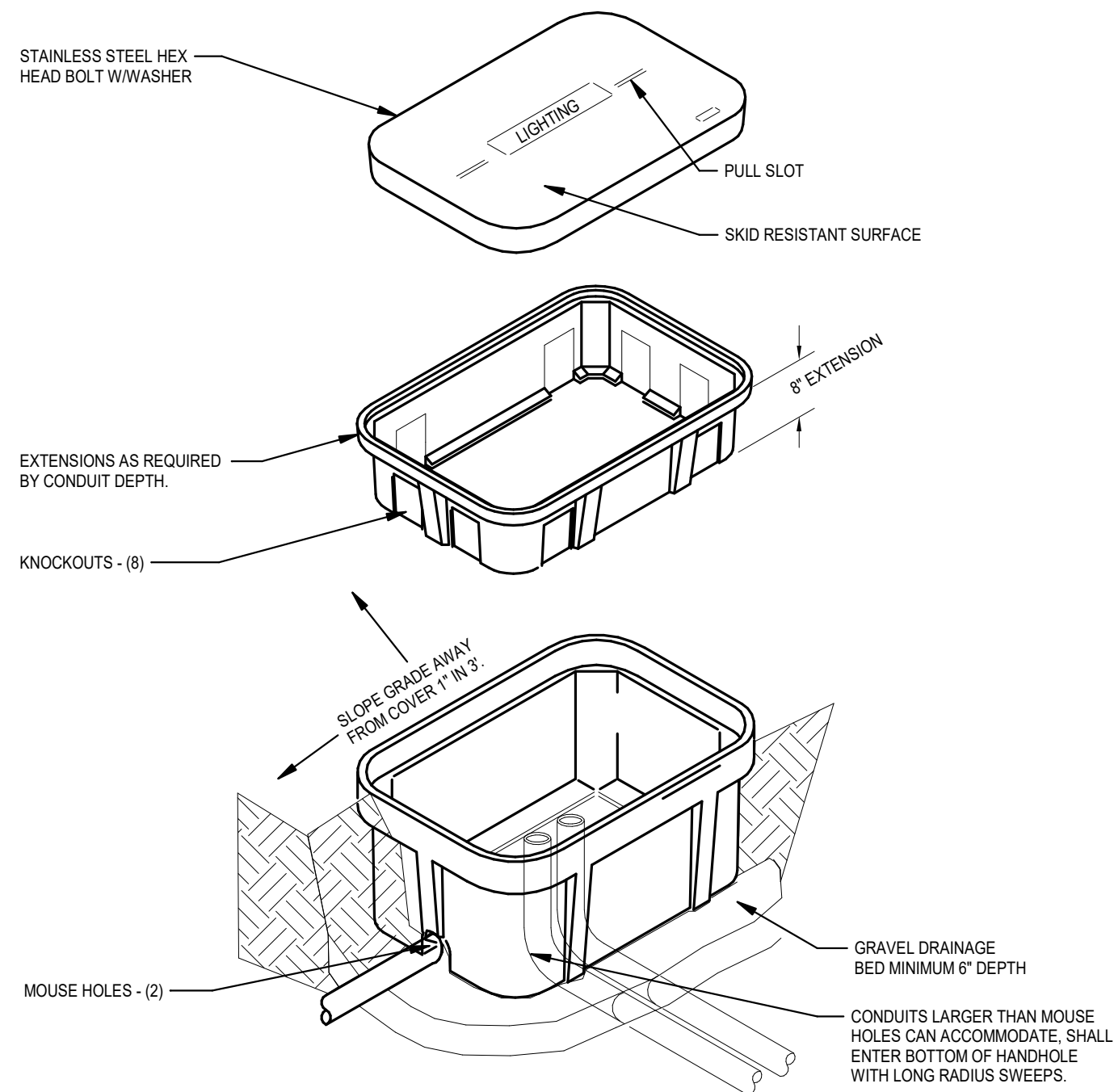
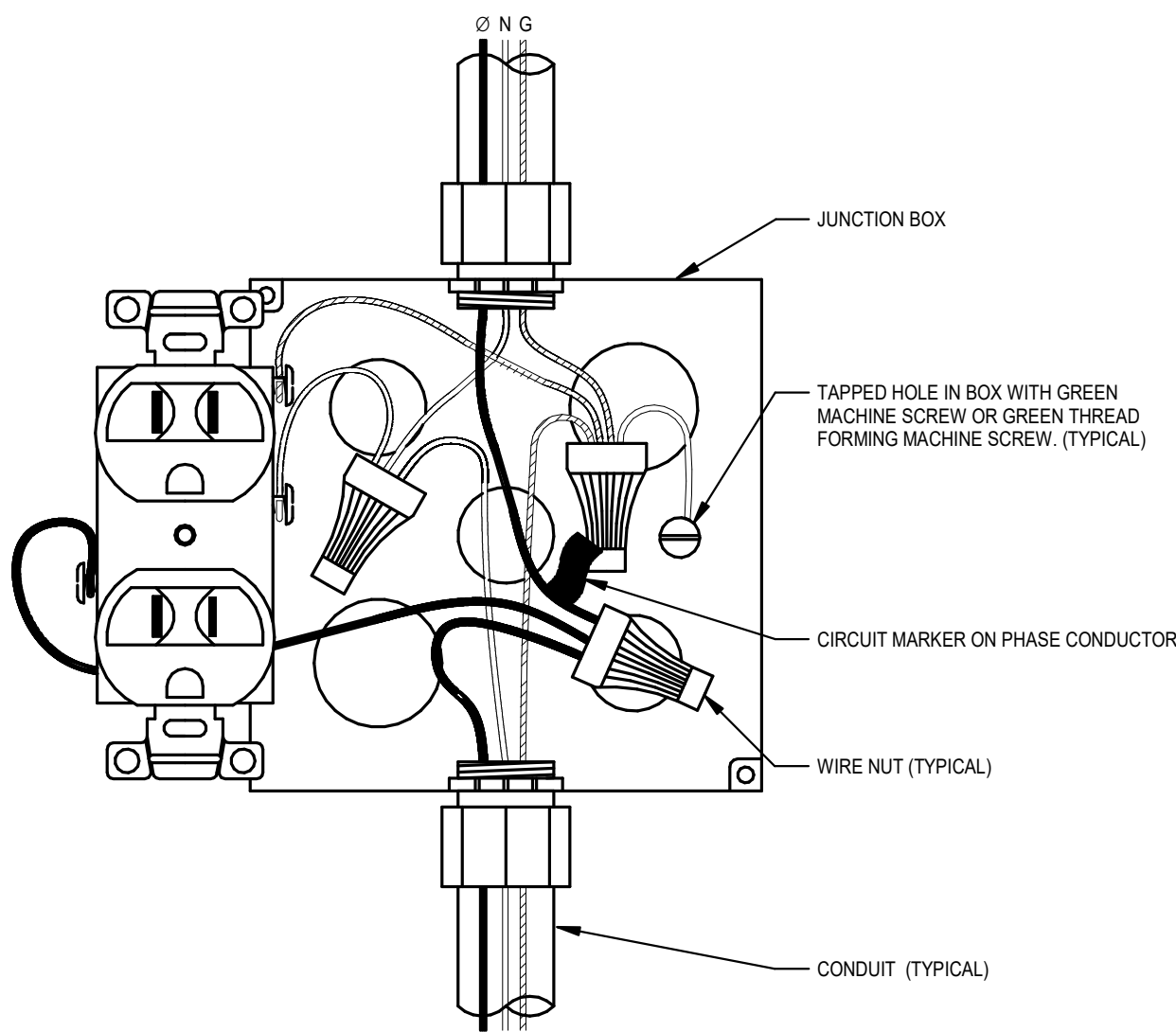
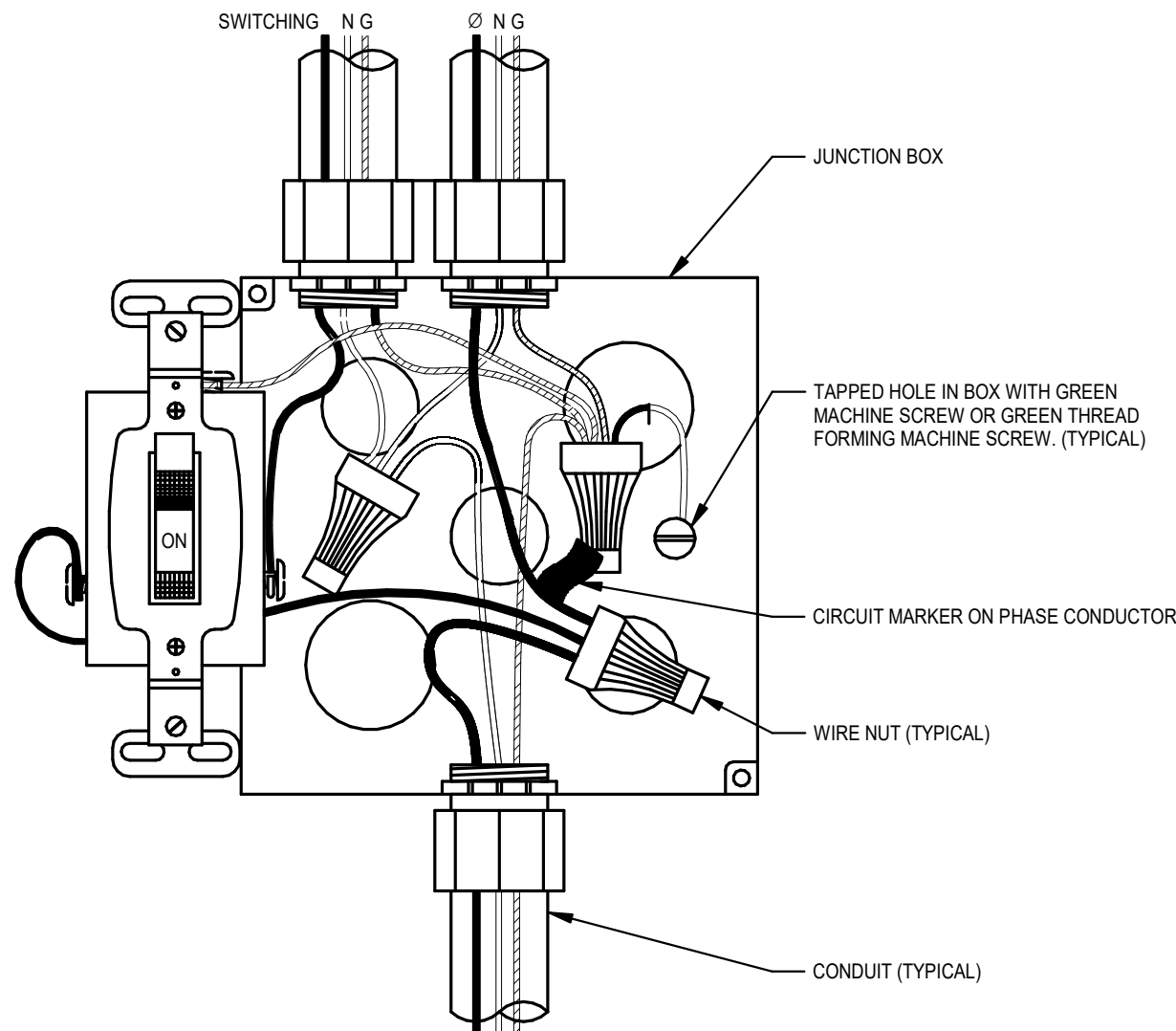
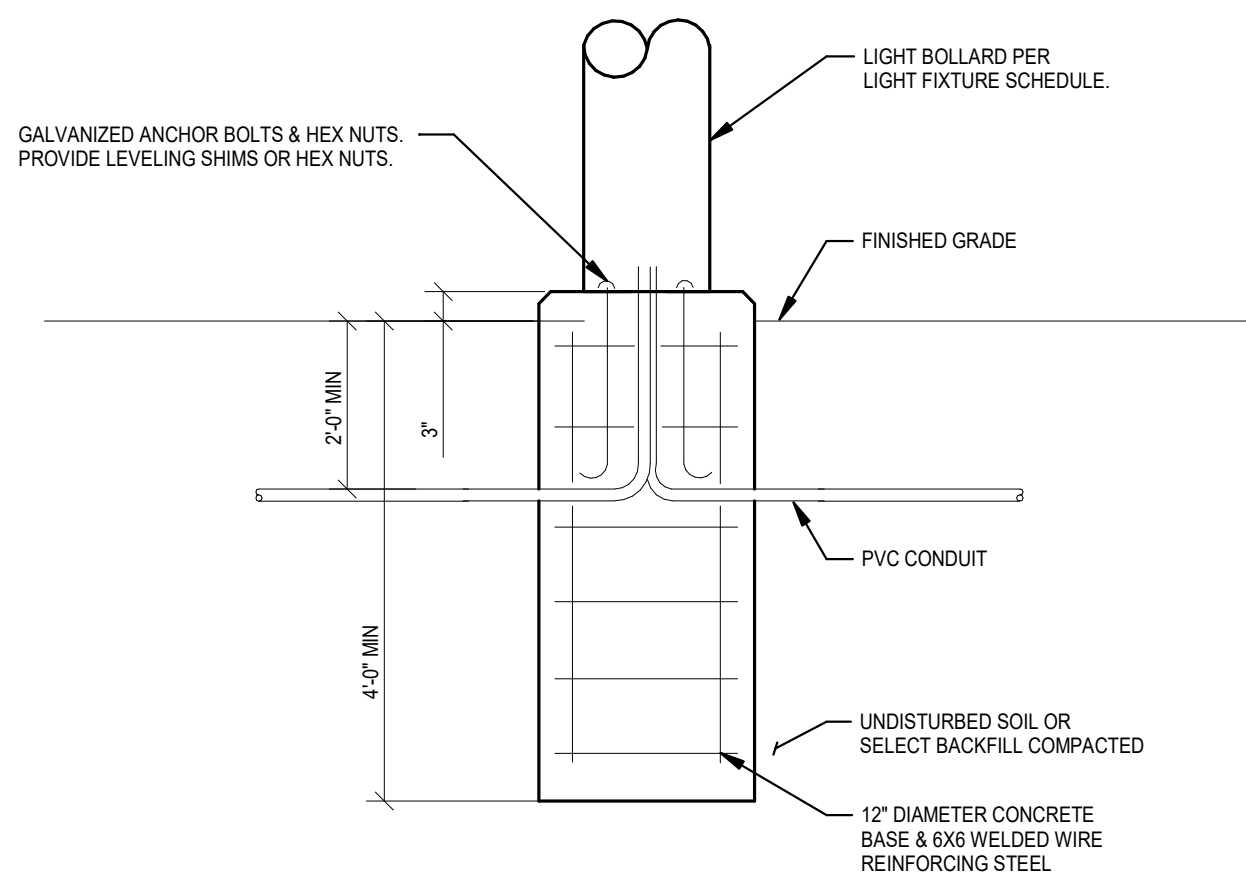
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LUMINAIRE SCHEDULE									
TYPE	DESCRIPTION	MANUFACTURER	MODEL	WATTS	LIGHT SOURCE	POWER SUPPLY	MOUNTING	VOLT	ACCEPTABLE MANUFACTURERS
S1	DECORATIVE BOLLARD, 36" TALL, BLACK FINISH, MINIMUM 700 DELIVERED LUMENS, REFER TO BOLLARD BASE DETAIL 4/E.50.	INVUE	ABB	16 W	LED	LED DRIVER	BOLLARD	120 V	PRE-APPROVED EQUAL
S2	SINGLE-HEADPOST-TOP PEDESTRIAN SCALE AREA LIGHT, MINIMUM 4500 DELIVERED LUMENS, IESNA TYPE V DISTRIBUTION, ALUMINUM CONSTRUCTION, MULTI-VOLT DRIVER, BLACK FINISH, PROVIDE GFI RECEPTACLE WITH WHITE IN USE COVER NEAR TOP OF POLE. RECEPTACLE SHALL BE CONTROLLED WITH LIGHTING. REFER TO STANDARD POLE BASE DETAIL 1/E.50.	INVUE	ARB	48 W	LED	LED DRIVER	12" POLE	240 V	PRE-APPROVED EQUAL

GENERAL ELECTRICAL SCHEDULE		
SYMBOL	DESCRIPTION	MANUFACTURER
HH-1	IN GRADE HAND HOLE WITH GASKETED COVER, 12"X12", POLYMER CONCRETE, REFER TO DETAIL 2/E 50	QUAZITE PC1212BA13/PC1212HA00 HUBBELL POWER SYSTEMS
PED-1	CHARGING STATION PEDESTAL, NEMA 3R RATING, TWO GFI DUPLEX RECEPTACLES WITH WHILE-IN-USE COVER DOOR, 34" HEIGHT, BLACK FINISH	LEGRAND XCSP3GRRU-BK
LC-1	8 POLE LIGHTING CONTACTOR IN LOCKABLE NEMA 3R ENCLOSURE, GREEN INDICATOR LIGHT, 120V COIL	SQUARE D SIEMENS GENERAL ELECTRIC CUTLER-HAMMER

[illegible]

4 BOLLARD BASE

3 RECEPTACLE-SWITCH WIRING DETAIL

1. GREEN GROUND CONDUCTOR SHALL BE CONTINUOUS SO THAT REMOVAL OF DEVICE WILL NOT INTERFERE WITH GROUND CONTINUITY PER 250.148 (B).
2. INSTALL AN EQUIPMENT BONDING JUMPER TO THE METALLIC BOX USING A LISTED GROUNDING SCREW PER 250.146. THE BONDING JUMPER MAY BE OMITTED ON SURFACE MOUNTED BOXES.
3. PROVIDE SEPARATE NEUTRAL FOR EACH CIRCUIT.

2 HANDHOLE

1. REFER TO GENERAL ELECTRICAL SCHEDULE FOR SIZE OF HANDHOLE.

1 POLE BASE STANDARD

1. REINFORCING SHALL BE (8) #4 VERTICAL BARS AND #4 "S" BARS AT 12" MAX SPACES
MAINTAIN 3" CLEARANCE BETWEEN STEEL AND EDGE OF CONCRETE.



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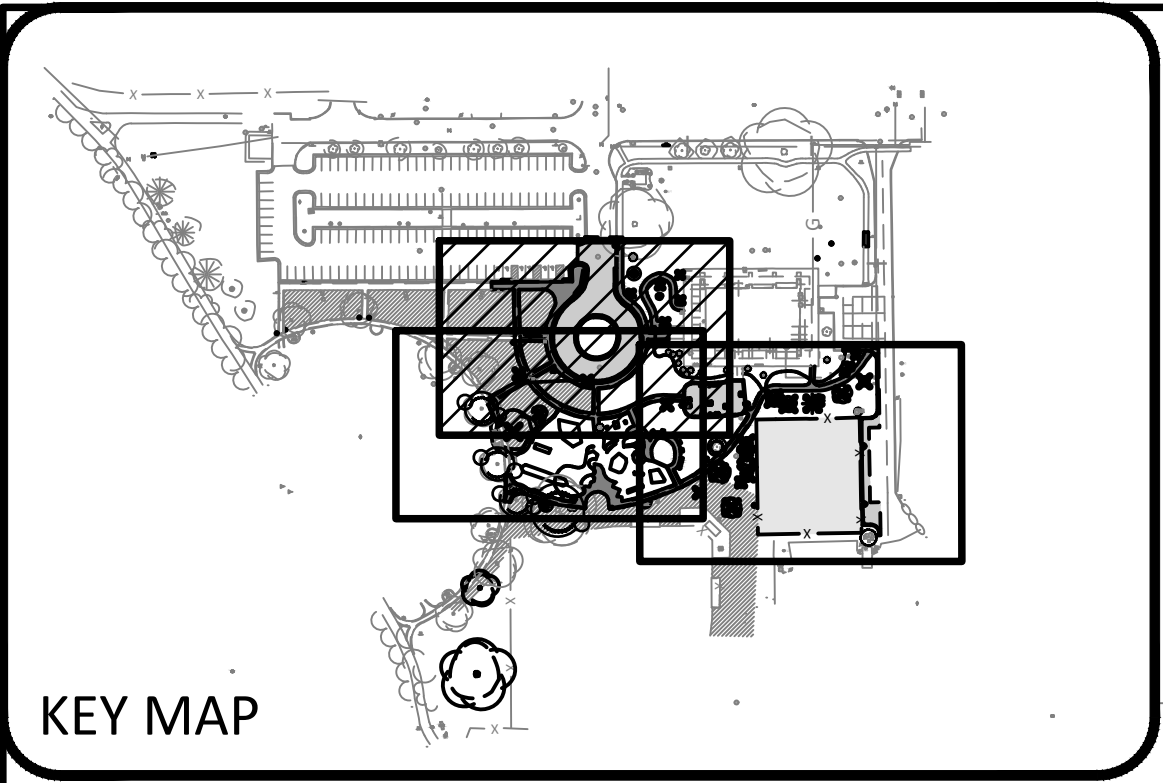
CITY OF WINDSOR HEIGHTS, IOWA

2023 COLBY PARK IMPROVEMENTS

ELECTRICAL DETAILS AND SCHEDULES

SHEET

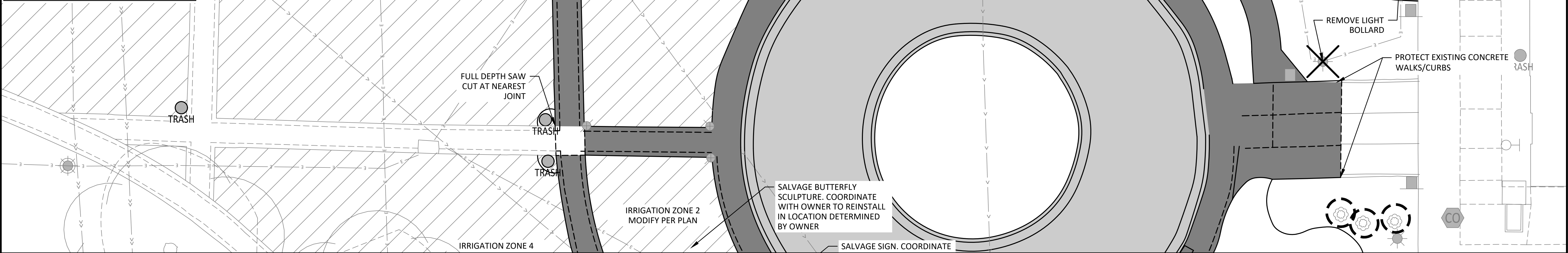
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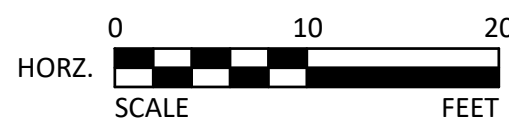
- NOTES**
1. FIELD VERIFY ALL UTILITIES PRIOR TO REMOVALS. IF THE CONTRACTOR DETERMINES THAT FIELD CONDITIONS DIFFER FROM INFORMATION PROVIDED, THEY SHALL CEASE CONSTRUCTION ACTIVITIES AND CONTACT THE ENGINEER FOR DIRECTION.
 2. SAW PAVEMENT FULL DEPTH AND IN STRAIGHT LINE (WHEN POSSIBLE) TO PROVIDE A UNIFORM EDGE.
 3. PROTECT ALL EXISTING FEATURES NOT DESIGNATED FOR REMOVAL. ALL PUBLICLY-OWNED SIGNS SHALL BE SALVAGED TO THE CITY. ALL IN GRADE UTILITY BOXES AND HANDHOLES SHALL BE COORDINATED WITH THE UTILITY PROVIDER TO BE PROTECTED OR TEMPORARILY REMOVED AND REPLACED AND/OR ADJUSTED TO NEW FINISHED GRADES.
 4. ALL SITE FURNISHING TO BE REMOVED BY THE OWNER (N.I.C) **(NEED SEVERAL WEEKS NOTICE BEFORE REMOVAL OF FRONT PLAZA AND EXISTING VEGETATION)**
 5. UNLESS NOTED OTHERWISE, ALL DEMOLISHED AND/OR REMOVED ITEMS SHALL BE HAULED COMPLETELY AWAY FROM THE SITE AND LEGALLY DISPOSED OF BY THE CONTRACTOR.
 6. ALL VOIDS REMAINING AFTER THE REMOVAL OF PIPE, MANHOLES AND INLET STRUCTURES SHALL BE FILLED AND RECOMPACTED PER IOWA DOT STANDARDS.
 7. CONTRACTOR TO COORDINATE WITH OWNER TO MODIFY OR CAP THE IRRIGATION SYSTEM AT THE NEW PROJECT EXTENTS.
 8. REFER TO ELECTRICAL DEMO PLAN FOR ADDITIONAL REMOVALS.

LEGEND

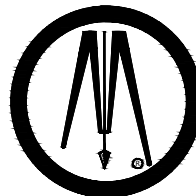
- REMOVE PAVEMENT
- REMOVE SIDEWALK
- PROTECT ITEM
- REMOVE ITEM
- CURB REMOVAL
- TREE PROTECTION FENCE



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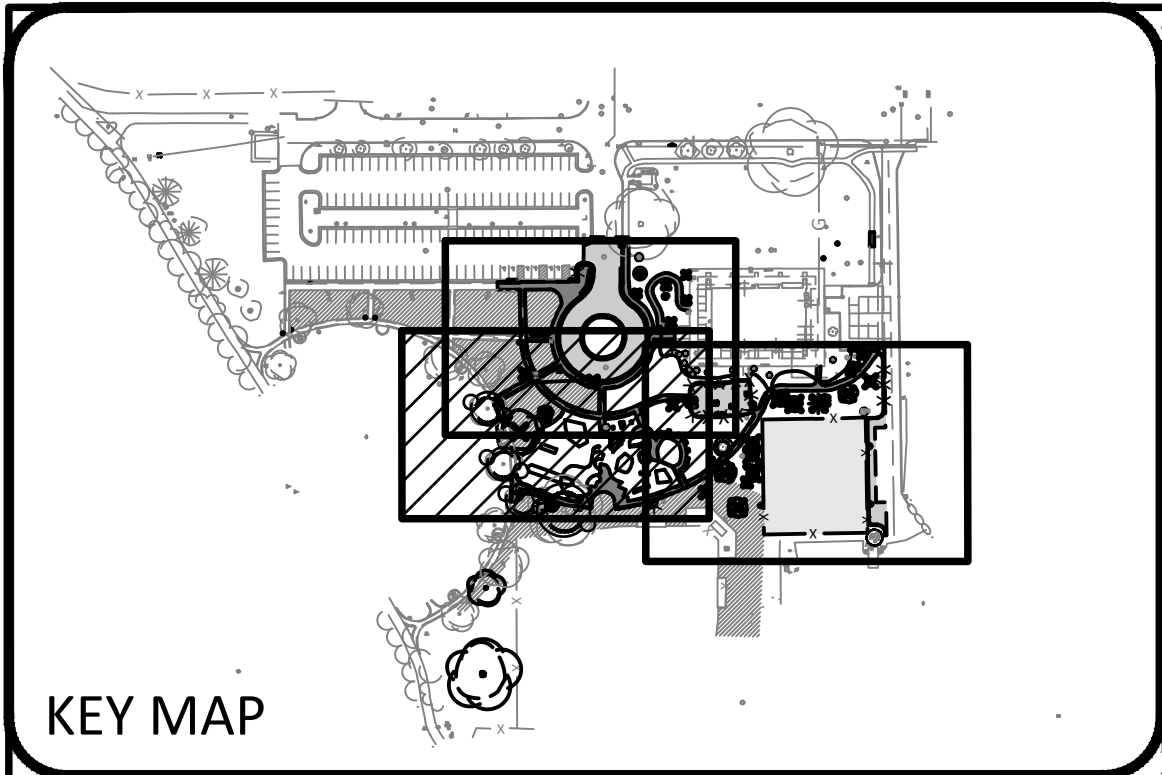
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2023 COLBY PARK IMPROVEMENTS
REMOVALS

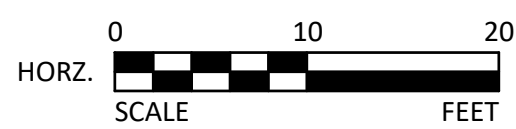
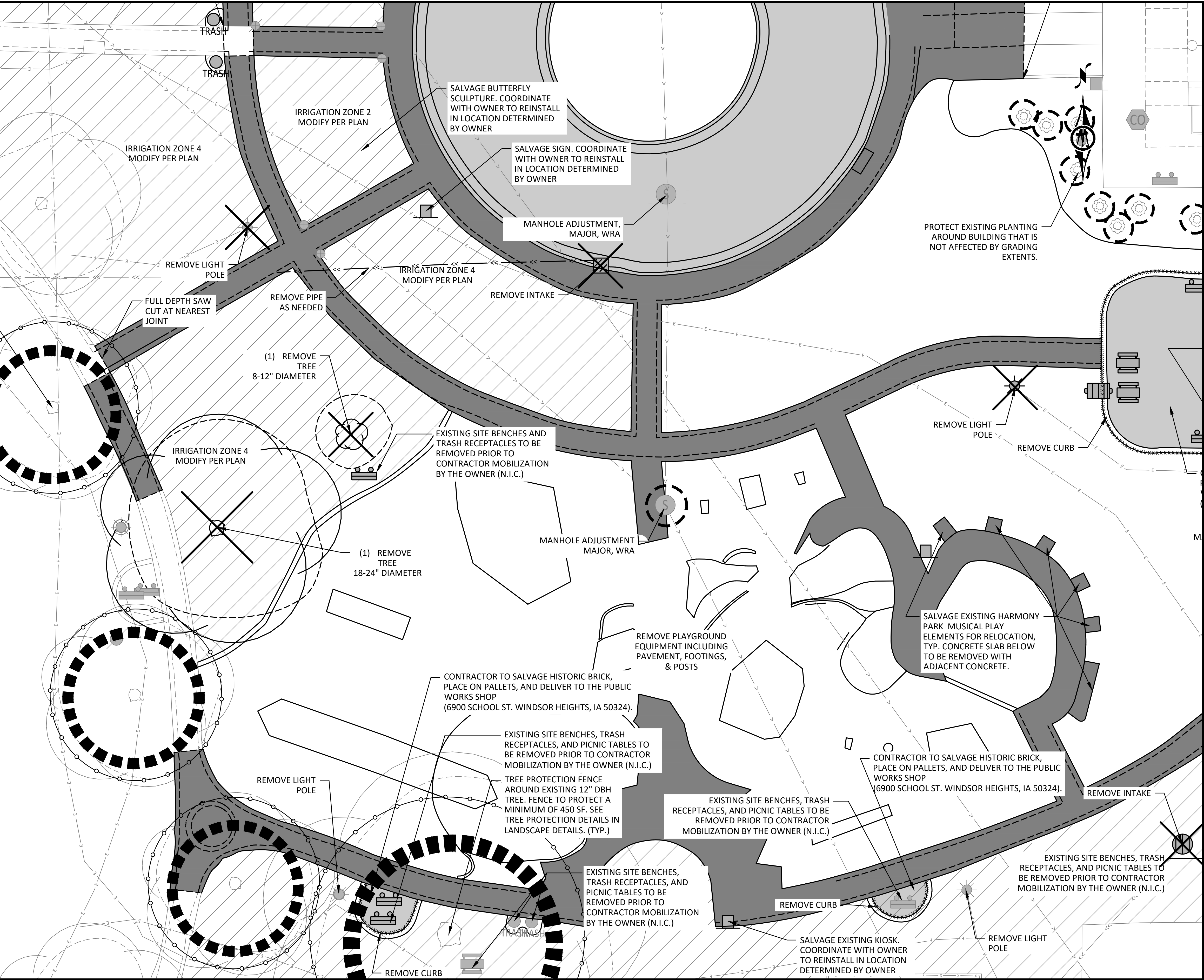
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- NOTES**
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LEGEND

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	REMOVE SIDEWALK
	PROTECT ITEM
	REMOVE ITEM
	CURB REMOVAL
	TREE PROTECTION FENCE



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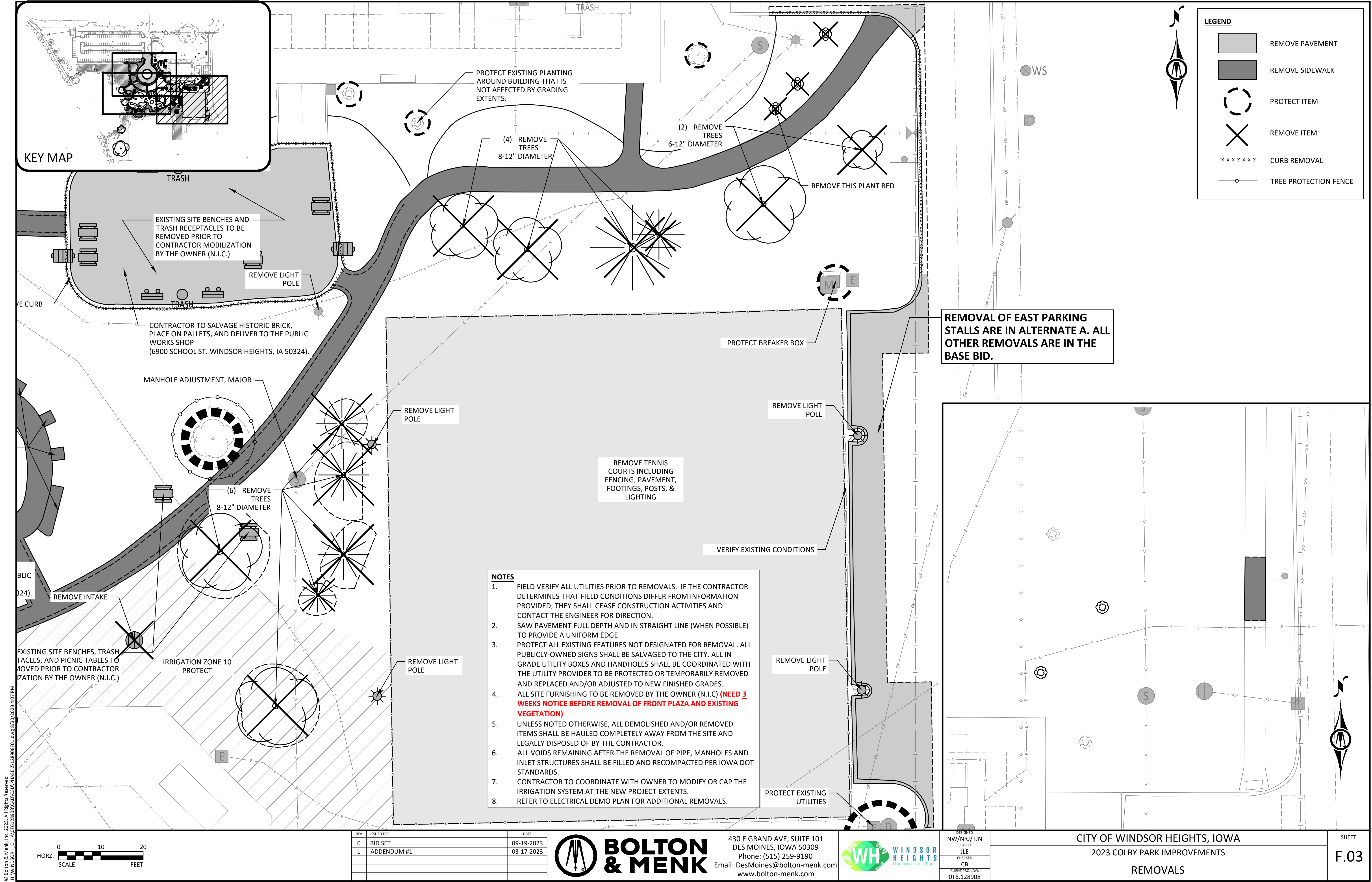
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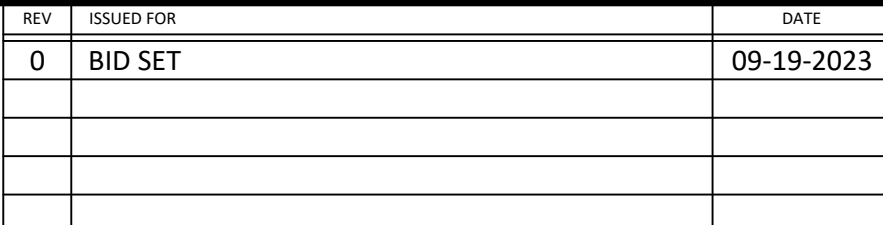
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2023 COLBY PARK IMPROVEMENTS
REMOVALS

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| CITY OF WINDSOR HEIGHTS, IOWA |
| 2023 COLBY PARK IMPROVEMENTS |
| STAGING AND TRAFFIC CONTROL |

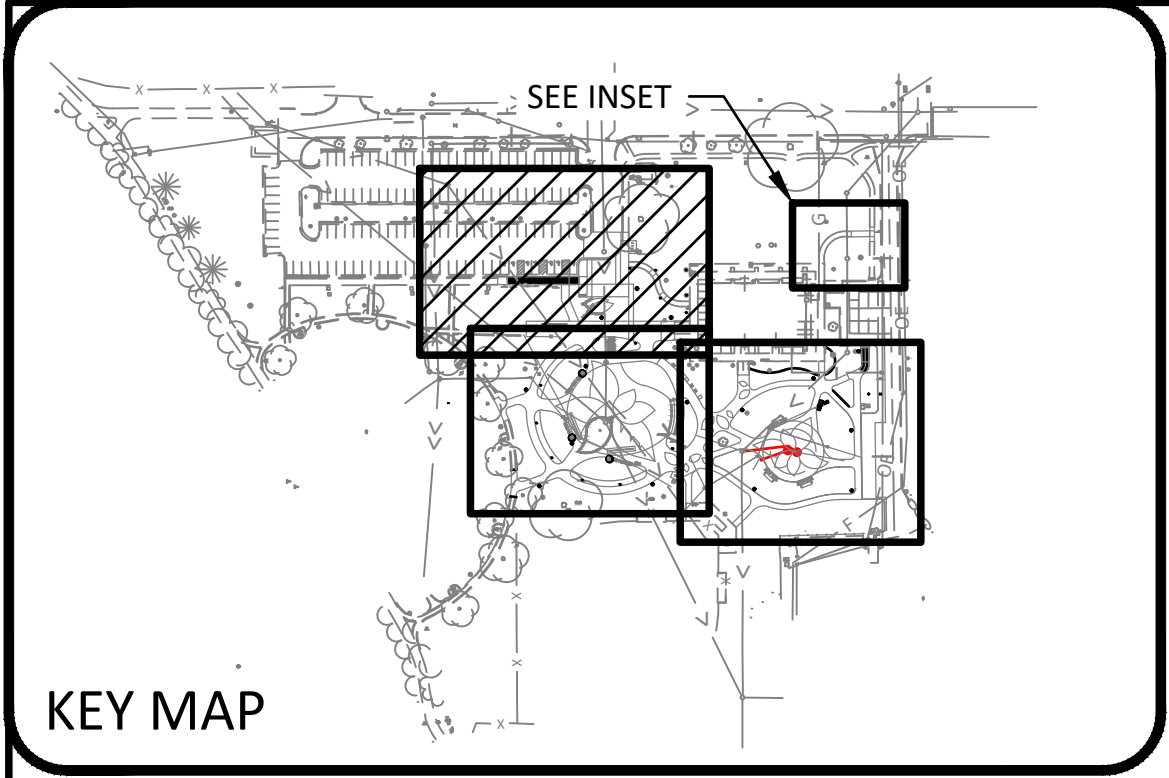


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IRRIGATION NOTES:

THE BASE BID WILL INCLUDE CAPPING ANY EXISTING IMPACTED IRRIGATION ZONES.

IN ALTERNATE D ALL AFFECTED IRRIGATION ZONES AND NEW TURF AREAS TO THE SOUTH OF THE COMMUNITY CENTER WILL HAVE NEW AND ADDITIONAL IRRIGATION.

IRRIGATION NOTES:

- CONTRACTOR IS RESPONSIBLE FOR IRRIGATION SYSTEM DESIGN & INSTALLATION. SUBMIT DESIGN DRAWINGS FOR REVIEW AND APPROVAL BY THE LANDSCAPE ARCHITECT.
- CONTRACTOR TO COORDINATE WITH IRRIGATION COMPANY ON SCHEDULING AND INSTALLATION OF DRIP LINE IRRIGATION FOR PLANTING BED AREAS.
- ALL PLANTING BEDS TO BE IRRIGATED WITH AUTOMATIC DRIP LINE IRRIGATION SYSTEM BY RAINBIRD & TURF AREAS WITH SPRAY HEADS.

OR APPROVED EQUAL.

LEGEND

LOW-GROW FESCUE
(SEE LANDSCAPE NOTES)

SOD PER SUDAS (TYP.)

EXISTING PLANTING BED

IRRIGATION EXTENTS
(ALTERNATE D)

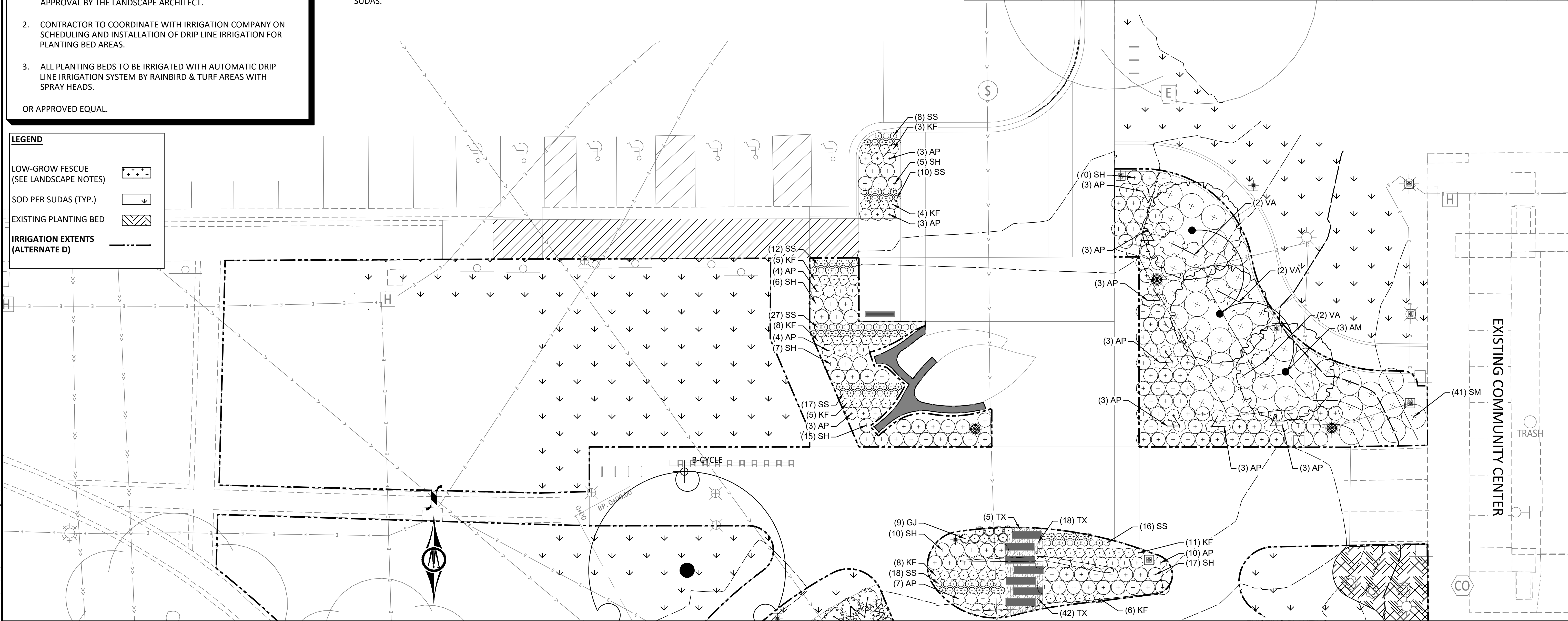
PLANTING & SITE RESTORATION NOTES:

- PERENNIALS/GRASSES ARE LISTED IN THE MASTER PLANT SCHEDULE. IF THERE IS A CONFLICT BETWEEN THE QUANTITIES SHOWN ON THE DRAWINGS AND THE QUANTITIES SHOWN IN THE PLANT SCHEDULE, THE PLAN QUANTITIES SHALL PREVAIL.
- CONTRACTOR SHALL LAYOUT A TYPICAL PLANTING BED, AND OBTAIN APPROVAL OF THE LANDSCAPE ARCHITECT PRIOR TO PLANTING.
- SHRUB & PERENNIAL GROUPINGS SHALL BE PLANTED AND MULCHED IN ONE CONTINUOUSLY MULCHED BED. ALL BEDS ABUTTING TURF AREAS SHALL BE SPADE CUT EDGE.
- HARDWOOD MULCH PER SUDAS TO BE PLACED IN ALL PLANTING BEDS.
- CONTRACTOR TO VERIFY LOCATIONS AND DEPTHS OF EXISTING UTILITIES AND NOTIFY OWNER'S REPRESENTATIVE OF CONFLICTS WITH TREE PLANTINGS.
- ALL DISTURBED AREAS NOT INDICATED AS PAVING, STRUCTURES, PLANTINGS, OR SIGNAGE SHALL BE SODDED UNLESS NOTED OTHERWISE ON THE PLANS.
- LOW-GROW FESCUE MIX:

- SUPER SHADE FINE FESCUE MIX BY UNITED SEEDS, INC. (OR APPROVED EQUAL)
- APPLICATION RATES, PLACEMENT, AND FERTILIZER AS RECOMMENDED BY THE SUPPLIER.
- ALL SEEDED AREAS SHALL BE COVERED WITH RECP TYPE 2.C PER SUDAS.

- COMPOST AMENDED TOPSOIL: DEPTH AS SPECIFIED IN PLANTING DETAILS ON B-SHEETS. PLANTING BACKFILL SHALL CONSIST OF SUITABLE TOPSOIL AMENDED TO CONSIST OF 60% TOPSOIL, 30% SAND AND 10% COMPOST.

PLANT SCHEDULE									
EVERGREEN TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	HABIT/FORM	SPREAD	HEIGHT	SPACING
AC	3	ABIES CONCOLOR	WHITE FIR	6' HT.	B&B	PYRAMID	20'-25'	40'-60'	SEE PLAN
PD	4	PICEA GLAUCA 'DENSATA'	BLACK HILLS WHITE SPRUCE	6' HT.	B&B	PYRAMID	10'-15'	20'-40'	SEE PLAN
ORNAMENTAL TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	HABIT/FORM	SPREAD	HEIGHT	SPACING
AM	5	AMELANCHIER CANADENSIS	CANADIAN SERVICEBERRY MULTI-TRUNK	1.5" CAL.	B&B	MULTI-STEM	15'-20'	15'-20'	SEE PLAN
CE	9	CERCIS CANADENSIS	EASTERN REDBUD MULTI-TRUNK	1.5" CAL.	B&B	MULTI-STEM	15'-25'	15'-20'	SEE PLAN
CK	4	CORNUS KOUSA	KOUSA DOGWOOD	1.5" CAL.	B&B	UPRIGHT/OVAL	15'-25'	15'-25'	SEE PLAN
OVERSTORY TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	HABIT/FORM	SPREAD	HEIGHT	SPACING
CP	3	CLADRASTIS KENTUEKA 'PERKINS PINK'	PERKINS PINK YELLOWWOOD	2" CAL.	B&B	ROUNDED	40'	40'	SEE PLAN
GB	2	GINKGO BILOBA 'PRINCETON SENTRY'	PRINCETON SENTRY MAIDENHAIR TREE	2" CAL.	B&B	BROAD/UPRIGHT	20'-30'	40'-50'	SEE PLAN
PO	2	PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	2" CAL.	B&B	ROUNDED	30'-40'	30'-60'	SEE PLAN
QM2	4	QUERCUS MACROCARPA	BUR OAK	2.5" CAL.	B&B	ROUNDED	40'-70'	40'-70'	SEE PLAN
QM	3	QUERCUS MUEHLENBERGII	CHINKAPIN OAK	2" CAL.	B&B	ROUNDED	40'-60'	40'-50'	SEE PLAN
UP	5	ULMUS AMERICANA 'PRINCETON'	PRINCETON AMERICAN ELM	2" CAL.	B&B	BROAD/UPRIGHT	30'-50'	50'-70'	SEE PLAN
SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPREAD	HEIGHT			SPACING
CS	46	CLETHRA ALNIFOLIA 'SIXTEEN CANDLES'	SIXTEEN CANDLES SUMMERSWEET	#3 CONT.	3'-5'	3' - 5'			48" o.c.
SA	38	SYMPHORICARPUS X DOOR 'CANDY'	CANDY CORALBERRY	#3 CONT.	2'-3'	2'-3'			36" o.c.
SM	65	SYRINGA MEYERI 'PALIBIN'	DWARF KOREAN LILAC	#3 CONT.	5'-7'	4'-5'			60" o.c.
VA	46	VIBURNUM DENTATUM 'CHRISTOM'	BLUE MUFFIN® ARROWWOOD VIBURNUM	#3 CONT.	3'-4'	3' - 5'			60" o.c.
ORNAMENTAL GRASSES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPREAD	HEIGHT			SPACING
KF	85	CALAMAGROSTIS X ACUTIFLORA 'KARL FOERSTER'	KARL FOERSTER FEATHER REED GRASS	#1 CONT.	1.5' - 2.5'	3' - 5'			24" o.c.
SS	239	SCHIZACHYRIUM SCOPARIUM 'STANDING OVATION'	STANDING OVATION LITTLE BLUESTEM	#1 CONT.	1.5'-2'	2'-4'			18" o.c.
SH	286	SPOROBOLUS HETEROLEPIS	PRAIRIE DROPSEED	#1 CONT.	2'-3'	2'-3'			36" o.c.
PERENNIALS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPREAD	HEIGHT			SPACING
AP	152	ASTER NOVAE-ANGLIAE 'PURPLE DOME'	PURPLE DOME NEW ENGLAND ASTER	#1 CONT.	1' - 2'	1'-2'			30" o.c.
GJ	35	GERANIUM X 'JOHNSON'S BLUE'	JOHNSON'S BLUE GERANIUM	#1 CONT.	2'-2.5'	1'-1.5'			24" o.c.
MC	32	MONARDA DIDYMA 'CROFTWAY PINK'	CROFTWAY PINK BEE BALM	#1 CONT.	1' - 2'	2'-3'			24" o.c.
GROUND COVERS	QTY	BOTANICAL NAME	COMMON NAME	TYPE					SPACING
TX	65	THYMUS X 'RUBY CARPET'	RUBY CARPET THYME	PLUG					12" o.c.



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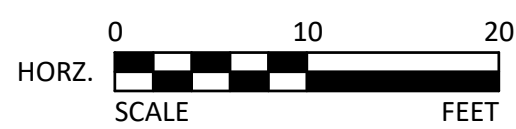
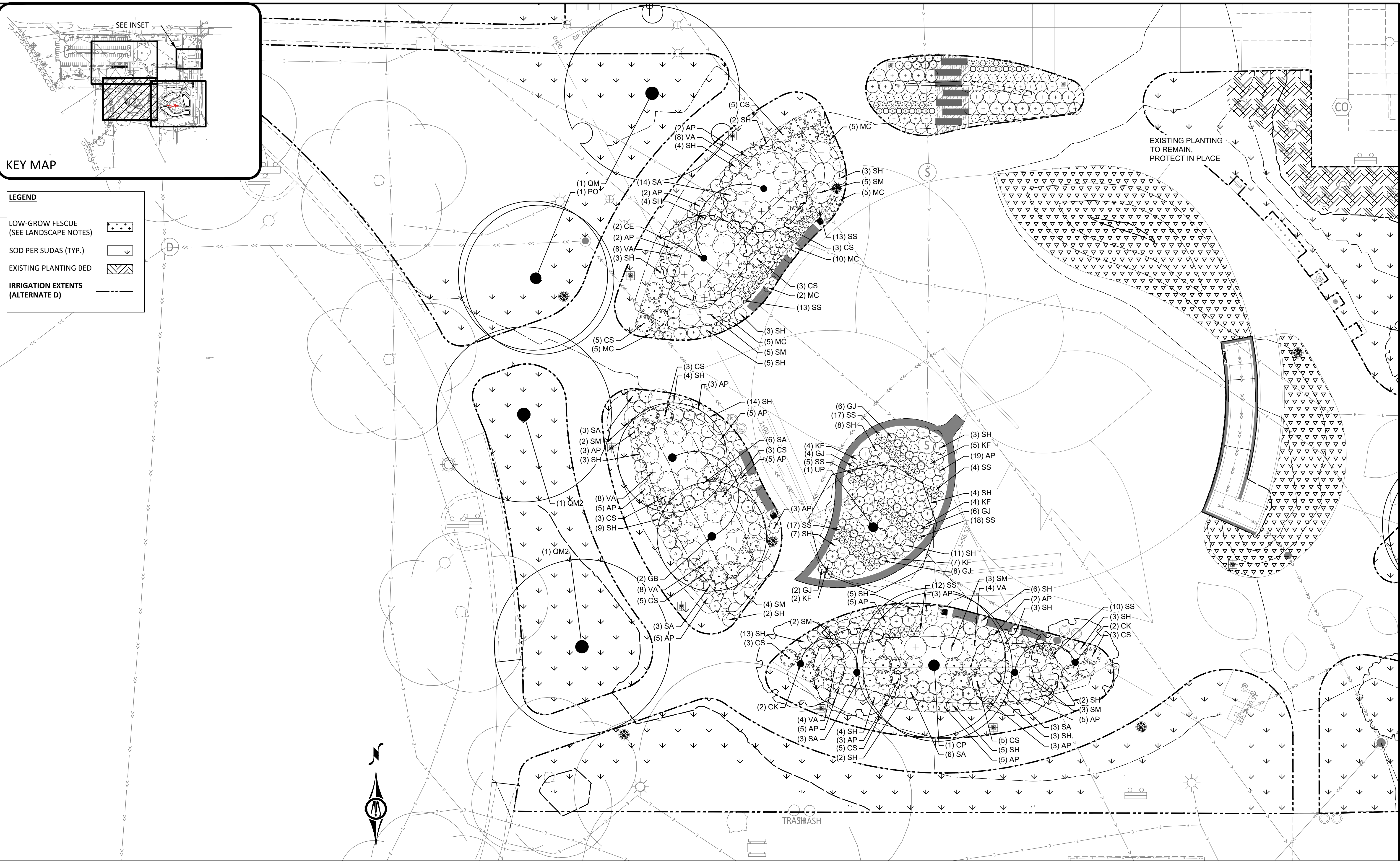
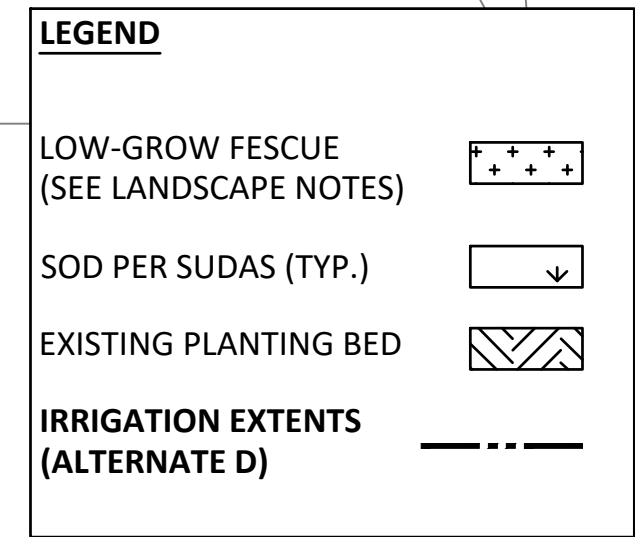
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2023 COLBY PARK IMPROVEMENTS

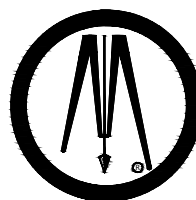
LANDSCAPE PLAN

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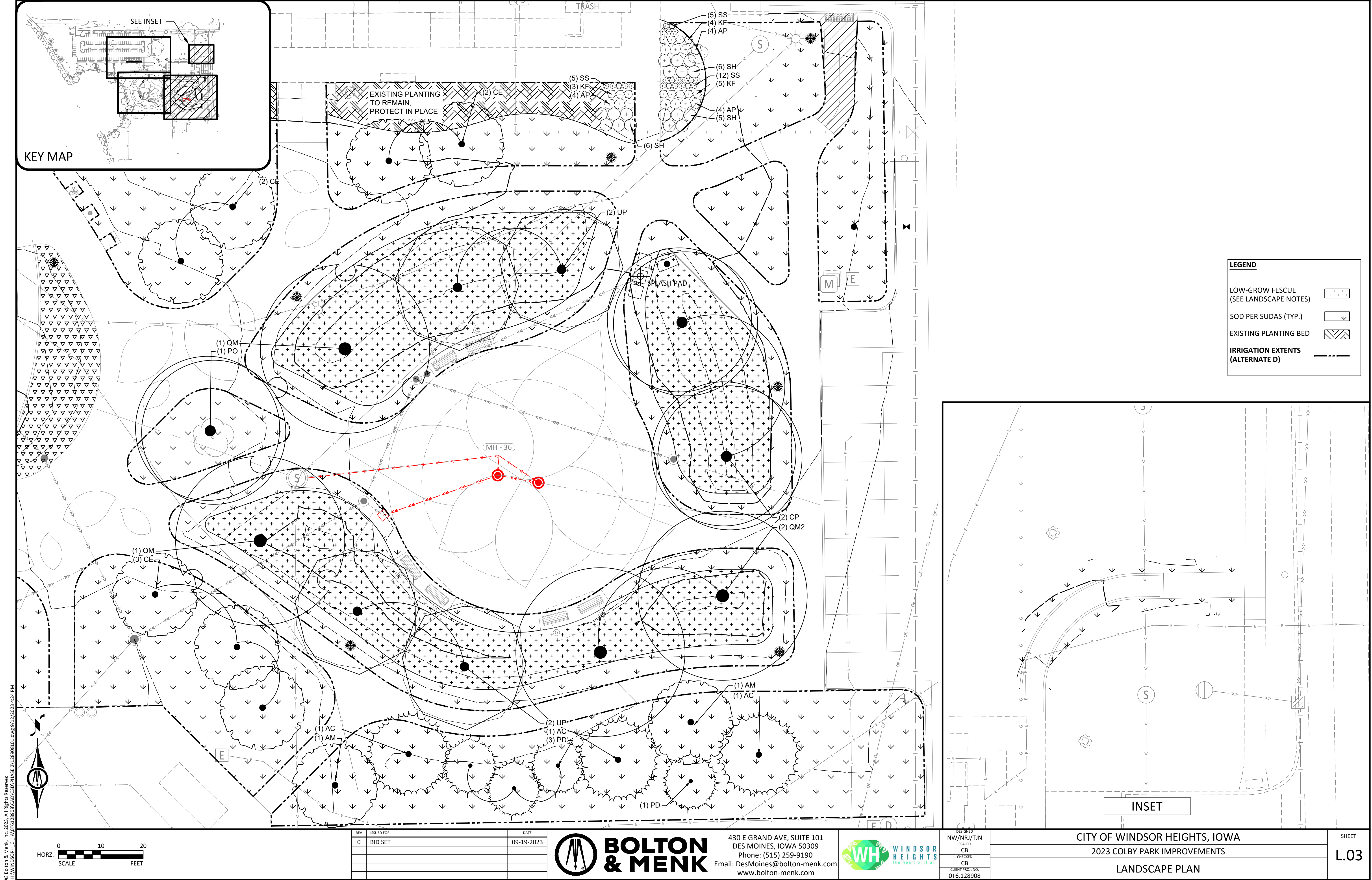
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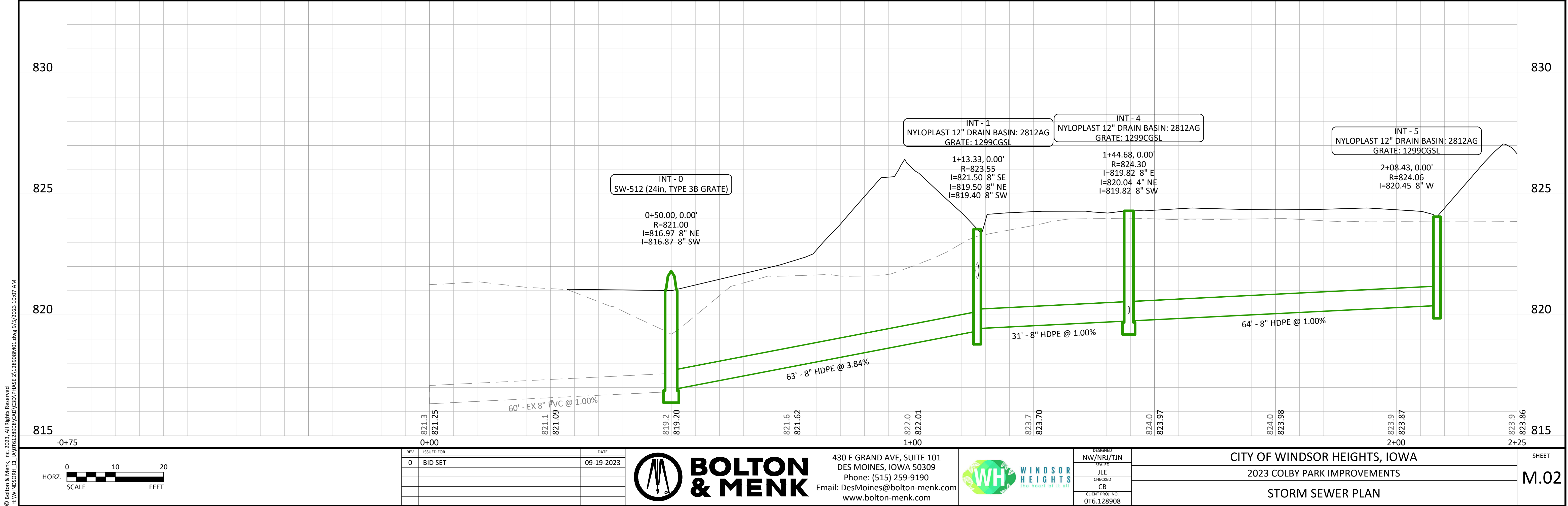
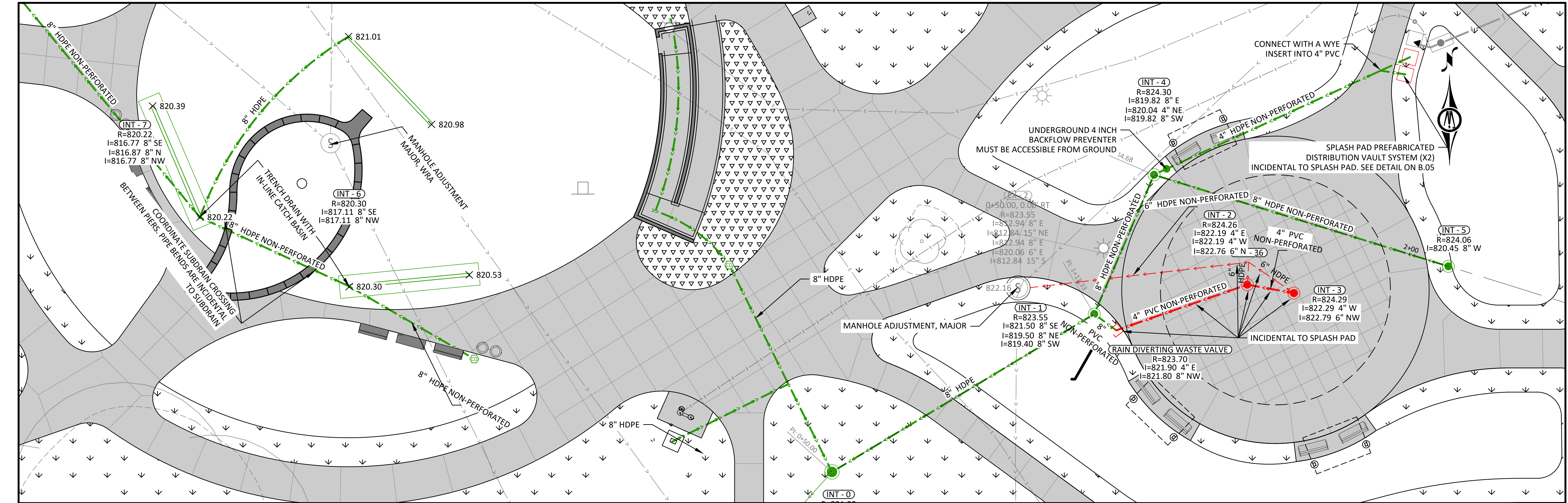
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LANDSCAPE PLAN

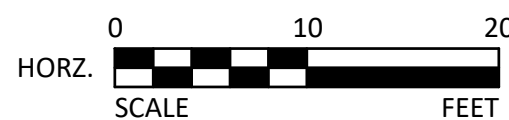
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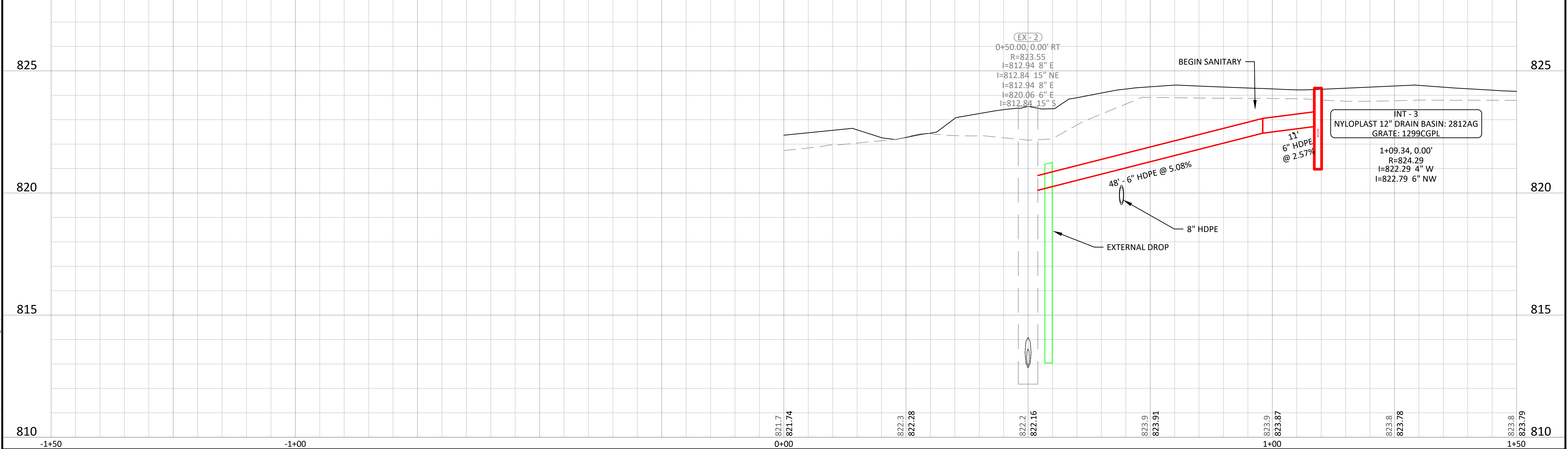
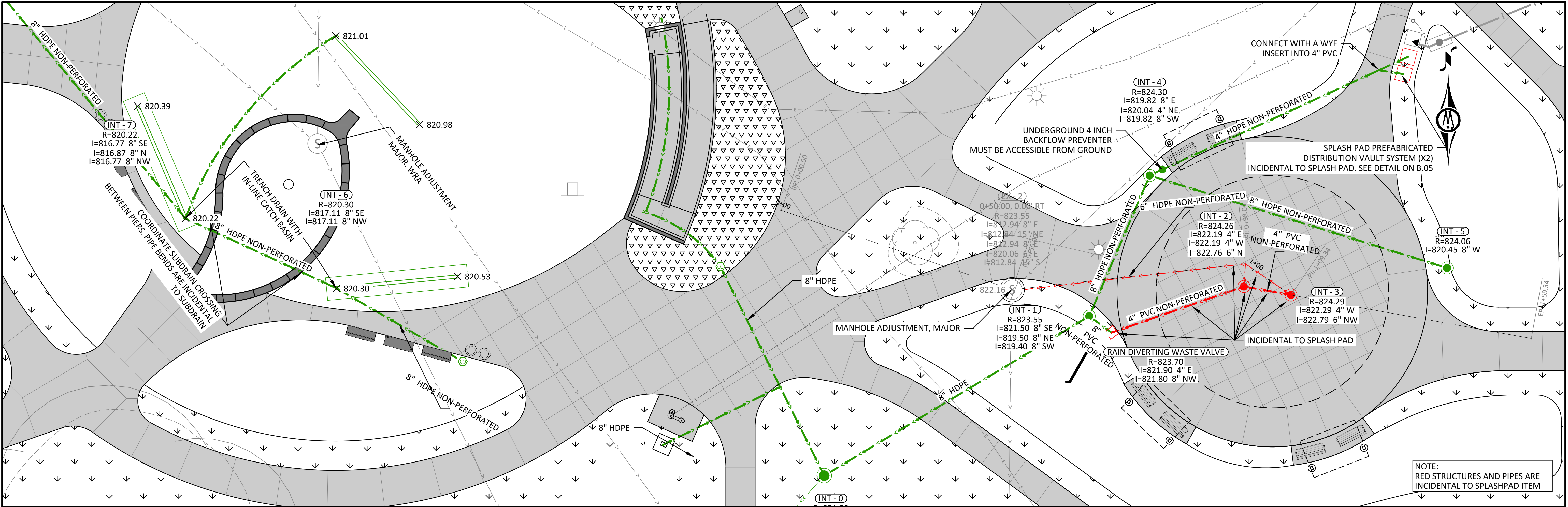
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2023 COLBY PARK IMPROVEMENTS
STORM SEWER PLAN

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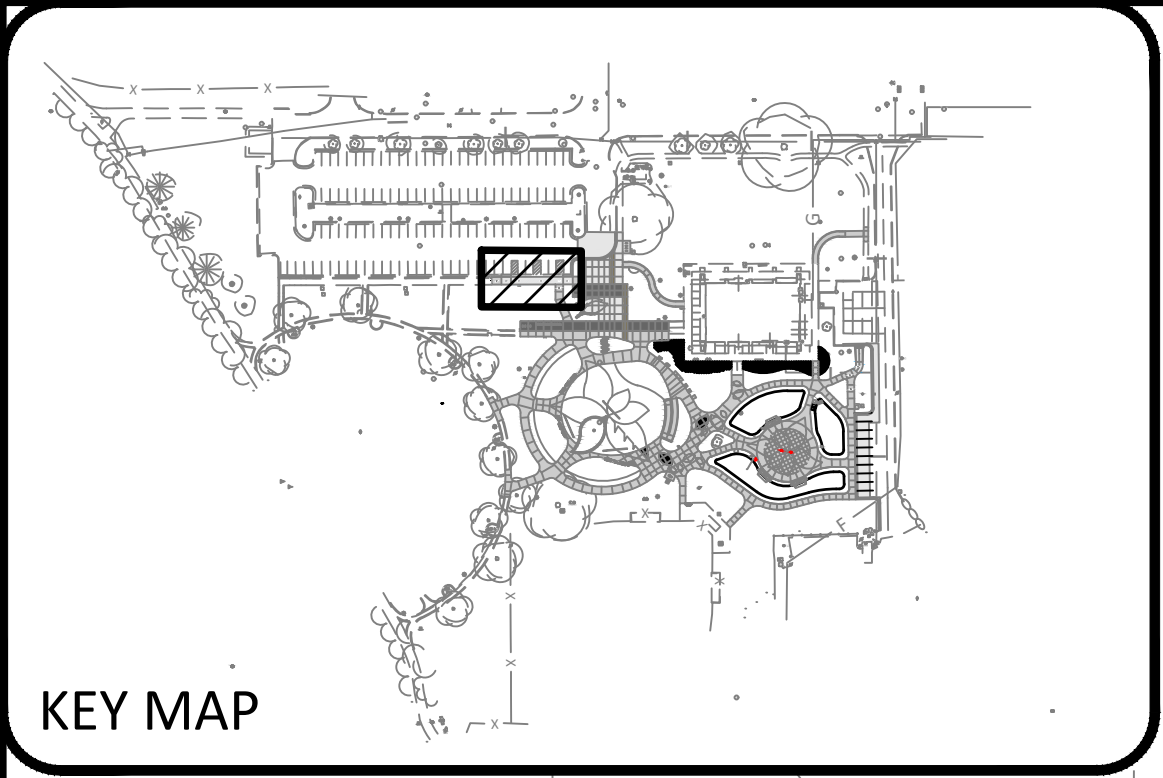
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2023 COLBY PARK IMPROVEMENTS
STORM SEWER PLAN

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LEGEND

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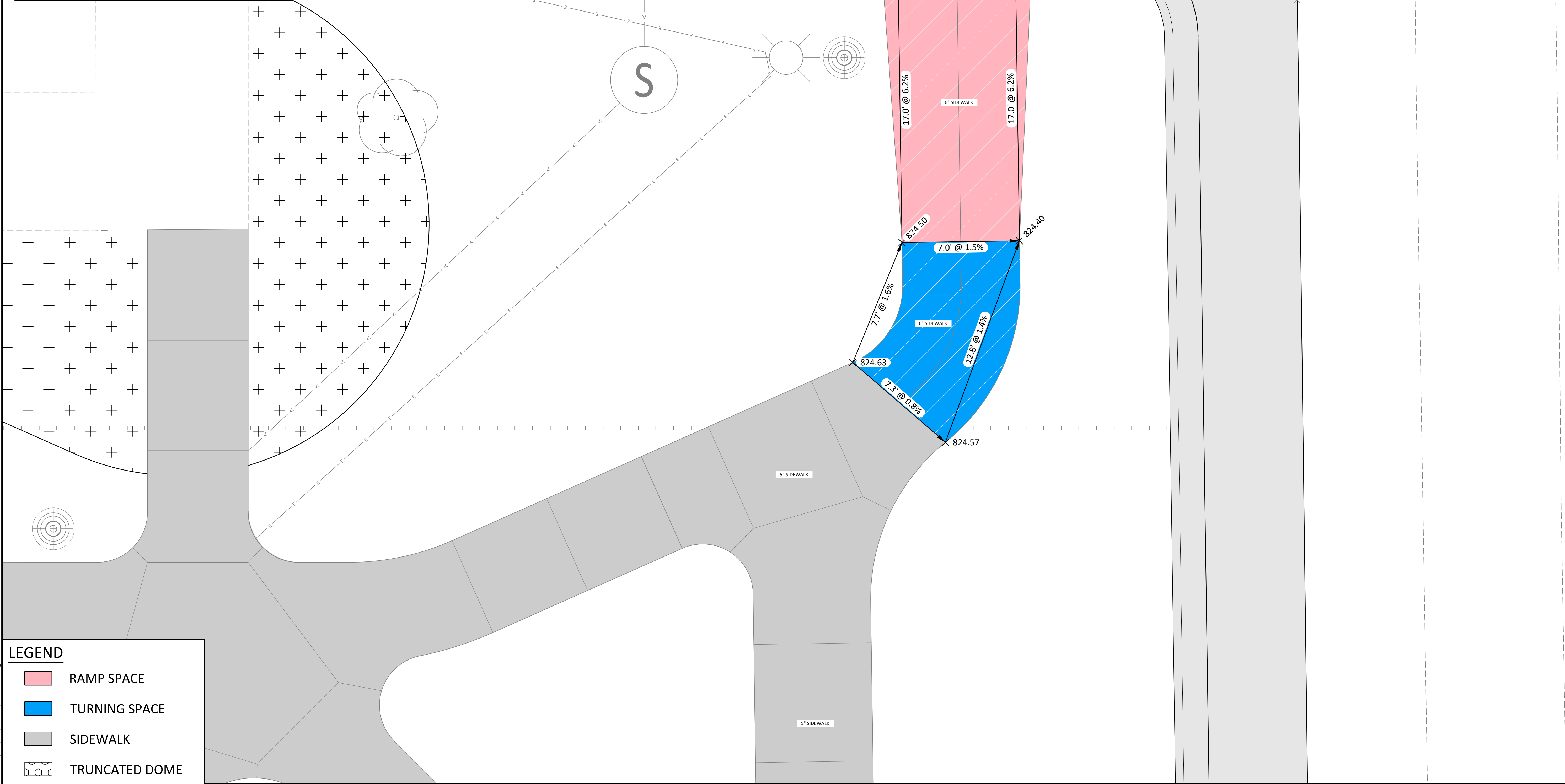
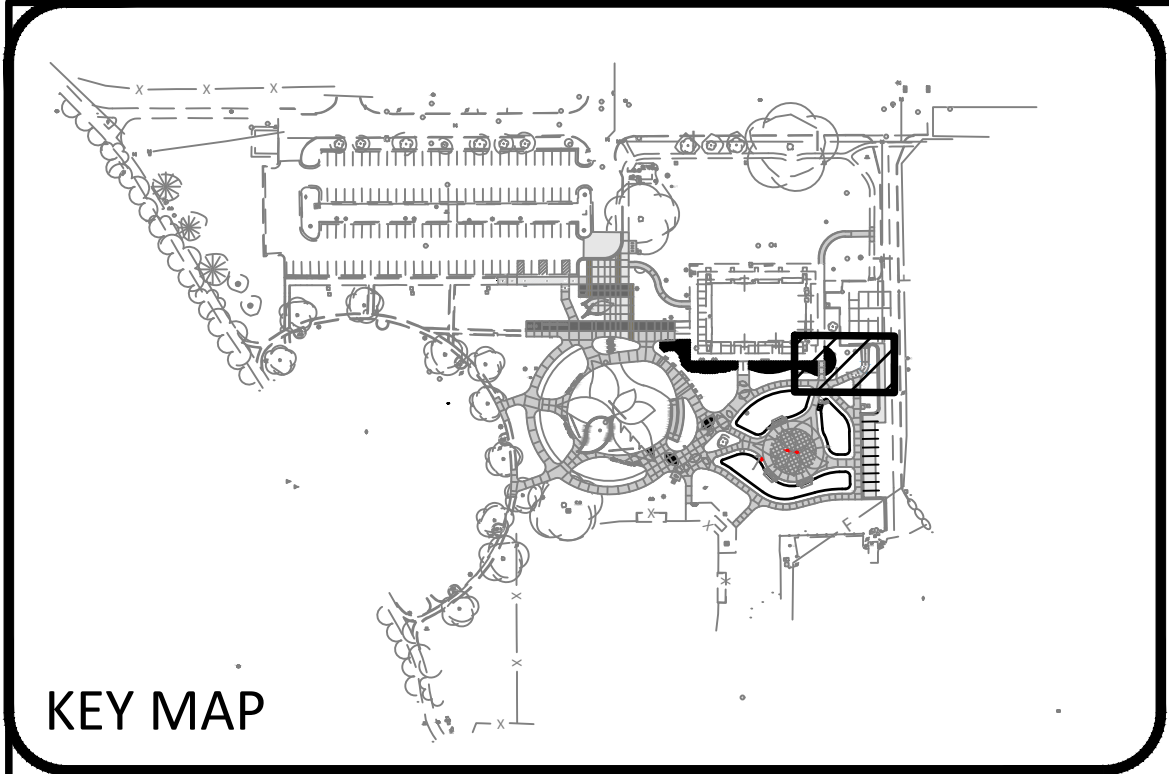
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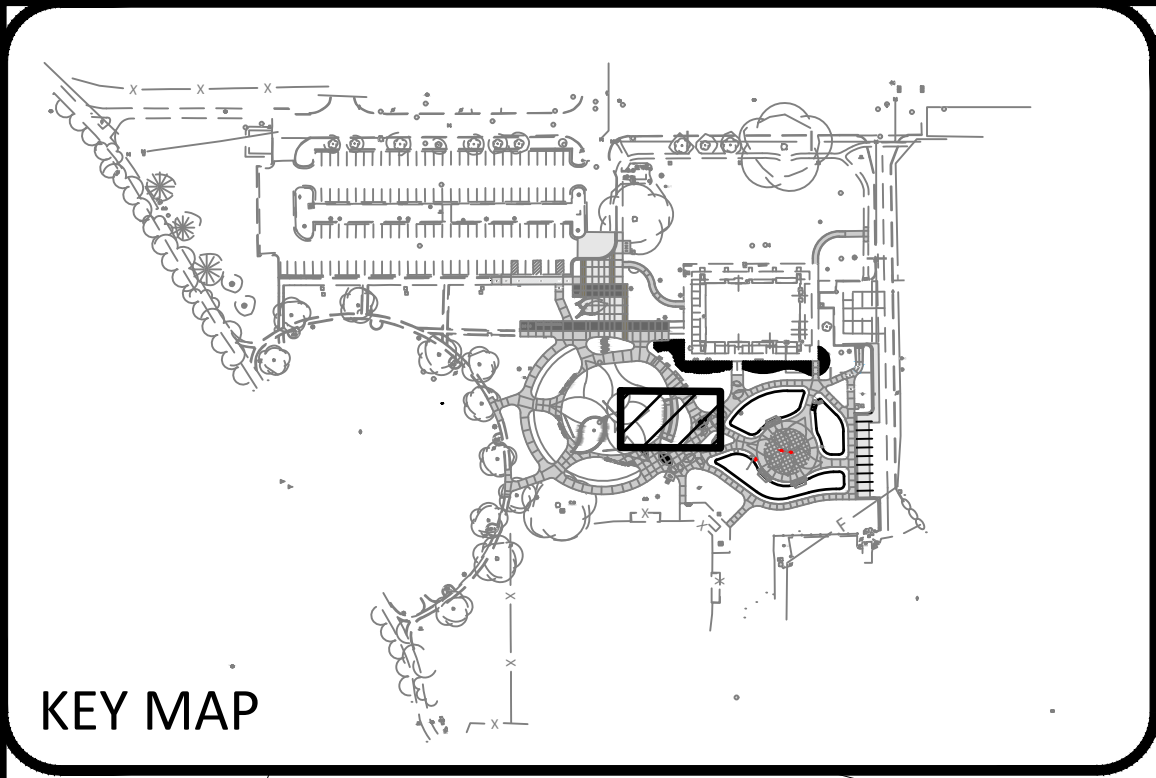
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LEGEND

- RAMP SPACE
- TURNING SPACE
- SIDEWALK
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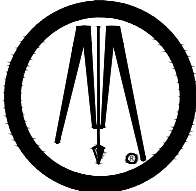


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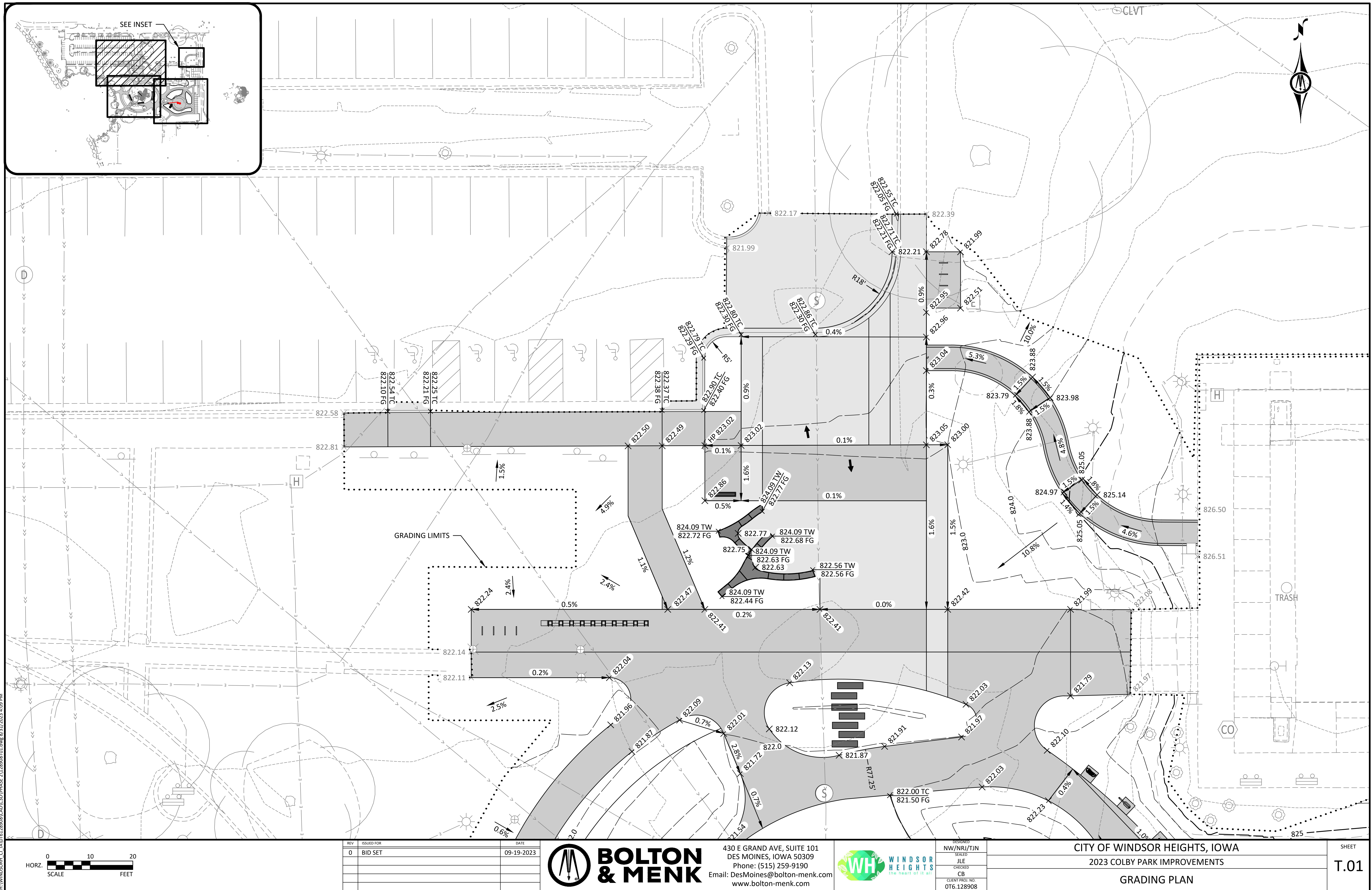


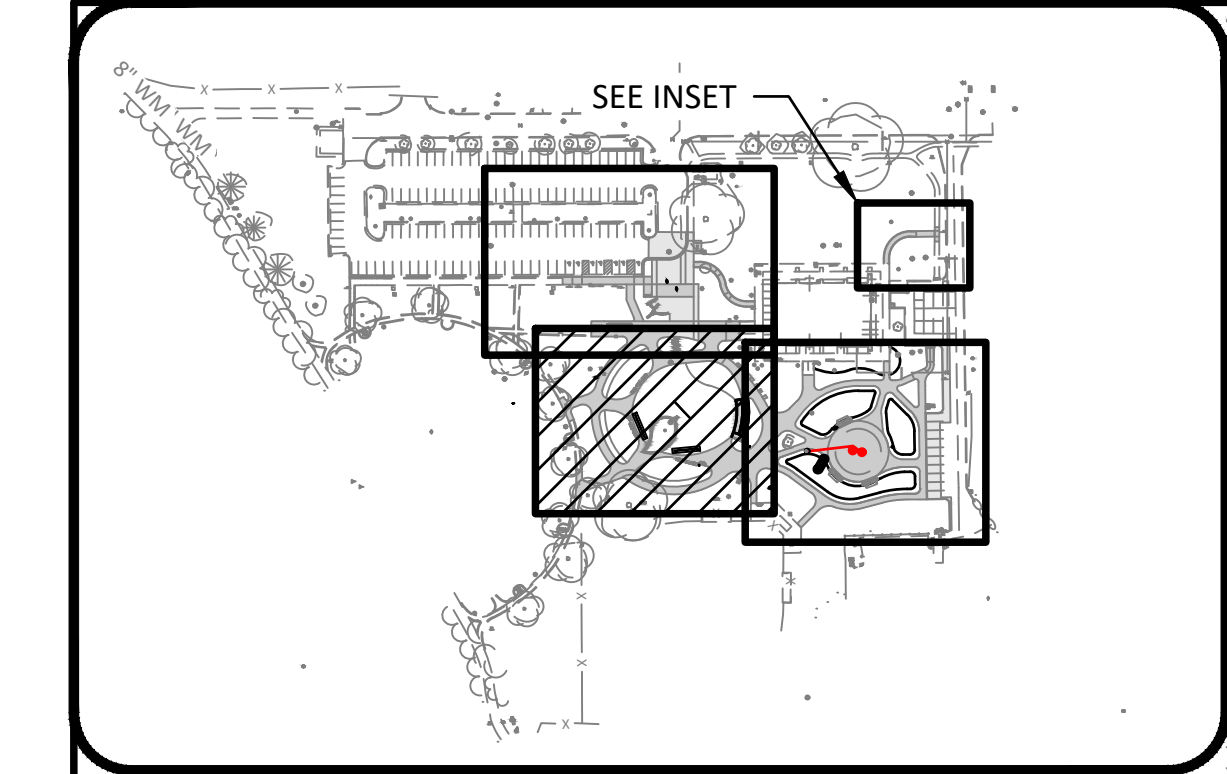
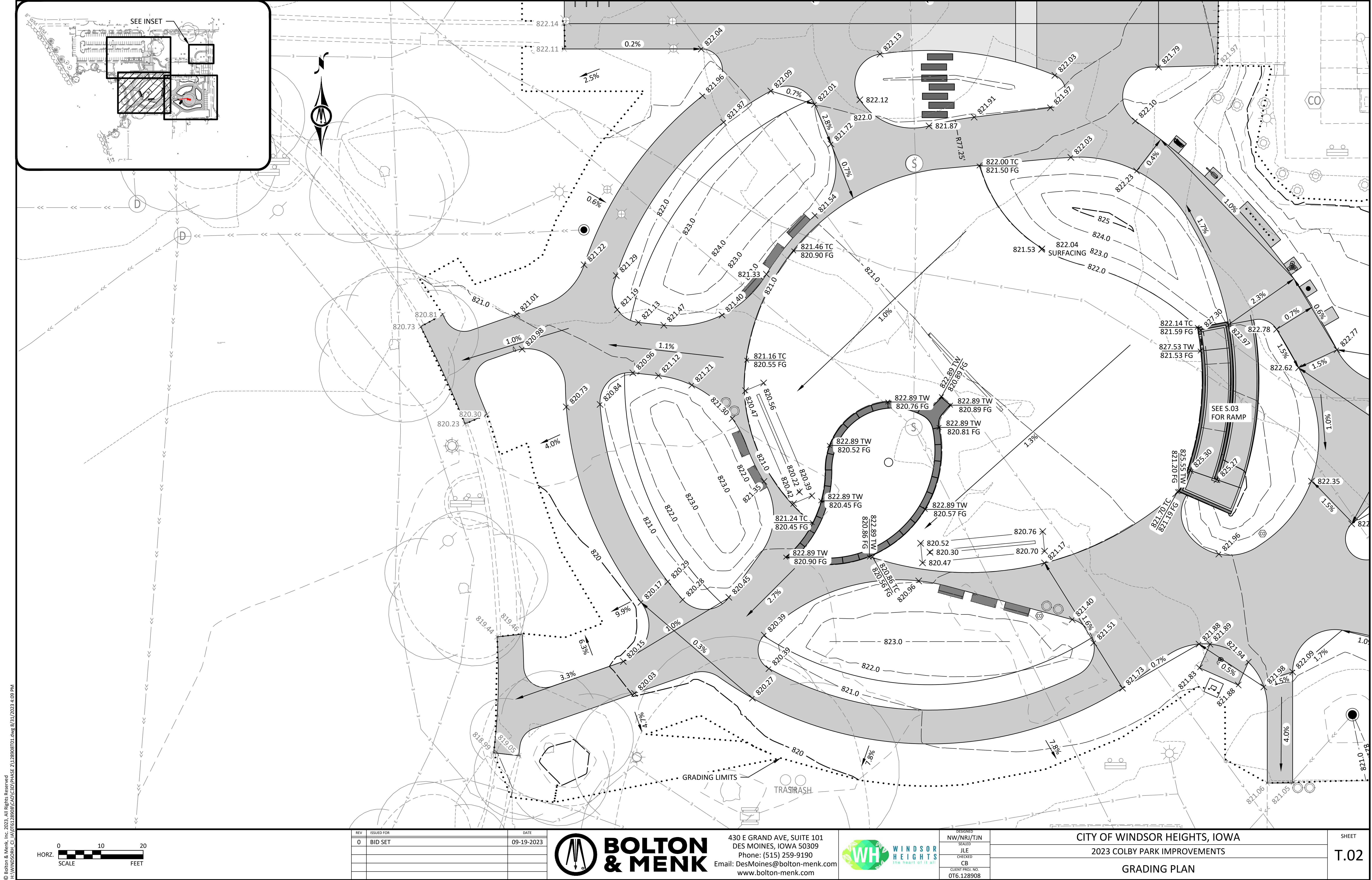
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2023 COLBY PARK IMPROVEMENTS
ADA RAMPS

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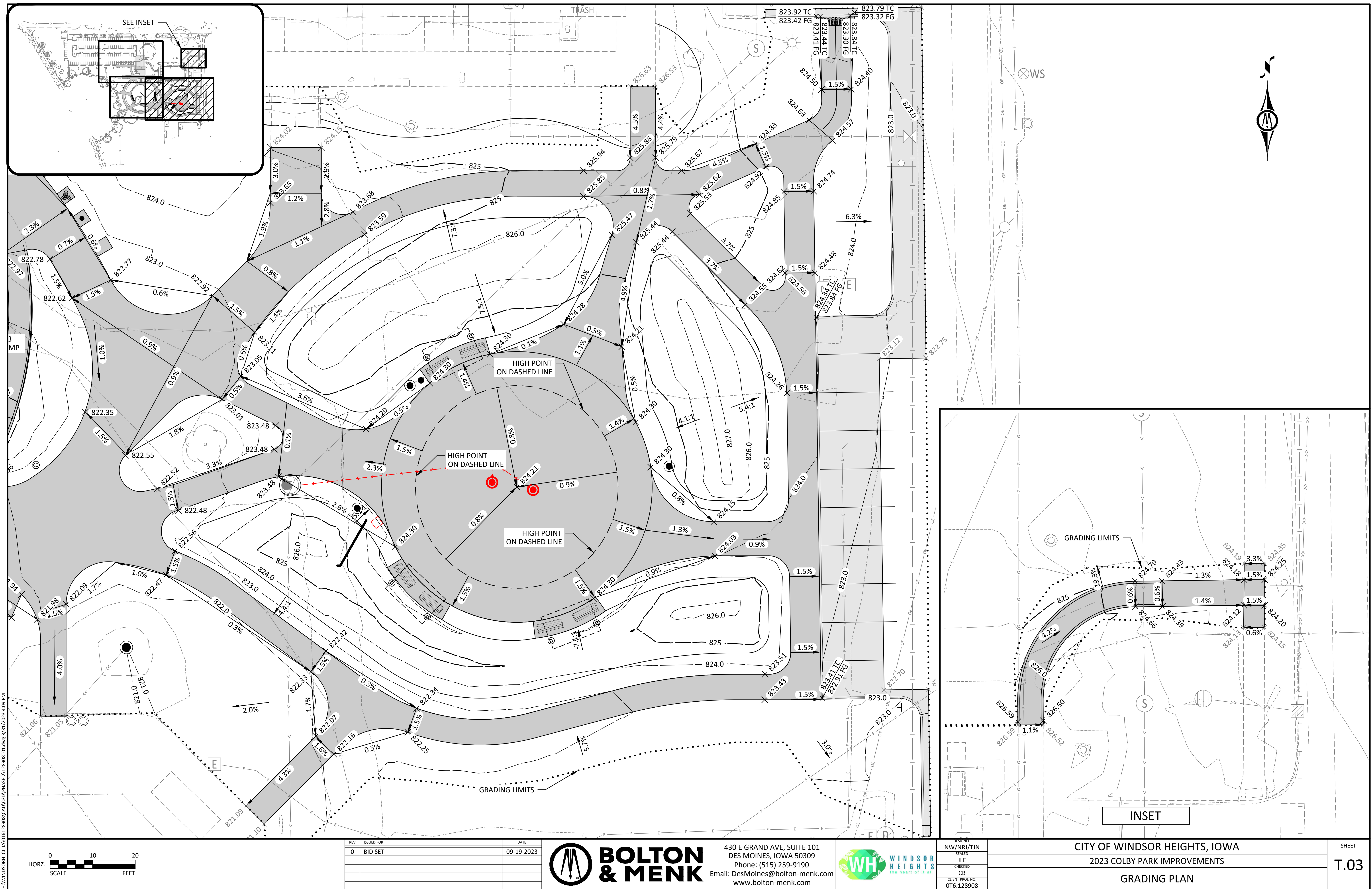
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CITY OF WINDSOR HEIGHTS, IOWA
2023 COLBY PARK IMPROVEMENTS
GRADING PLAN

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Resolution No. 2023-52

A RESOLUTION TO PROVIDE FOR A NOTICE OF PUBLIC HEARING ON THE PROPOSED PLANS, SPECIFICATIONS, FORM OF CONTRACT, AND ESTIMATED TOTAL COST FOR THE 2023 COLBY PARK IMPROVEMENT PROJECT AND FOR THE TAKING OF BIDS ON SAID PROJECT

WHEREAS, it is proposed that the City of Windsor Heights authorize the construction of public improvements as described in the proposed plans, specifications, and form of contract prepared by Bolten and Menk (the “Project Engineer”), which may be hereinafter referred to as the “2023 Colby Park Improvement Project” (the “Project”); and

WHEREAS, the proposed plans, specifications, form of contract and estimated total cost for the project (the “Contract Documents”) are on file with the City Clerk; and

WHEREAS, it is necessary to set a time and place for a public hearing on the Contract Documents, to publish Notice of Public Hearing on the Contract Documents, and to advertise for sealed bids on the Project.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF WINDSOR HEIGHTS, IOWA:

1. The City hereby approves the proposed Contract Documents referred to in this Resolution, as prepared by the Project Engineer, in their preliminary form.
2. The City hereby determines that the Project is necessary and desirable for the City and finds that it is in the best interest of the City to proceed towards construction of the Project.
3. The City shall hold a public hearing on the proposed Contract Documents on November 6, 2023 at 6:00 pm at City Hall, at which time any interested person may appear and file objections to the proposed Contract Documents, and, after hearing objections, the City may proceed with approval of said Contract Documents.
4. The City hereby authorizes and directs the publication of a notice of public hearing on the Contract Documents for the Project at least once, not less than four (4) not more than twenty (20) days before the date of the hearing.
5. The City hereby delegates Bolten and Menk the duty of publishing notice to bidders not less than 13 or more than 45 days before the date of filing bids.
6. The City hereby sets October 31, 2023 at 10:00 in the Office of the City Clerk as the time and place that the City’s designee will open and announce the bids received for construction of the Project.
7. The City hereby authorizes and directs advertisement for sealed bids for the Project in accordance with Iowa Code Chapter 26.

Passed and approved this 2nd day of October, 2023.

Mike Jones, Mayor

Attest: _____
Adam Strait, City Clerk

PUBLIC WORKS SALT SHED

CITY OF WINDSOR HEIGHTS – SEPT. 29, 2023

SUMMARY:

In response to the Public Works Facility Structural Assessment report conducted by ISG Inc. on September 8th, 2023, the Public Works Department along with the office of the City Administrator have started to compile estimates and explore alternatives for the use of the Salt Shed located at 6800 School Ave. In the following report, we explore the possibilities for the continued use of the shed in its current state through this coming winter season, the construction of a new shed with a hoop and fabric roof system, and the potential of renting the vacated building located at 1003 73rd St. The winter weather event season is quickly approaching, and it is imperative that the Public Works Department has salt readily accessible in order to clear and maintain safe road conditions for the use of our residents, businesses, and guests of the community.

OPTION 1 – CONTINUED USE OF THE SALT SHED

To ensure maximized safety of the building and the department's staff, the Public Works Department would limit the tonnage of salt stored in the shed to half the capacity of what was previously stored on a regular basis. 400 tons of salt down to 200 tons. Doing so would limit the vertical height of the salt stored and therefore would not require the PW staff to "climb" the pile with the end loader risking a shift of the equipment and causing an accident. The Public Works Department will also limit personnel to only those safely trained and able to maneuver the heavy equipment to load and unload the salt in a safe manner.

OPTION 2 – DEMOLITION AND RECONSTRUCTION OF SALT SHED

The Salt Shed will need to be demolished and rebuilt at some point. The Public Works Department has reached out to neighboring shops for information, recommendations, and ideas regarding commodity storage. We think a building constructed using concrete blocks and a steel truss/fabric roof system is the most cost effective and proficient way of storing the salt inventory. (see picture for example) The City Administrator along with the Public Works Department has contacted multiple businesses to ask for bids for individual phases of the reconstruction project. While we have reached a good starting point to be able to compile a budget, there are a few numbers we are waiting to hear back on. The existing Salt Shed is constructed with Asbestos Containing Materials, so prior to any demolition, the asbestos will need to be abated.



OPTION 2 CONTINUED – DEMOLITION AND RECONSTRUCTION OF SALT SHED

PHASE/ITEM	COST	RUNNING TOTAL
Asbestos Abatement	TBD	
Demolition	\$35,000.00	\$35,000.00
Foundation Prep Work	\$5,000.00	\$40,000.00
Wall Block	\$14,500.00	\$54,500.00
Roof System	\$25,000.00	\$79,500.00
Shed floor (Asphalt)	TBD	
Electrical	\$2,500.00	\$82,000.00
Equipment Rental	\$2,800.00	\$84,800.00

OPTION 3 – RENTING VACANT SPACE WITHIN WINDSOR HEIGHTS

The Public Works Department and City Administrator looked at the building located at 1003 73rd Street to see if there would be any possibility of using the building to store and load salt out of and we have concluded that the space would be adequate to do so. The next steps would be to reach out the property owners to discuss a possible agreement to utilize the space.

OPTION 4 – WORKING WITH NEIGHBOR MUNICIPALITY'S SALT STORAGE

The city of Windsor Heights has a working relationship with the City of Urbandale, and they have indicated their willingness to work with Windsor Heights Public Works on storage and access to our salt inventory.



City of Windsor Heights, IA

Public Works Facility Structural Assessment *Windsor Heights, IA*

September 8, 2023

ISG

Architecture
Engineering
Environmental
Planning

ISGInc.com

REPORT FOR:
City of Windsor Heights
Adam Plagge, **City Administrator**
1145 66th Street, Suite 1
Windsor Heights, IA 50324
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aplagge@windsorheights.org

FROM:
ISG
Bradley W. Penar, **PE**
217 E 2nd Street
Des Moines, IA 50309
515.243.9143
Brad.Penar@ISGInc.com

SIGNATURE SHEET

I HEREBY CERTIFY THAT THESE CALCULATIONS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

Bradley W. Penar

Bradley Penar, **PE**
Structural Engineering Group Leader
Reg. No. P19508

ISG
217 E 2nd Street
Des Moines, IA 50309



City of Windsor Heights – Public Works Facility Structural Assessment
Windsor Heights, IA

Engineer's Project Number: 29869

Dated this 8th day of September, 2023

BACKGROUND

ISG was contacted by Adam Plagge to review the Public Works buildings for the City of Windsor Heights, IA which includes the maintenance building and salt storage structure. The purpose of this assessment is to document the structural deficiencies that were observed after conversations with the city staff and a cursory walk-through of the building. ISG also reviewed a previous report by SVPA Architects/Tometich Engineering/Twin Rivers Engineering Consultants in which a structural assessment of the Public Works buildings was provided in 2017. The 2017 report indicated that the maintenance building “needs some improvements but is economically salvageable” and the salt storage building “should be demolished and replaced.” ISG Architect Erica Schaefer and Structural Engineer Bradley Penar visited the facility to make an independent assessment.

SUMMARY

ISG concludes that the findings from the SVPA report still apply. There are issues with the maintenance building that need to be addressed and conditions have only gotten worse over the 5 years since the last assessment. It appears that a minimal, if any, amount of repairs to the building have been undertaken. Repairs should be undertaken if the city intends to occupy the building over the long term.

The salt storage building is in a dire state. The building is beyond its useful serviceable life, repair is not feasible, and demolition is recommended. It may be possible to make it through one more winter but plans must be in place for replacement beyond the 2023 winter season. If the salt storage building is to make it through one more winter, precautions must be set in place. There should not be any personnel near the shed when loading or unloading salt when there is a greater risk of jostling the structure with heavy equipment which could topple the building. Numerous structural deficiencies were observed. The city and public works staff must be aware of the heightened risk of building collapse due to the weakened condition of the structure.

PUBLIC WORKS MAINTENANCE BUILDING ASSESSMENT

The public works maintenance building is a pre-engineered metal building structure with z-purlins as roof members and girts to support the metal wall panels. The lower 8' of the building has a CMU (concrete masonry unit) façade below the metal wall panels. There is a wood framed mezzanine with load bearing CMU walls on the interior of the building.

- Various cracks were observed in the CMU. Cracks were observed at both the interior and exterior of the building. Also, observed was a significant void in the CMU at one of the corners of the building. Although some cracks in the CMU were noted in the 2017 report, the cracking and separation of the CMU at wall intersections in the interior of the building appears to be more widespread.



Fig 1. Void in CMU at building corner



Fig 2. Separation of CMU at wall intersection

- Cracks and separations were observed in some building finishes such as at drywall, caulk joints, and between the wood stair and CMU wall. These cracks and separations are indicative of excessive building movement likely due to settling.



Fig 3. Separation of stair from CMU wall



Fig 4. Crack in caulk joint at ceiling

- Efflorescence was observed at the exterior of the building. This discoloration on the surface of the CMU is due to leaching of salts through the block. The concern is that the observed salts are also corroding the reinforcing steel within the CMU. At some locations, it appears that the efflorescence is being caused by water infiltration at the interface between the metal panel and top of CMU wall.
- There is significant corrosion at the steel column bases especially within the maintenance bays. The rust should be removed and the steel columns painted to prevent further corrosion and section loss.



Fig 5. Efflorescence and water infiltration at CMU wall



Fig 6. Corrosion at steel column base

- The steel jamb columns at the overhead doors are corroding at the base and separating from the adjacent CMU. The rust should be removed and the steel jambs painted to prevent further corrosion and section loss. The gap created should be caulked to prevent water infiltration.
- There was evidence of water damage at the roof. The 2017 report indicated that a new roof was required at that time. City staff indicated that some roofing repairs had been made since 2017.
- There was damage to downspouts that prevent water from being directed away from the building. Any damaged downspouts should be repaired or replaced.
- Deterioration of the apron and concrete at bases of overhead doors was observed. At several of the overhead doors, the concrete has spalled and the embedded steel pipe at the base of the overhead doors has been nearly completely rusted away. The concrete at these locations should be sawcut and removed and replaced.



Fig 7. Spalled concrete at base of overhead door



Fig 8. Damage to downspout

- Damage to metal panel above one of the overhead doors was observed. The public works staff indicated that the damage was caused when a plow truck was entering the maintenance bay with the back bed raised. The damage appears to be limited to the metal wall panel and the operation of the door is not impeded.



Fig 9. Damage to metal panel above overhead door

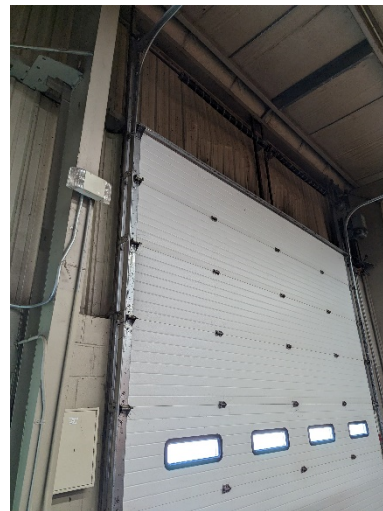


Fig 10. Damage to metal panel above overhead door

SALT STORAGE BUILDING ASSESSMENT

The salt storage building is a relatively simple CMU structure with a single slope metal roof that drains from the front of the building to the rear. Exposed steel roof beams bear on the CMU walls. The main usage of the building is to store de-icing salt to place on roadways.

- Numerous cracks in the CMU were observed. The cracks are widespread, especially in corners and at the jambs of the large opening at the front of the structure. The corrosive nature of the salt being stored within the building is the main driver behind the excessive deterioration observed.



Fig 11. Cracks in CMU at salt storage building



Fig 12. Cracks in CMU at salt storage building

- There are large gaping openings in the roof that actively leak into the building.
- The original batt insulation shows signs of water deterioration and is failing over most of the roof area.
- The steel roof members are heavily corroded and badly deteriorating. Furthermore, the connection of the steel roof members to the exterior wall is heavily corroded. There is concern that the steel beam to wall connection could fall away leading to a sudden failure of the roof structure.
- Heavy corrosion of steel jamb posts, steel lintels, and steel bollards at the large openings at the front of the structure. Due to the significant section loss that has occurred at these elements, these members cannot be salvaged and would need to be replaced.
- There are cracks in the glass block windows at the rear of the building. Some of the glass blocks are almost completely missing.



Fig 13. Failed insulation, openings in roof, and corroding steel members



Fig 14. Failed insulation and corroding steel members

- The downspouts at the rear of the building are missing causing the water to drain on the building which is causing further corrosion and deterioration of the CMU wall.



Fig 15. Corrosion at steel jamb posts and bollards



Fig 16. Damage at glass block windows and missing downspouts

RECOMMENDATION

After review of the existing conditions of the public works facilities, it is our recommendation that repairs are made to the maintenance building to extend its service life. Consideration should be given to replacement of the building to meet future needs.

The salt storage shed is in very poor condition. The salt has caused extensive rusting and deterioration of the structure. This building is extensively damaged and in the interest of safety should be demolished.

ISG appreciates the opportunity to work with the City of Windsor Heights. Our goal is to be flexible to accommodate the requirements of your project. Upon request, ISG is able to provide you with any additional professional design phase services that may be necessary to facilitate your projects as they move forward. We look forward to continuing to work with you.



Spencer Facility Condition + Needs Assessment

Spencer, IA

NOVEMBER 15, 2022



Architecture
Engineering
Environmental
Planning
ISGInc.com

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REPORT PREPARED FOR

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Certification

The City of Spencer (City) retained ISG to perform this Municipal Facilities Condition and Needs Assessment (FCNA) for multiple structures serving the City, including the Parks Department, Library Department, Police Department, and Public Works Department. It is ISG's understanding that the primary interest of the City is to identify needs and develop options that ensure highly functional workplaces and public service spaces, including options providing flexibility to adapt to future needs looking out at least 20 years. The conclusions and recommendations presented in this report are based on the review of the plans and records made available to the ISG assessment team, observations made during site visits, and ISG's experience with similar properties.

No testing, exploratory probing, dismantling or operating of equipment, or in-depth studies were performed as part of this report. This assessment did not include engineering calculations to determine the adequacy of each property's original design or existing systems. Although walk-through observations were performed, not all areas were observed. There may be defects in the properties, which were in areas not observed or readily accessible, may not have been visible, or were not disclosed by management personnel when questioned. The report describes property conditions at the time that the observations and research were conducted.

This report has been prepared for and is exclusively for the use and benefit of the City of Spencer. This report, or any of the information contained therein, is not for the use or benefit of, nor may it be relied upon by any other person or entity, for any purpose without the advance written consent of ISG.

REPORT PREPARED BY:



Kevin Hildebrandt, CPE, CPS

Facilities Management and Planning Strategist

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Executive Summary

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Executive Summary

SCOPE OF EVALUATION

The City of Spencer is undertaking planning efforts for II facilities in Spencer, Iowa. ISG is pleased to have assisted at this critical point by providing a detailed and forward-looking Municipal Facilities Condition and Needs Assessment (FCNA) that properly quantifies, prioritizes, and empowers future decisions. By providing a road map for the City of Spencer's facilities that aligns with its needs and goals, the intent of this assessment report is to serve as an integral tool for decision-making. The scope of this report includes document reviews, research, and interviews to augment the walk-through survey to assist in the facility assessment, including the following:

- Completion of a site visit walk-through survey to observe all II site and building systems
- Review and documentation of existing site and building systems
- Photos documentation of existing conditions
- Preparation of estimated opinion of probable cost for necessary repairs and replacements to remedy deficiencies

The facility assessment report user should only rely on this document for the point in time at which ISG observations and research were conducted. This report includes information pertaining to the current condition of the overall property.

As part of the assessment process, ISG notes systems, equipment, and items that are in good condition. Those items can be maintained with routine maintenance, minor repairs, utilizing normal operating and maintenance budgets. ISG provides the recommendation to perform regular maintenance for these items and therefore includes no associated costs in the opinion of probable costs as part of the report.

No testing, exploratory probing, dismantling or operating of equipment, or in-depth studies were performed as part of this report. This assessment did not include engineering calculations to determine the adequacy of each property's original design or existing systems. Although walk-through observations were performed, not all areas were observed. There may be defects in the properties, which were in areas not observed or readily accessible, may not have been visible, or were not disclosed by the client.

COST THRESHOLDS

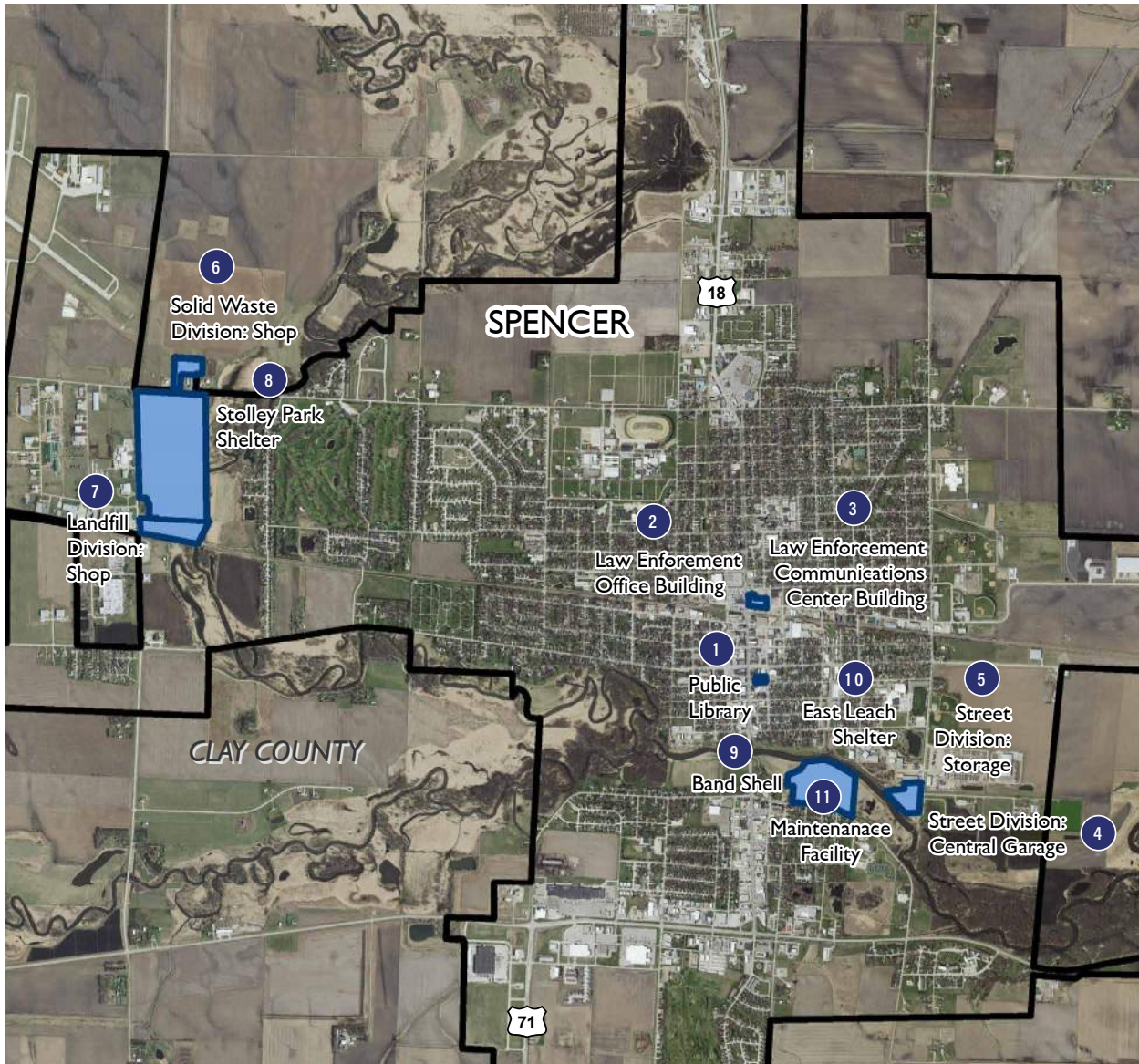
The City of Spencer requested the report focus on items with an estimated repair or replacement cost over \$5,000. All items estimated at over \$5,000 are included in the body of this report. To provide added information to the City for routine maintenance items under \$5,000, the team included a summary of these items in the Appendix.

SPACE NEEDS + FLOOR PLAN CONCEPTS

An assessment of space needs was conducted looking out 20 years, and the space planning tables are included in the Appendix.

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SITE OVERVIEW



FACILITIES

- 1
Public Library
- 2
Police Office Building
- 3
Police Communications Center
- 4
Public Works Street Division Central Garage
- 5
Public Works Street Division Storage
- 6
Public Works Solid Waste Division Shop
- 7
Public Works Landfill Division Shop
- 8
Stolley Park Shelter
- 9
Band Shell
- 10
East Leach Shelter
- 11
Parks Maintenance Facility


RECOMMENDATION CATEGORIES

The following assessment considers information gathered from field observations, reviews of existing plans, and information provided by facility staff and personnel. The assessment performed on-site was limited to non-destructive visual reviews of existing systems. Available information and plans were provided to ISG by the City for review. The following categories were reviewed within the scope of this assessment:


ISG has included a label to flag any items that address accessibility and/or life safety issues as these are considered priority items.

ADA


LIFE SAFETY




SITE + GROUNDS
Review of existing building site, including parking spaces, concrete walks, and other horizontal site elements. Site circulation, grading, paving, parking, and stormwater management were also reviewed.




PLUMBING
Review of existing building plumbing systems, including water service, piping, and supply, as well as, plumbing fixtures, including drinking fountains, sinks, toilets, and showers (if applicable).




SECURITY
Review of existing security equipment installed throughout the building. Review of existing primary entryways into the facilities, including door locations and visitor access.




EXTERIOR BUILDING
Review of each building's exterior shells, including an assessment of the structure, foundation, exterior walls, windows and doors, and thermal efficiency, as well as conditions of existing roofs, gutters, and downspouts.



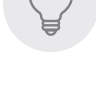
MECHANICAL
Review of existing mechanical systems and their components, including verification that HVAC systems meet current building codes.




LIFE SAFETY
Review of life safety, egress, and potential code deficiencies as discovered during field observation. This also includes conditions of the fire alarm system.




STRUCTURAL SYSTEM
Review of structural integrity of existing buildings with analysis of columns, walls, and roof.




ELECTRICAL
Review of existing building electrical systems, including electrical service, distribution, and lighting.




HAZARDOUS MATERIAL
Review and identification of potential hazardous material noted during visual field observations.



INTERIOR BUILDING
Review of finishes, equipment, and other conditions found in offices, hallways, stairwells, kitchen, and lounge areas.



TECHNOLOGY
Review of existing space allocation and conditions for Information Technology (IT) equipment. This section also documents technology systems and components, including security systems and others as applicable.



ACCESSIBILITY
Review of existing structure for conformance with the Americans with Disabilities Act (ADA), site parking, access into the building and entrances, accessibility routes inside of building, and restroom accessibility.

PRIORITY SUMMARY

Based on the items evaluated, any issues or deficiencies documented have been assigned a priority level based on the chart below, and an estimate for costs is provided. Costs for any recommendations that are beyond the scope of the assessment are not included.

	Priority	Time Frame	Item
1	Immediate	0–5 Years	Accessibility Issue
2	Short-Term	6–10 Years	Aesthetics Deterioration Item Energy Issue
3	Long-Term	11–15 Years	Estimated Useful Life Hazardous Materials Health Issue
4	Future	16-20 Years	Remaining Useful Life

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Facility Assessment

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Police Office Building

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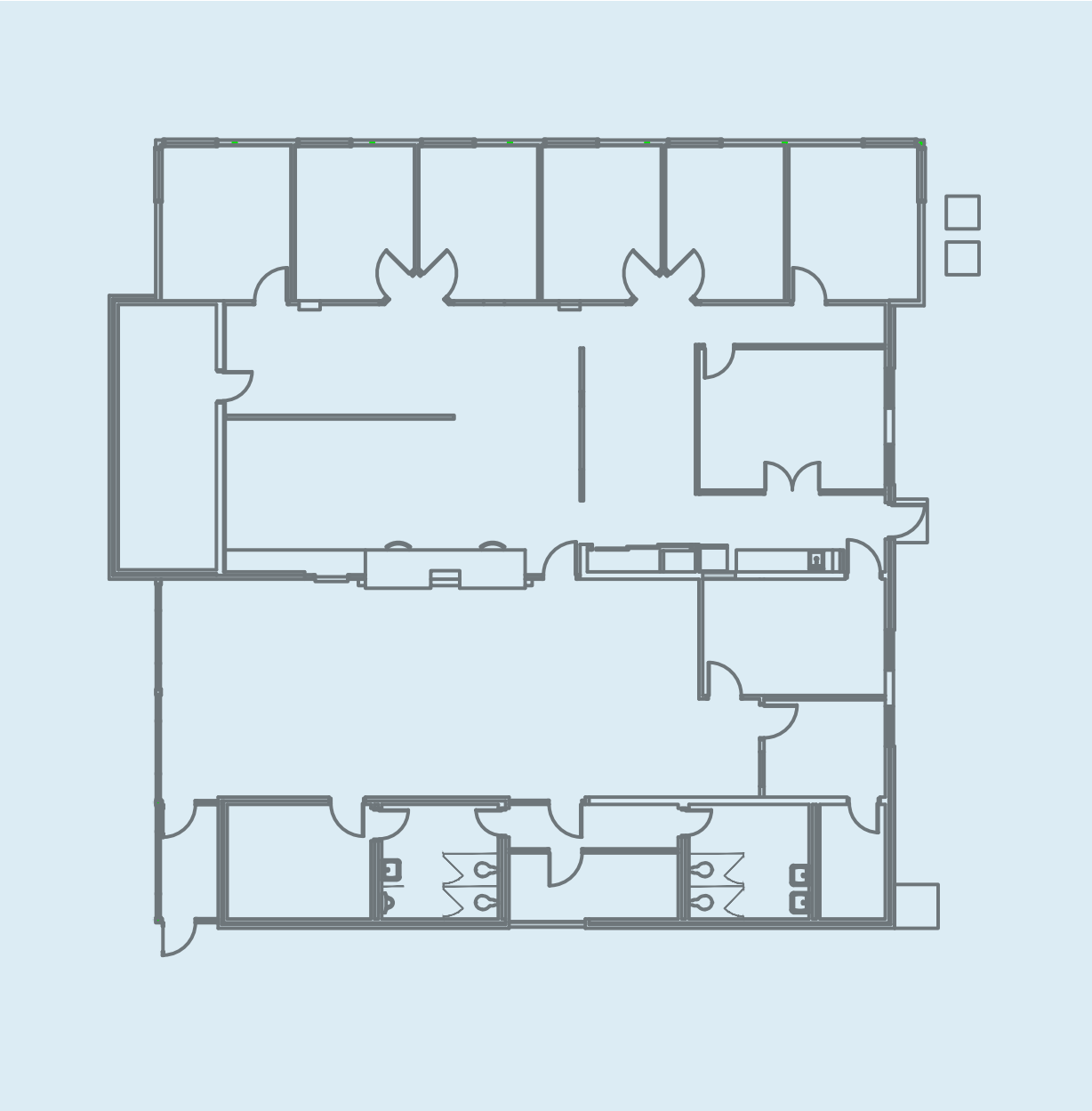
Police Office Building

INTRODUCTION

The Spencer Police Department is composed of 20 sworn officers, eight dispatchers, and two support personnel to serve and protect the 11,052 citizens and 11.09 square miles that comprise the City of Spencer. The facility campus for the Spencer Police Department is leased from Spencer Municipal Utilities and includes office and work space for 12 employees and one meeting room.

Quick Facts

- 4,988 sq. ft.
- Constructed in 1975
- 2006 addition



ARCHITECTURAL + STRUCTURAL

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Exterior Walls	West Exterior Wall	Fair	2	The mortar joints of the brick exterior west wall need repointing. The cap flashing on top of this wall is also loose and needs repair or replacement.	Repoint the brick and repair or replace the cap flashing.	\$21,000
Interior Other	Accessibility/Restrooms	Poor	1	The men's and women's restrooms are not ADA- compliant due to clearance, space, and fixtures.	Remodel restrooms to meet ADA Standards.	<div>ADA</div> \$58,600



Exterior Brick West Wall/Wide View



Exterior Brick West Wall/Close View



Cap Flashing at West Wall



Restroom



Restroom

ELECTRICAL + TECHNOLOGY

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Interior Lighting	Fixtures/Throughout	Good	2	There are at least 40 fixtures that are not LED.	Upgrade lights to LED type.	\$31,200
Life Safety	Emergency Egress Lighting/Exterior	Poor	1	Emergency egress lighting and exit signs not observed.	Install emergency egress lighting and exist signs.	\$7,400
Other Electrical	Electrical Distribution	Poor	2	Electrical distribution for building of this size is complex and has many unused and outdated components. Eight panels were identified throughout building. Some appear to be original and are no longer serviceable.	Eliminate two outdated panelboards (one in electrical room and one recessed in wall). Replace remaining panelboards and enclosed circuit breaker in electrical room with 1-2 panelboards. Eliminate panelboard in office cupboard. Bring circuits to new panels in electrical room. Coordinate with main service disconnect replacement.	\$18,700

LIFE
SAFETY



Electrical Distribution



Electrical Distribution



Electrical Distribution



Electrical Distribution

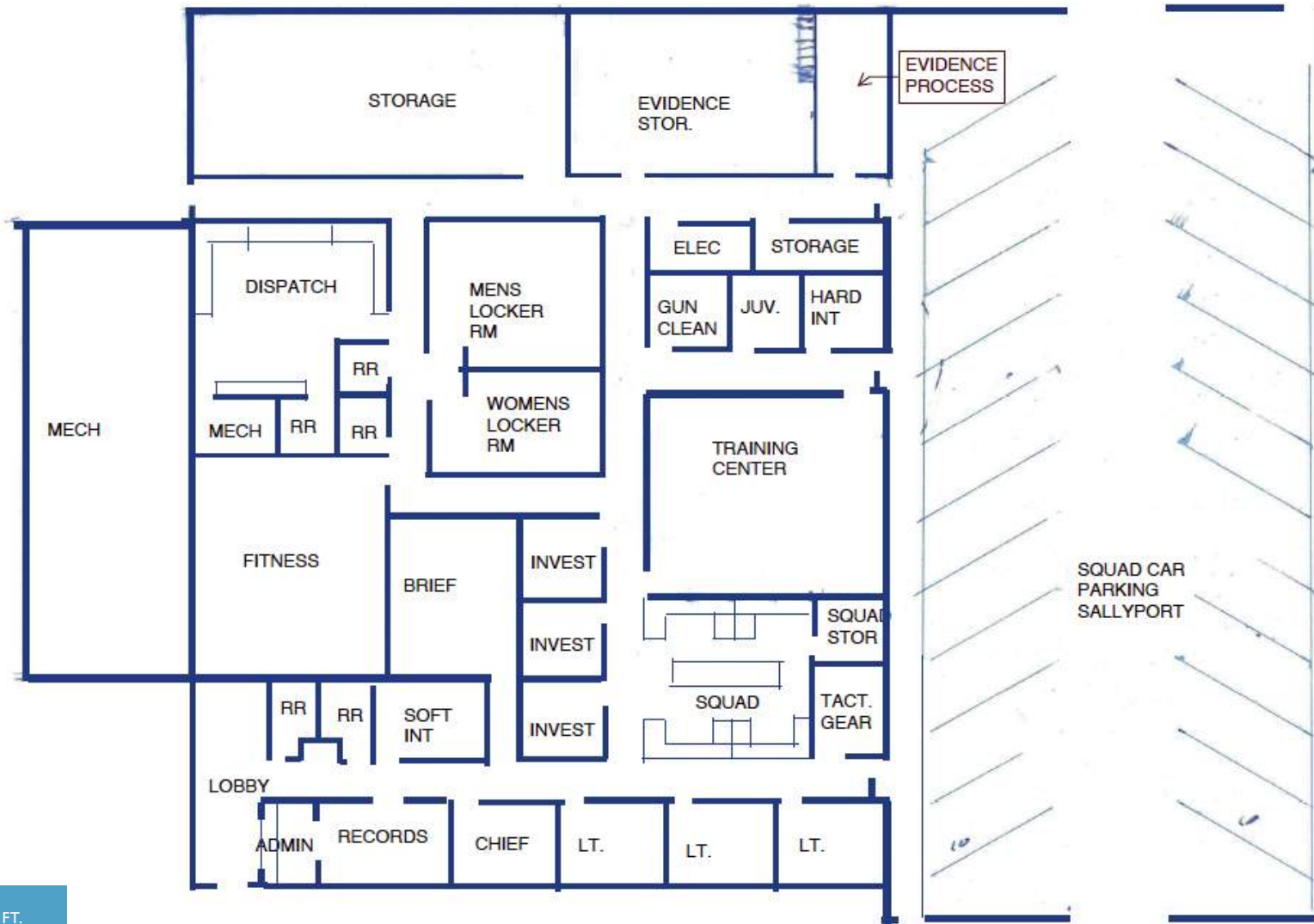
PROPOSED NEW BUILDING SITE CONCEPTS



Police + Fire Station Site Preferred Option



Police + City Hall Site Preferred Option

BLOCK FLOOR PLAN CONCEPT *Police Department*

23,125 SQ. FT.

FACILITY COMMENTS FOR NEW CONSTRUCTION

Facility	Is the existing facility meeting the functional needs?	Can the existing facility be adjusted, corrected, or added on to in order to meet the functional needs?	Is replacement the right answer?	If YES to replacement... What location is recommended?	FINAL SOLUTION Scope of work	FINAL SOLUTION Approximate cost*	FINAL SOLUTION Schedule
Office Building	No	No	Yes-relocation	Preferred-at the existing fire station site or City Hall site	Build a new facility	\$9,812,500	Design: 10-12 months Construction: 12-14 months
Communication Center	No	No	Yes-relocation	Preferred-at the existing fire station site	Build a new facility		

*See appendix for further cost information.



Police Communications Center

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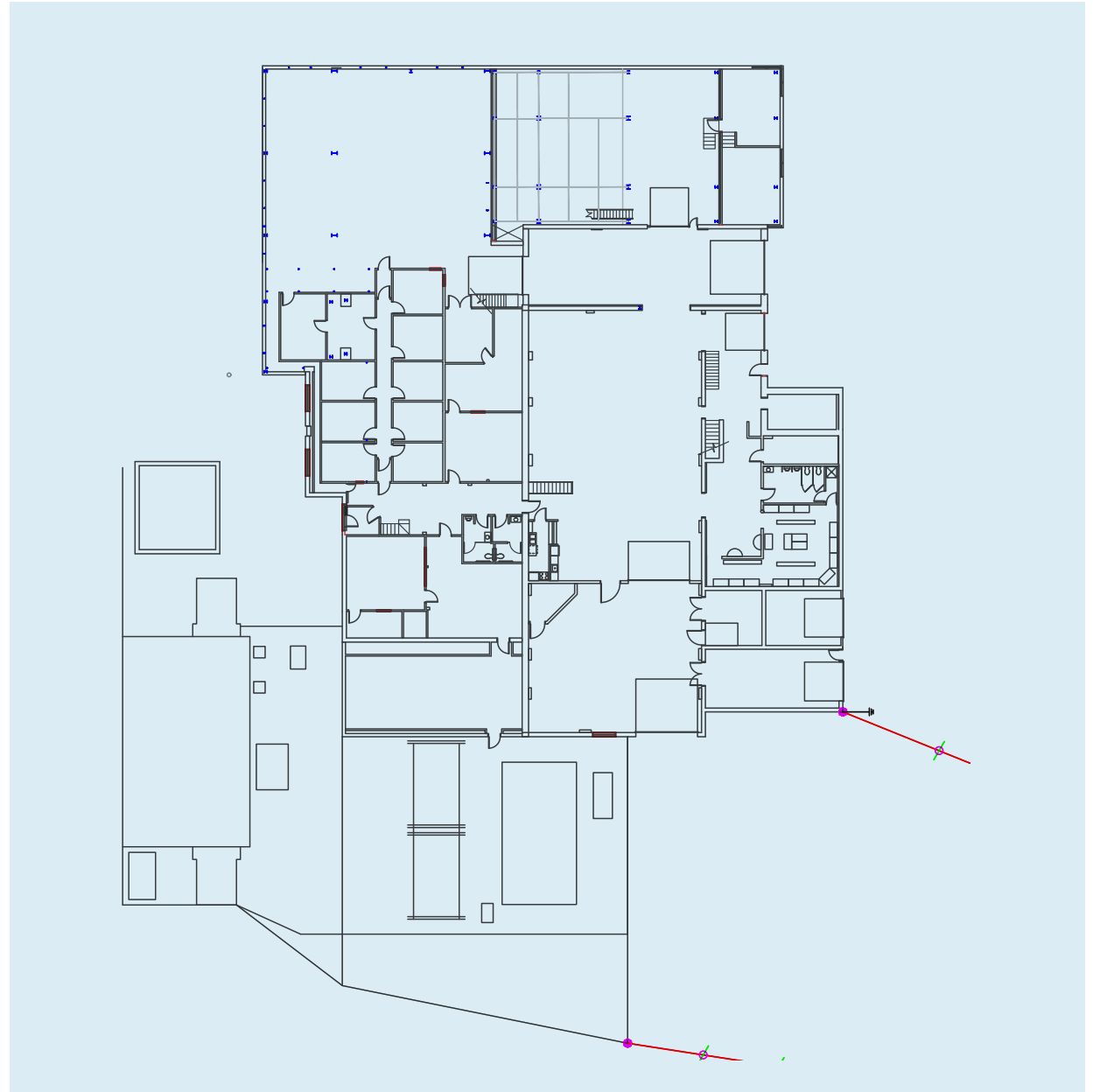
Police Communications Center

INTRODUCTION

The emergency communications center is operated by eight employees. The facility includes storage space, evidence rooms, and training spaces for law enforcement personnel and has a police impound attached to the southeast corner of the building.

Quick Facts

- 23,176 sq. ft.
- Constructed in 1940
- Numerous expansions and renovations



ARCHITECTURAL + STRUCTURAL

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Exterior Roof	Upper Roof	Fair	I	The upper roof is a fully adhered EPDM membrane. Standing water was observed. The membrane is pulling away from the edged of the roof and is starting to come loose in the northeast corner. The age is unknown. The average useful life is 20-25 years.	Replace roof.	\$63,900
Exterior Walls	Upper Wall Brick	Poor	I	The brick wall above the middle section roof has damaged brick and mortar. Caulking has been used to patch deteriorated mortar.	Repoint this section of wall. Replace damaged bricks.	\$41,900
Exterior Windows	North Windows	Poor	I	The north portion of the building has original crank style windows. Windows are single-paned glass with metal frames. The glazing is missing and heavily damaged throughout.	Replace the original windows.	\$139,000
Interior Floors	Floor Framing	Fair	2	A few locations of the first floor framing are rusted. Floor beams and/or metal deck exist in multiple areas of the first floor framing where old openings/pits were infilled with steel and concrete framing . The beams and floor deck appear to have adequate capacity in their current condition, but the rust will continue to get worse over time until a replacement is required.	Replace rusted steel floor framing.	\$33,300
Interior Floors	Flooring/Throughout	Fair	I	Flooring in the building is a combination of carpet, concrete, and ceramic. Carpet in the main entrance and 911 call center is worn. Carpet in the evidence room is in good condition, but out dated. The concrete flooring throughout the vehicle storage has cracks, but overall fair condition.	Replace the carpet in the main entrance hallway and 911 call center.	\$8,800



Upper Roof



Upper Wall Brick



North Windows



Rusted Floor Beam and Deck



Steel Floor Framing Beam and Deck/Close View



Steel Floor Beam and Deck/Close View



Main Entrance Flooring

ELECTRICAL + TECHNOLOGY

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Exterior Lighting	Security Light/Exterior East and North Sides	Fair	I	There is minimal security lighting around building.	Install six or more wall pack fixtures on east and north side of building.	\$5,400
Interior Lighting	Bay Light Fixtures	Poor	I	There are at least 20 high bay lights, which are a security concern due to not being able to restart immediately after losing power.	Upgrade lights to LED type.	\$29,300
Life Safety	Emergency Egress Lighting	Poor	I	Emergency egress lighting not observed in evidence intake area of building.	Install emergency egress lighting.	<div>LIFE SAFETY</div> \$8,000



Exterior Lighting



Exterior Lighting



Exterior Lighting



Exterior Lighting



High Bay Lighting



Evidence Intake Area



Evidence Intake Area

MECHANICAL + PLUMBING

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Heating Cooling	AHU + Condenser/ Mechanical Closet + Exterior	Poor	2	Units labeled as 4 were manufactured in 2005. The interior unit was manufactured in 2000, and was not in operation during visit. The exterior unit is nearing the end of its useful service life. Interior unit is in need of maintenance. Was not operating during visit. Actuators for air balance have been disconnected.	Determine if unit is being used and what it is serving. If being used, then replace exterior condensing units. Service interior unit for correct operation.	\$6,700
Heating Cooling	AHU + Condenser/ Mechanical Closet + Exterior	Poor	2	Units labeled as 5 was manufactured in 2005. The interior unit was manufactured in 2000 and was not in operation during visit. Piping into interior unit missing sealants into unit. Exterior unit is nearing end of life. Interior unit will need maintenance. Was not operating during visit. Actuators for air balance have been disconnected.	Add sealants to pipe penetrations. Replace exterior unit.	\$6,700
Heating Cooling	Chiller/Mechanical/Loft	Fair	2	The chiller air handler unit 2 is estimated to be 20 years-old.	Replace unit.	\$46,600
Heating Cooling	Chiller/Mechanical Loft	Fair	2	Chiller air handler unit 1 is estimated to be 20 years-old. The unit appears to be in standby mode.	Replace unit.	\$46,600
Heating Cooling	Air Cooled Condenser/ North Exterior Wall	Fair	1	The exterior condenser for chiller unit 2 was manufactured in 2007 and is approaching the end of its useful service life.	Replace condenser.	\$26,600
Heating Cooling	Air Cooled Condenser/ North Exterior Wall	Fair	1	Exterior condenser for chiller unit 1 was manufactured in 2008, and is approaching the end of its useful service life.	Replace the condenser.	\$26,600



Condenser Units



Line Set



AHU



Condenser Units



AHU 5



Chiller Air Handler: Unit 2



Chiller Air Handler: Unit 1



Chiller Air Handler: Unit 1



Exterior Condenser for Chiller 2



Exterior Condenser for Chiller 1



Exterior Condenser for Chiller 1

MECHANICAL + PLUMBING

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Heating Cooling	Furnace/Mechanical Loft/ West Exterior Wall	Fair	2	Condenser was manufactured in 2007, and the unit 3 furnace was manufactured in 2007. The condenser is approaching the end of its useful life.	Replace condenser.	\$6,700
Heating Cooling	Mini-Split/Server Room/Basement	Poor	1	The condenser in the basement and the north fan coil in server room were manufactured in 2011. The assessment team reported the fan on condenser sounded like a bearing is failing.	Service unit.	\$6,700
Heating Cooling	Furnace/Garage	Poor	1	The HEIL brand furnace was manufactured in 1995 and has surpassed its useful service life.	Replace furnace.	\$6,700
Heating Cooling	Condenser/Garage Area	Fair	2	Unit 6, was manufactured in 2007 Unknown operation. Condenser in basement. Unit approaching end of life.	Replace unit.	\$6,700
Heating Cooling	Furnace/Mechanical Loft	Good	3	Unit 8 is a forced air furnace manufactured in 2016. Some water damage is present around the refrigerant piping.	Inspect insulation for pipe exposure and ensure condensate line does not leak.	\$6,700
Heating Cooling	Humidifiers/ Mechanical Closet	Poor	1	Humidiclean brand humidifier units are serving air handling units (AHUs) that appear to be non operable. Humidiclean units are not functioning.	Remove abandoned equipment or demolish units.	\$8,600



Condenser



Furnace



Fan Coil



Fan Coil



Basement Condenser



HEIL Furnace



Furnace



Condenser



Furnace



Humidclean Units

MECHANICAL + PLUMBING

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Heating Cooling	Furnace/Mechanical Loft	Fair	2	The Trane brand forced air furnace was manufactured in 2007 and is at end of its useful life.	Replace forced air furnace.	\$6,700
Heating Cooling	Furnace/Mechanical Closet	Poor	2	Unit 9 is a Coleman brand forced air furnace manufactured in 2016. A flex duct from unit is pinched in several areas. Condenser is located in the basement.	Replace flex duct at pinch points and direction changes with hard duct. Condenser coils require cleaning.	\$8,700
Heating Cooling	Sump Pumps/ Basement North	Poor	1	Pump schedule shows that pumps are replaced every one to two years.	Replace sump pump system with a pumping system that is designed for more continuous operation.	\$8,000
Heating Cooling	Sump Pumps/ Basement/South	Poor	2	Pump schedule shows that pumps are replaced every one to two years.	Replace sump pump system with a pumping system that is designed for more continuous operation.	\$8,000



Trane Furnace



Unit 9



Unit 9



Condenser



Sump Pumps 1



Sump Pumps 2

FACILITY COMMENTS CONSTRUCTION

For Police Communication Center chart and drawings, see Police Office Building (p.20-21)



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Public Library Building

INTRODUCTION

The Spencer Public Library was originally conceived in 1883 and housed in homes. Its first permanent location on South Main Street (now Grand Avenue) was established in 1900. In 1902 Carnegie funds helped establish a new building in its current location at East 3rd Street which opened in 1905. The current building is in this same downtown location.

The building houses 41,621 printed volumes, 4,770 audiovisual items, two public meeting rooms, and offices and work spaces for 12 employees.

Quick Facts

- 14,835 sq. ft.
- Constructed in 1971
- Additions in 1984, 1989, 1996, 2004, and 2005
- Renovations in 2017

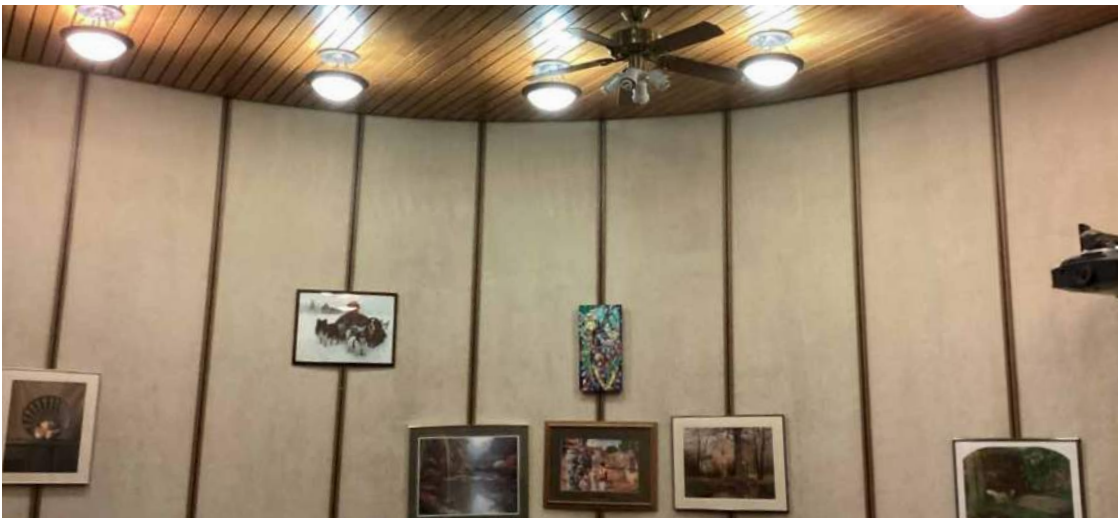


ARCHITECTURAL + STRUCTURAL

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Exterior Windows	Original Building Windows	Fair	2	There is a large single-paned window assembly adjacent to the round room. It is made up of three sections.	Replace with a thermally broken window assembly for better energy efficiency.	\$14,000
Interior Walls	Walls/Throughout	Fair	1	Interior concrete walls have been painted and in some locations have carpet adhered to them. The carpeted locations are worn, stained, and outdated. The offices and conference rooms have drywall installed. Restrooms contain ceramic wall tile systems.	Replace the carpet with acoustical wall panels.	\$14,900



Windows



Carpet on Walls

ELECTRICAL + TECHNOLOGY

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Exterior Lighting	Light Fixtures/ Building Canopy	Fair	2	Several existing recessed can lights on south side main entrance and one on north side of building are not LED.	Replace fixtures with LED type and eliminate dimmers in electrical room.	\$5,400
Other Electrical	Panelboard A-1 and A-2/Electrical Room	Poor	1	Panelboard A-1 and A-2 are outdated and have surpassed their useful service life.	Replace panelboards.	\$7,400



Exterior Can Lighting



Panel Boards



Panel A1



Panel A2

MECHANICAL + PLUMBING

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Heating Cooling	Boilers/Penthouse Mechanical Room	Fair	2	The Mighty Therm brand boilers are near the end of the expected useful service life.	Replace boilers.	\$47,900
Heating Cooling	Roof Top Condenser	Fair	1	Condensers were manufactured in 2002 have surpassed their useful service life.	Replace condensers.	\$39,900
Heating Cooling	Furnace/Conference Room	Fair	1	Unit has surpassed its useful service life.	Replace furnace and associated condenser.	\$6,700
Other Mechanical	Humidifier/Janitors Closet	Fair	1	A Herrtronic brand humidifier has power but doesn't seem to have been operating for some time. The unit has surpassed its useful service life.	Replace unit.	\$5,400



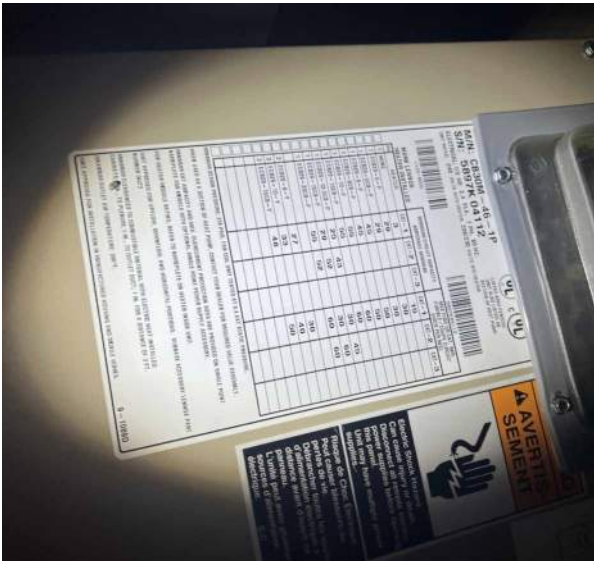
Boilers



Roof Top Roof Condenser



Roof Top Roof Condenser



Furnace



Condenser

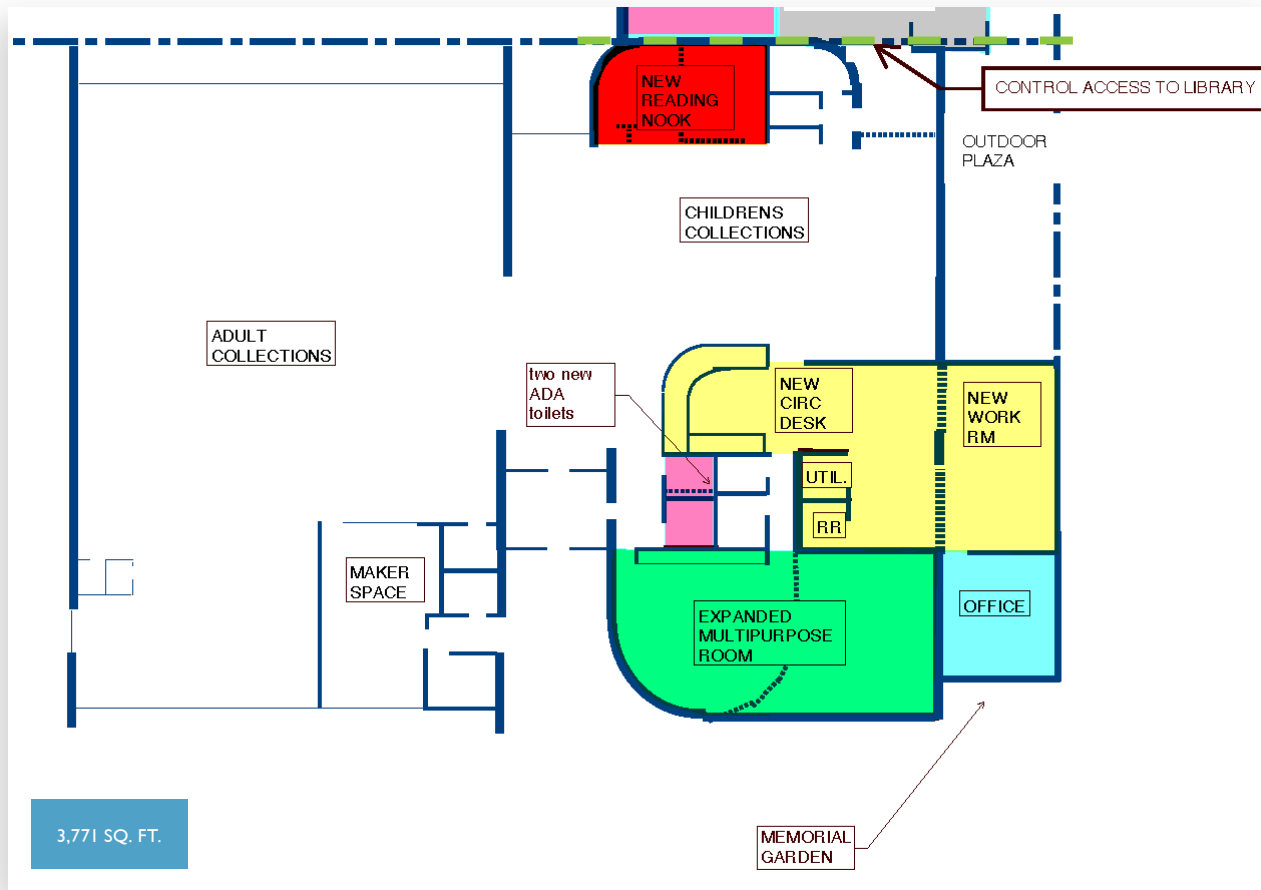


Humidifier

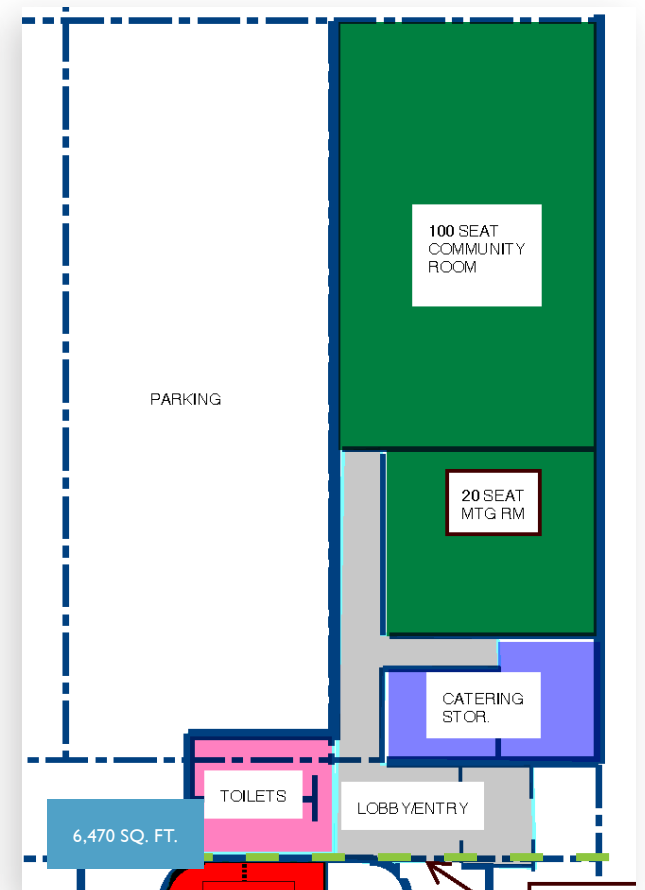
SITE CONCEPT OF PHASED EXPANSION



BLOCK FLOOR PLAN CONCEPT- PHASE 1 + 2



Lower Half of Concept-Phase 1



Top Half of Concept-Phase 2

FACILITY COMMENTS FOR NEW CONSTRUCTION

Is the existing facility meeting the functional needs?	Can the existing facility be adjusted, corrected, or added on to in order to meet the functional needs?	Is replacement the right answer?	If YES to replacement... What location is recommended?	FINAL SOLUTION Scope of work	FINAL SOLUTION Approximate cost*	FINAL SOLUTION Schedule
Yes	Yes	No-renovation and expansion	N/A	Phase 1 Renovation and addition Phase 2 Addition	Phase 1 - \$1,436,295 Phase 2 - \$3,032,813	Phase 1 Design: 6-8 months Construction: 8-10 months Phase 2 Design: 10-12 months Construction: 12-14 months

*See appendix for further cost information.



Public Works Street Division Storage

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Public Works Street Division Storage

INTRODUCTION

The Public Works Department is located on the east side of Spencer on the north side of the Little Sioux River, and manages approximately 97 miles of streets and all municipally held land within Spencer city limits, as well as oversees the solid waste division, the Northern Plains Regional Landfill (serving 17 communities and located near Graettinger), the 819-acre municipal airport and 97,348 sq. ft. of associated facilities, and all municipal sanitary and storm sewers. There are 35 employees across all divisions. The building houses all daily driver and plow trucks.

Quick Facts

- 17,203 sq. ft.
- Constructed in 1960



ARCHITECTURAL + STRUCTURAL

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Exterior Walls	Concrete Walls and Roof	Poor	I	The concrete walls and roof of the dome structure, which was originally constructed as a water treatment structure, are showing signs of deterioration. Rebar in the wall is exposed and corroded in several locations. Several cracks approximately 1/16" to 1/4" wide are visible in several locations throughout the roof and walls of the structure. While these cracks and deteriorated areas are not a cause for immediate concern, they are evidence the building is reaching the end of its usable life without significant repairs and/or renovations.	Begin planning for a replacement structure. If a replacement structure cannot be realized in the coming 2-5 years, then repairs are needed within the next 1-2 years to prolong the usable short-term life of the structure. Repair any significant cracks, patch deteriorated concrete, and repair, reinforce, and/or replace corroded rebar before patching the surrounding concrete to extend adequate short-term performance of the structure.	\$133,000



Wall Deterioration/Wide View



Wall Deterioration/Medium View



Wall Deterioration/Close View



Exposed Rebar and Deterioration



Concrete Roof



Cracks in Concrete Roof



Exposed Rebar



Joints in Roof



Deterioration at Exterior

ELECTRICAL + TECHNOLOGY

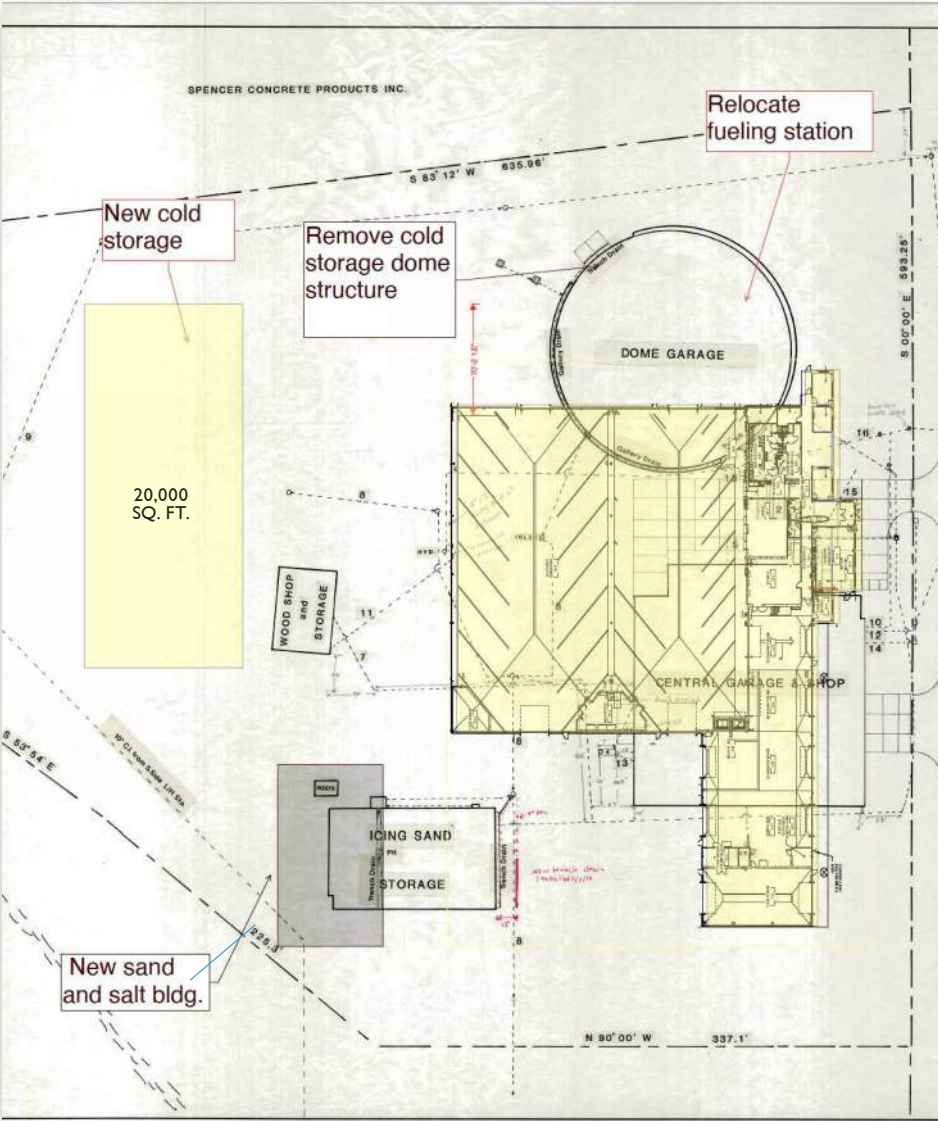
Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Interior Lighting	Light Fixtures	Fair	3	At least 12 light fixtures are not LED.	Upgrade lights to LED type.	\$9,400
Life Safety	Emergency Egress Lighting	Poor	I	Emergency egress lighting was not observed.	Install emergency egress lighting.	\$5,400





Storage Lights

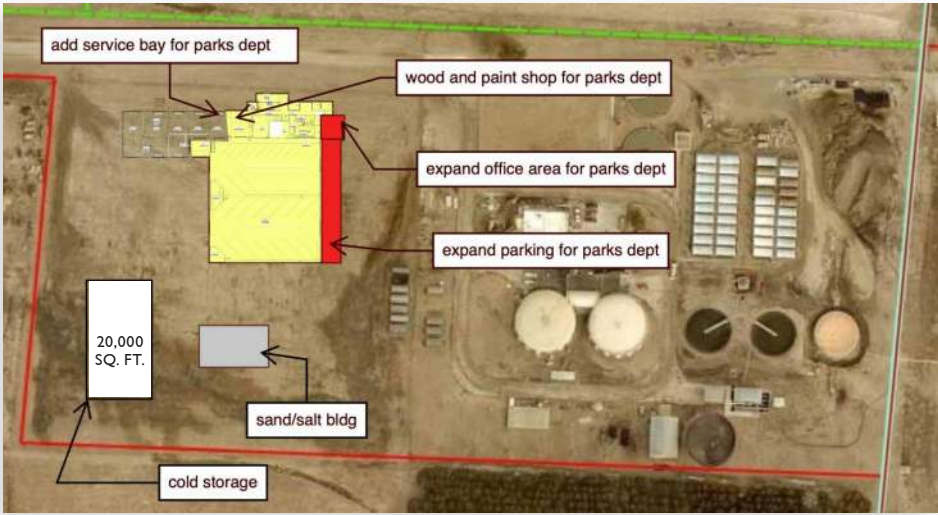
SITE CONCEPT



Site Option 1

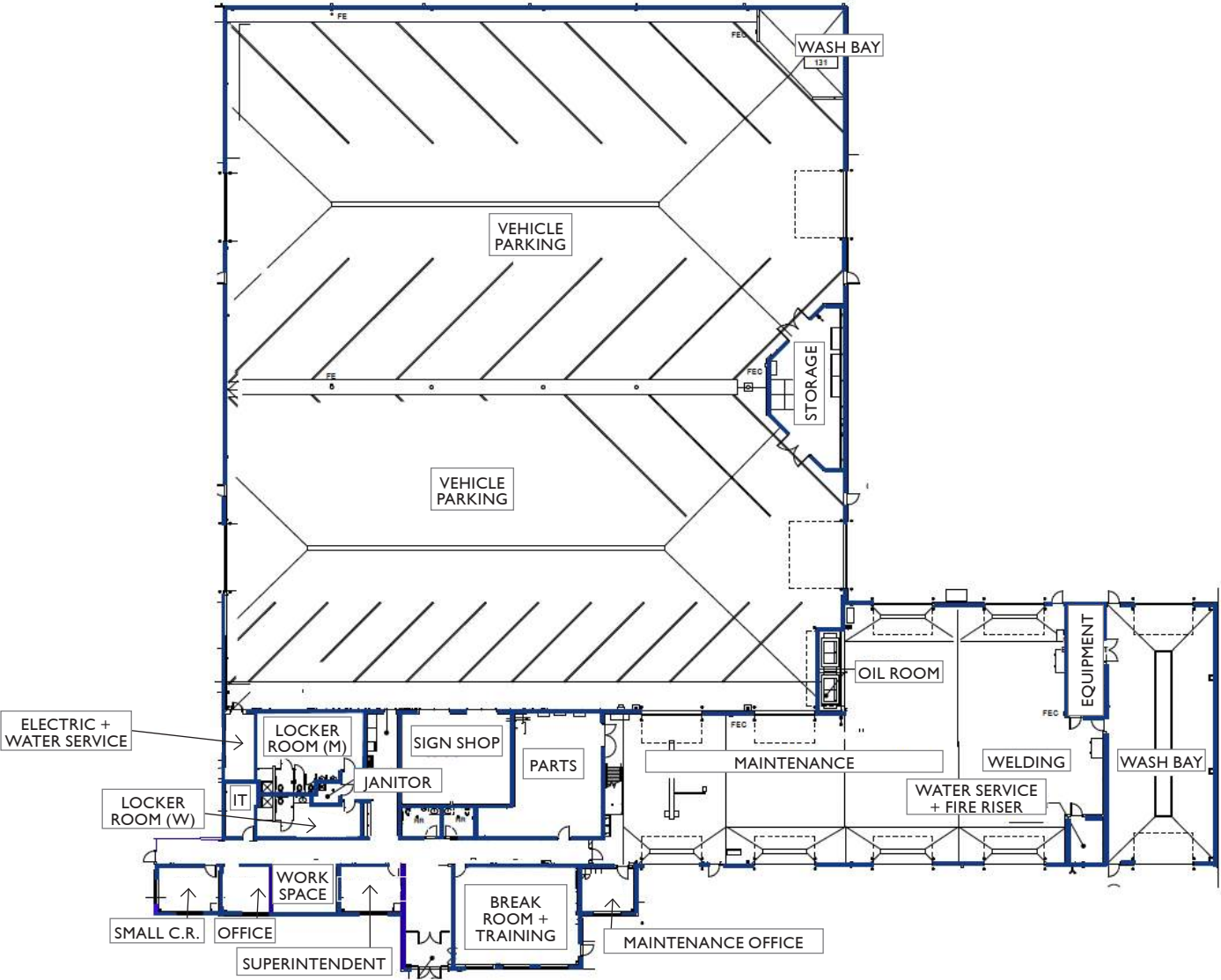


Site Option 2



Site Option 3

BLOCK FLOOR PLAN CONCEPT



FACILITY COMMENTS FOR NEW CONSTRUCTION

Includes cold storage, salt and sand structure, and miscellaneous storage bins.

Is the existing facility meeting the functional needs?	Can the existing facility be adjusted, corrected, or added on to in order to meet the functional needs?	Is replacement the right answer?	If YES to replacement... What location is recommended?	FINAL SOLUTION Scope of work	FINAL SOLUTION Approximate cost*	FINAL SOLUTION Schedule
No	No	Yes-relocation	Yes-options 2 + 3	Build a new facility	\$4,750,000	Design: 10-12 months Construction: 12-14 months

*See appendix for further cost information.



Public Works Street Division Central Garage

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Public Works Street Division Central Garage

INTRODUCTION

The building includes office and work space for 16 employees, vehicle, and large equipment maintenance, and storage.

Quick Facts

- 21,688 sq. ft.
- Constructed in 1980



ARCHITECTURAL + STRUCTURAL

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Exterior Roof	Roof/Northwest	Poor	1	The Thermoplastic Polyolefin (TPO) roof membrane was installed roughly 10 years ago. There is evidence of movement in the northwest corner where the material has pulled the metal flashing away from the edge. There is also evidence of failure on the parapet walls.	Repair the northwest corner immediately to avoid further damage. Remove TPO membrane and install metal panels on parapet walls.	\$20,000
Exterior Roof	Roof	Fair	3	The Thermoplastic Polyolefin (TPO) roof membrane was installed approximately 10 years ago. The average useful life is 20 years.	Replace roof.	\$577,000
Exterior Walls	Rock Piles at Exterior Walls	Poor	1	Several rock piles were added along the exterior walls of the buildings, reportedly for the sole reason of storing the rock. However, the presence of the rock allows moisture to sit against the steel plates that connect the precast concrete wall panels around portions of the building perimeter. As a result, several of these connections appear to be corroded (rusted) and in need of repair. Not all corroded connections could be observed due to the presence of the rock.	Repair connections that have been corroded before the corrosion becomes significantly worse. Eliminate the rock stored against the walls so the cause of the corrosion is mitigated.	\$16,000
Exterior Walls	Pre-cast Walls	Fair	1	The majority of the building is constructed with pre-cast concrete panels. The sealants on the panels have started to separate and lose flexibility.	Remove and replace exterior sealants.	\$7,100
Exterior Windows	Windows	Poor	2	The south window wall is used for passive solar heating. Several of the windows have failed.	Replace failed windows.	\$8,900
Exterior Doors	Exterior Doors	Poor	1	There are three exterior doors that are rusted with rusted frames.	Replace doors and frames.	\$15,000
Interior Floors	Office/Breakroom/Restrooms	Fair	2	The flooring in these areas is a sheet vinyl product. It has stains throughout and is damaged in a few locations.	Replace flooring.	\$7,600



Parapet Wall



Roof



Rock Piles and Corroded Connections 1



Rock Piles and Corroded Connections 2



Corroded Connection of Precast Panels



Corroded Connection of Precast Panels



Precast Concrete Caulking



Windows



Exterior Door



Flooring

ELECTRICAL + TECHNOLOGY

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Interior Lighting	Building	Fair	3	At least 24 fixtures in areas other than the high bay equipment areas are not LED.	Upgrade lights to LED type.	\$26,600
Life Safety	Emergency Egress Lighting	Poor	1	Emergency egress lighting and exit signs were not observed.	Install emergency egress and exit lighting.	\$16,000

LIFE
SAFETY

MECHANICAL + PLUMBING

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Heating Cooling	Furnace/Part Storage Room	Fair	1	The Coleman brand forced air furnace was manufactured in 2017. While the unit is in good condition, the duct layout needs to be addressed.	Replace ductwork with a different layout.	\$6,700
Heating Cooling	MAU/Garage Outside Paint Booth	Poor	1	The Dravo Hasting brand make-up air unit (MAU) for the paint booth was manufactured in 1980 and has surpassed its useful service life.	Replace make-up air unit.	\$46,600
Other Plumbing	Garage Floor Drain	Poor	1	Floor drain pit was full of water. No oil/sand separator could be located.	Install a flame waste separator.	\$16,000
Heating Cooling	Exhaust/Main Garage	Poor	1	There is no Co/NO2 exhaust system installed.	Install CO/NO2 exhaust system.	\$26,000
Heating Cooling	Minisplit/Roof/Breakroom	Fair	2	The Fujitsu brand minisplit heat pump was installed in 2017.	Perform regular maintenance.	\$6,700
Heating Cooling	Exhaust Fan/West Exterior Wall Outside Main Garage	Fair	2	During the walk through, the assessment team was informed that the system works and is used during the winter. Age of equipment is unknown.	Contract for the unit to be serviced to ensure proper operation and log age of unit. Consider replacing to a more efficient unit.	\$10,000

LIFE
SAFETY



Coleman Furnace



MAU



Floor Drain



No Exhaust System



Minisplit Fan Coil



Minisplit Condensing Unit



Exhaust Fan

FACILITY COMMENTS FOR NEW CONSTRUCTION

Is the existing facility meeting the functional needs?	Can the existing facility be adjusted, corrected, or added on to in order to meet the functional needs?	Is replacement the right answer?	If YES to replacement... What location is recommended?	FINAL SOLUTION Scope of work	FINAL SOLUTION Approximate cost*	FINAL SOLUTION Schedule
No	No	Yes- relocation	Yes- options 2 + 3	Build a new facility	\$17,658,125	Design: 10-12 months Construction: 12-14 months

FACILITY COMMENTS FOR NEW CONSTRUCTION: BUILD A NEW COMBINED STREETS AND PARKS DEPARTMENT

Is the existing facility meeting the functional needs?	Can the existing facility be adjusted, corrected, or added on to in order to meet the functional needs?	Is replacement the right answer?	If YES to replacement... What location is recommended?	FINAL SOLUTION Scope of work	FINAL SOLUTION Approximate cost*	FINAL SOLUTION Schedule
No	No	Yes	Existing central garage or water treatment site	Build a new facility instead of two separate facilities	\$25,483,125 (A savings of \$1,587,000)	Design: 10-12 months Construction: 12-14 months

For Central Garage chart and drawings, see *Street Division Storage* (p.56)

*See appendix for further cost information.



Public Works Solid Waste Division Shop

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Public Works Solid Waste Division Shop

INTRODUCTION

The building includes overnight truck storage, a shop with two vehicle stalls, and an area of appliance de-manufacturing.

Quick Facts

- 11,200 sq. ft. building
- Constructed in 1979

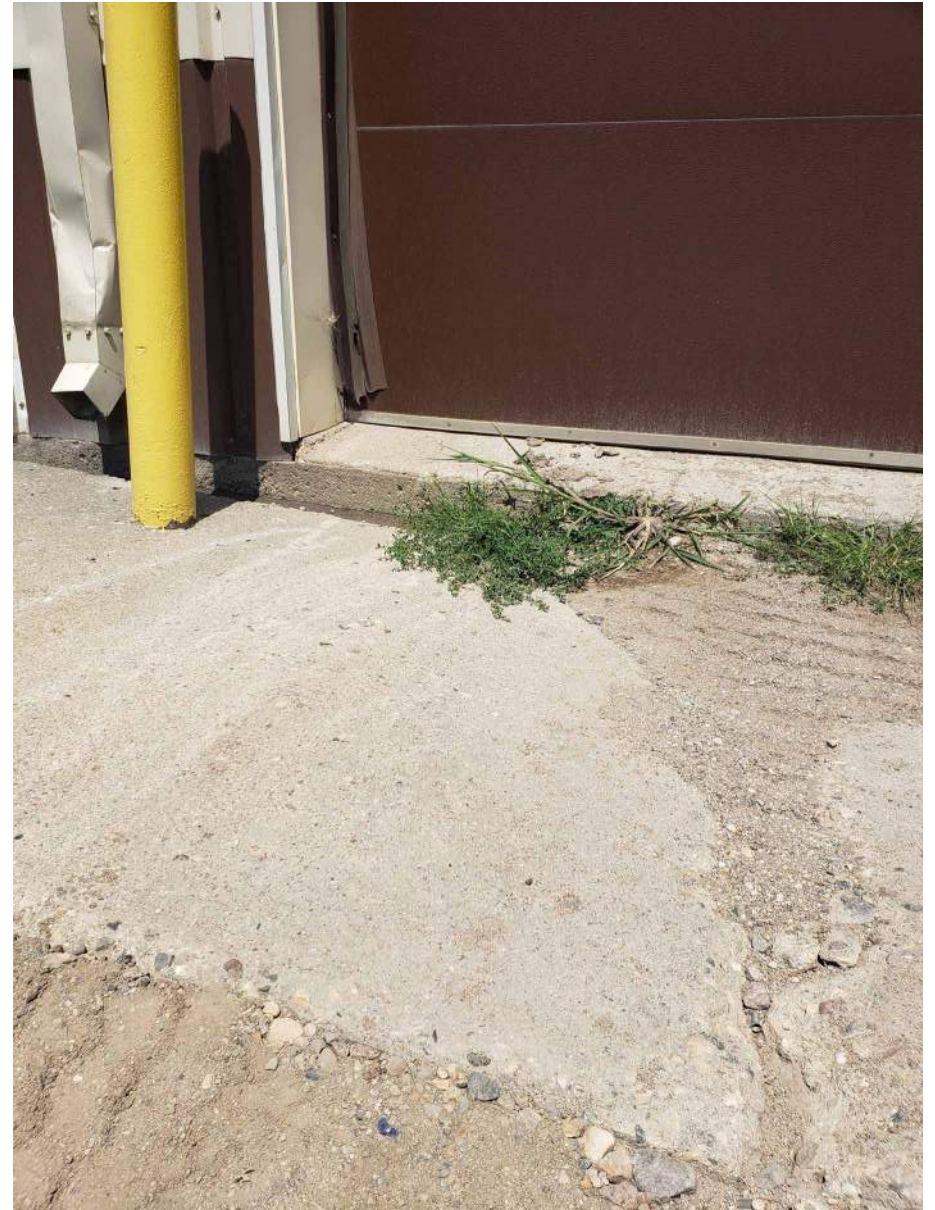


SITE + GROUNDS

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Vehicle Routes	Concrete Apron	Poor	2	The concrete apron in front of the garage doors is cracking and has settled.	Remove and replace concrete apron.	\$25,300



Solid Waste Concrete Apron



Solid Waste Concrete Apron

ARCHITECTURAL + STRUCTURAL

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Exterior Roof	Roof	Fair	I	The roof is a sloped corrugated metal that drains to gutters on the south side and off the building on the north side. It is original to the 1979 construction of the building. The downspouts are damaged and don't drain away from the building. The average useful life is 25-30 years.	Replace roof, gutters, and downspouts.	\$74,500
Exterior Walls	X-bracing	Poor	I	X-bracing in the north wall is damaged, presumably from truck impacts. The X-bracing is needed to resist the loads acting on the building during significant wind events.	Replace the damaged X-bracing and consider installing a bumper that will still allow room for parking yet reduce the likelihood of future damage.	\$10,700
Exterior Walls	Metal Walls	Poor	I	The exterior walls are vertical metal panels. There is rust and damage throughout.	Replace damaged exterior metal wall paneling.	\$6,200
Exterior Windows	Windows	Fair	I	The windows are a vinyl slider-style window with single-paned glass. There is evidence of leaks at a some locations.	Replace windows.	\$7,800
Exterior Doors	Overhead Doors/ Overnight Parking + Shop	Good	I	There are six electric overhead doors serving these areas. All are in working condition. One of the six appears older and is poor cosmetic shape.	Replace one door.	\$9,400



Sloped Roof



Damaged X-Bracing



Damaged X-Bracing



Damaged X-Bracing/Close Up



Metal Wall Paneling



Metal Wall Paneling



Window

ARCHITECTURAL + STRUCTURAL

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Exterior Doors	Overhead Doors/ Loading Dock	Fair	I	Four manual overhead doors are located on the loading dock. All are in working condition. Three of the doors appear older.	Replace overhead doors.	\$5,200
Interior Doors	Restrooms/Offices	Poor	I	There are five hollow-core, wood doors. There is damage to the office and breakroom doors. The restroom doors lack ADA-compliant hardware.	Replace doors and hardware.	ADA \$5,000
Exterior Other	Accessibility/Entrance	Poor	I	There is not an ADA access to the east portion of the building.	Provide ADA accessible entrance to the building.	ADA \$35,600
Interior Floors	Overnight Parking/ Shop Flooring/ Appliance De-manufacturing	Fair	I	These areas have concrete flooring. There is minor cracking throughout. The overnight parking section has no floor drains. Snow melting off trucks is running on the floor toward the north wall, causing it to rust.	Install floor drains in the overnight parking section of the building.	\$30,000
Interior Other	Accessibility/Restrooms	Poor	I	The men's and women's restrooms are not ADA-compliant due to clearance and fixtures.	Remodel restrooms.	\$10,000



Overhead Doors



Overhead Doors



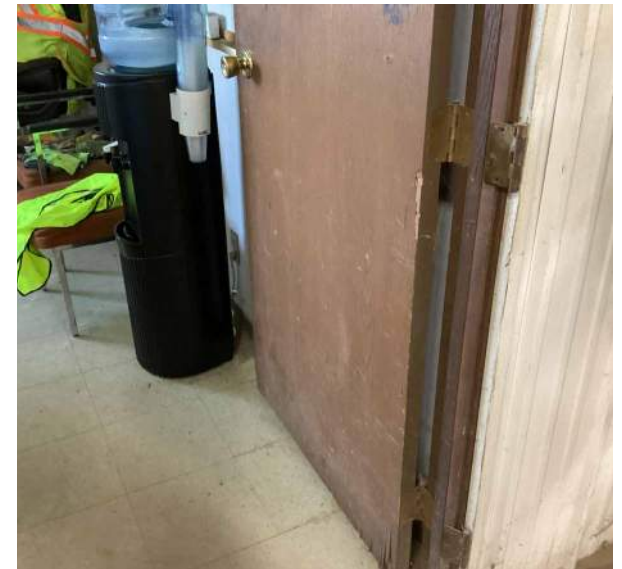
Entrance Accessibility



Concrete Floor



Restroom



Doors and Hardware

ELECTRICAL TECHNOLOGY

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Life Safety	Emergency Egress Lighting/Exterior	Poor	I	Emergency egress lighting and exit signs were not observed.	Install emergency egress and exit lighting.	\$8,300

LIFE SAFETY

MECHANICAL + PLUMBING

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Heating Cooling	Gas Fired Radiant Tube Heaters/West	Poor	I	The gas fired radiant tube heaters are unable to maintain an air temperature to melt snow and ice from equipment. It appears as if the heater is undersized for the space.	Replace heater.	\$10,000

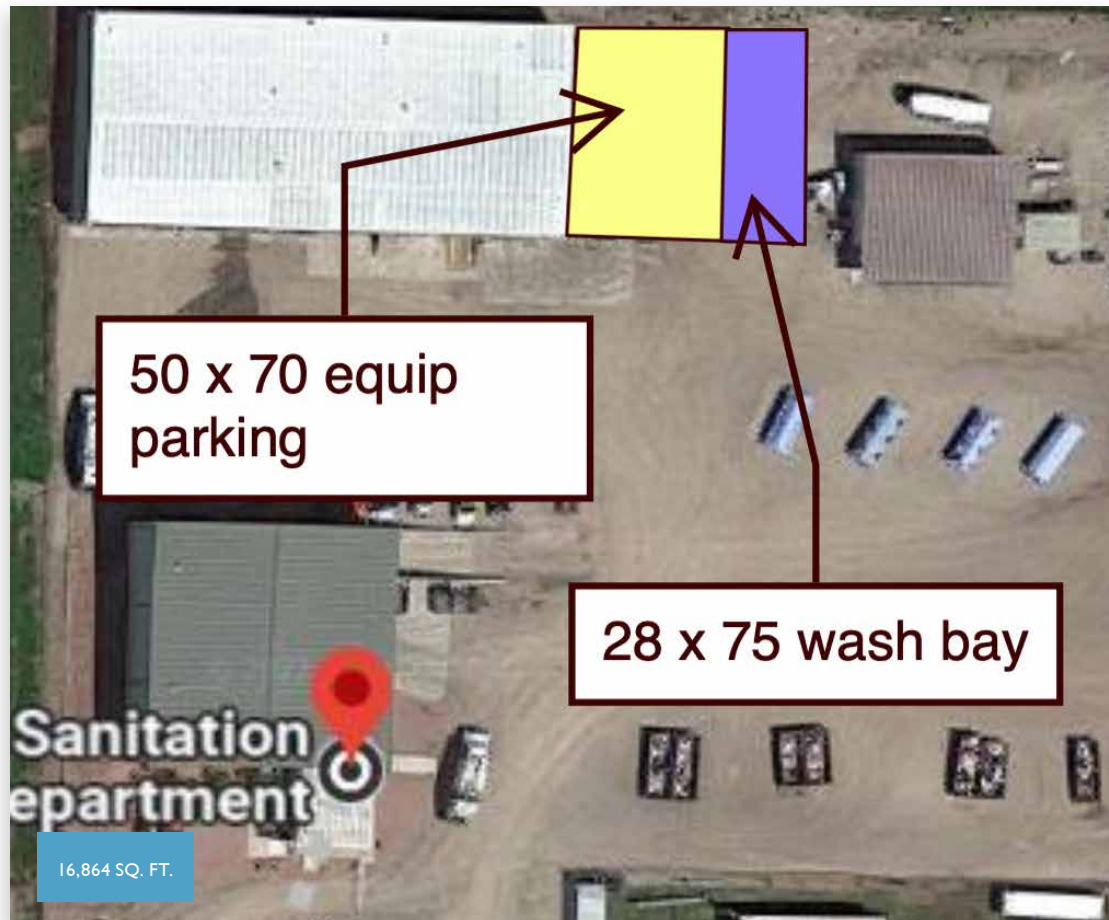


Gas Fired Radiant Tube Heaters

SITE CONCEPT



BLOCK FLOOR PLAN CONCEPT



FACILITY COMMENTS FOR NEW CONSTRUCTION

Is the existing facility meeting the functional needs?	Can the existing facility be adjusted, corrected, or added on to in order to meet the functional needs?	Is replacement the right answer?	If YES to replacement... What location is recommended?	FINAL SOLUTION Scope of work	FINAL SOLUTION Approximate cost*	FINAL SOLUTION Schedule
Yes	Yes	No- renovation and expansion	N/A	Interior renovation and addition	\$1,484,550	Design: 6-8 months Construction: 8-10 months

*See appendix for further cost information.



Public Works Landfill Division Shop

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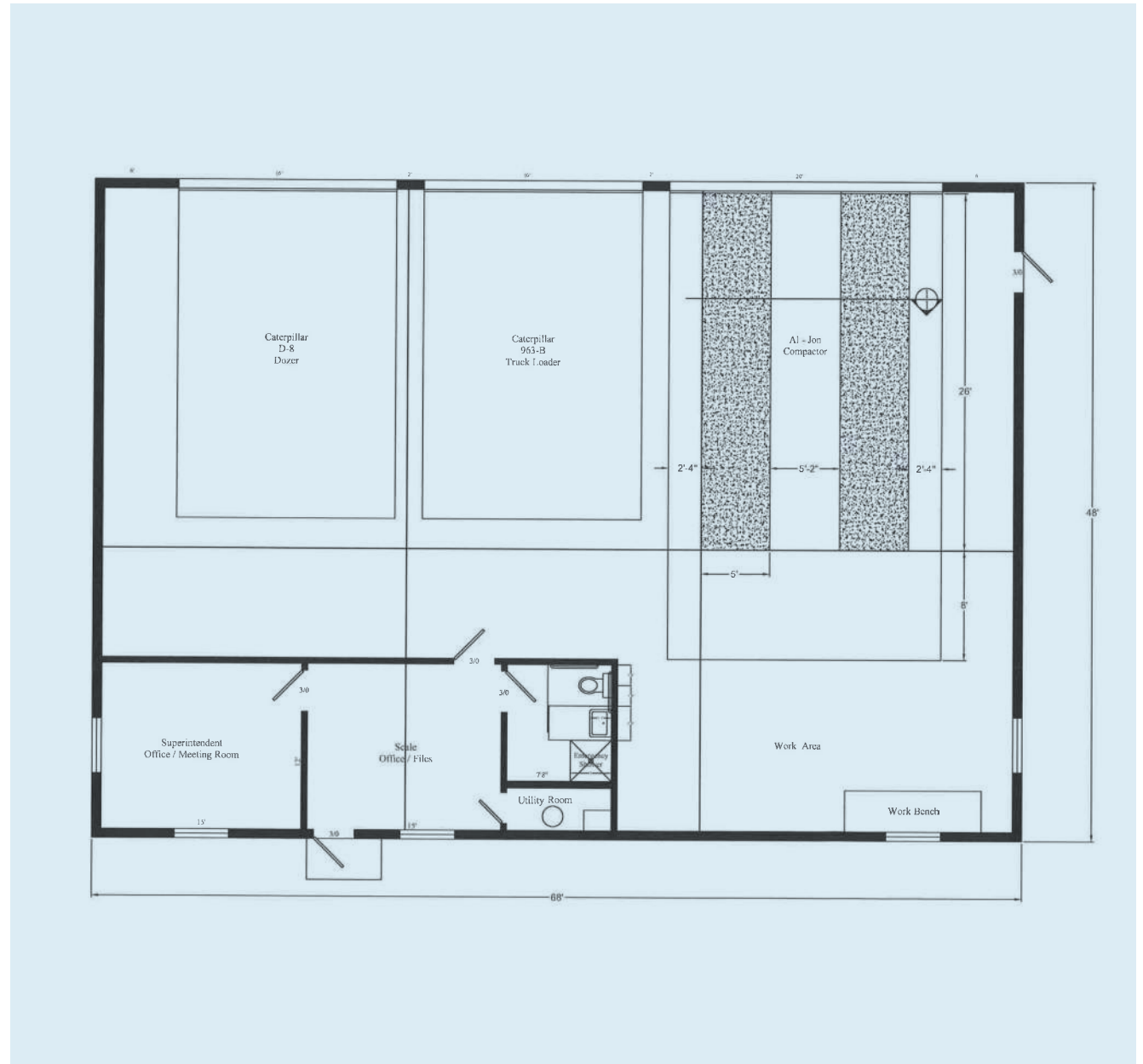
Public Works Landfill Division Shop

INTRODUCTION

Located 27 miles east/northeast of Spencer at the southwest corner of the landfill campus, the building includes office space for two office staff and a shop space. Two additional field staff work at the site.

Quick Facts

- 3,264 sq. ft.
- Constructed in 2002



SITE + GROUNDS

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Drainage	Gravel Parking Lot	Fair	3	Gravel on north side of west building has large ruts. Gravel on south side of east building is flat. This creates standing water during rain events and longer time to dry out.	Construct concrete pavement in heavy traffic areas.	\$116,000
Pedestrian Routes	Parking	Poor	1	There is no designated accessible parking and walkway to the office.	Construct concrete pavement in parking area on east side of west building. Furnish and install striping and signage for accessible stalls. Construct concrete walk to concrete slab on south side of west building.	ADA \$18,000



Drainage



Drainage



Walk Accessibility



Parking

ARCHITECTURAL + STRUCTURAL

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Interior Other	Restroom	Poor	I	There is one restroom that is not ADA compliant.	Upgrade current restroom to ADA Standards and install second restroom.	*

* This cost has been added to the building renovation in the cost estimate on page 94.



Restroom

ELECTRICAL + TECHNOLOGY

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Exterior Lighting	Lighting/Exterior	Poor	1	Lighting is inadequate at site entrance.	Install site pole light near facility entrance.	\$5,600
Interior Lighting	Light Fixtures/Office Area and Shop	Fair	2	There are at least 16 fixtures that are not LED.	Upgrade lights to LED type.	\$16,700
Security	Entrance/Scale	Fair	1	No camera view of scale area and entrance areas.	Add security camera with monitor in office for monitoring incoming and outgoing traffic.	\$5,400



Side Entrance Lighting



South Side of the Building

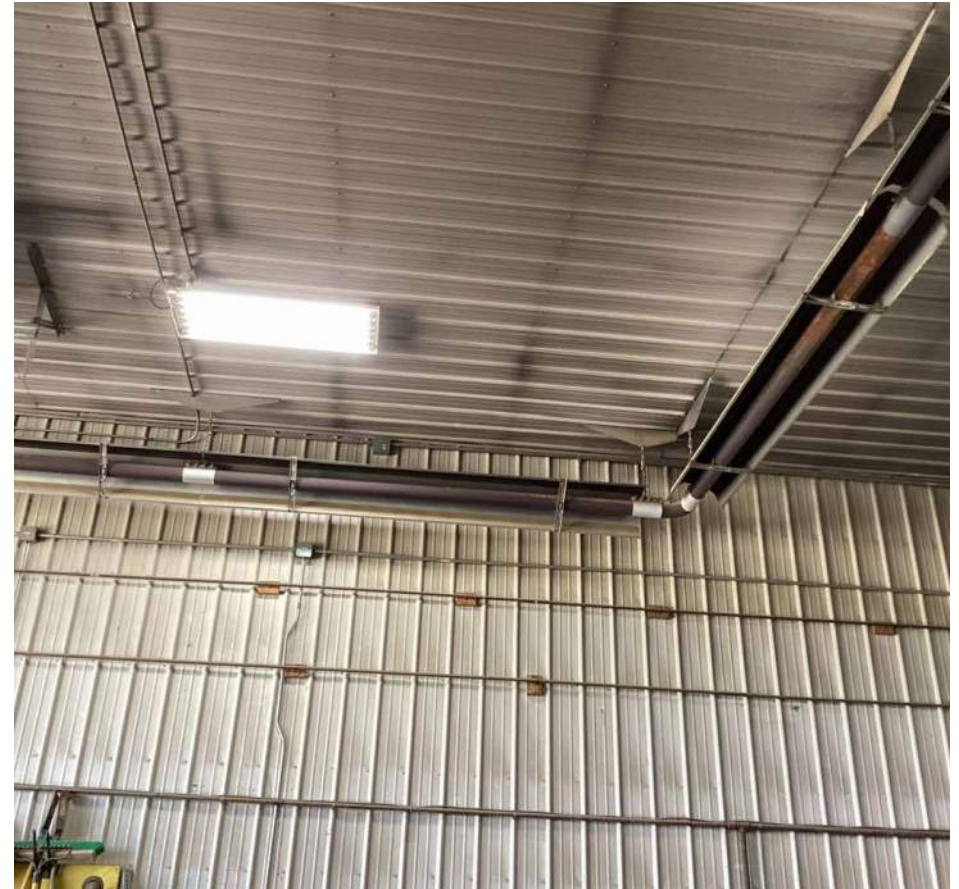
MECHANICAL + PLUMBING

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Heating Cooling	Furnace	Fair	1	The gas fired furnace serves the office, breakroom, and restroom. It appears to be original to the 2002 building. The average useful life is 18 years.	Replace the furnace.	\$7,500
Heating Cooling	Exhaust System/Shop Area	Poor	1	The shop ceiling appears to have soot residue from vehicle exhaust. No CO/NO2 exhaust system is present.	Install CO/NO2 exhaust system.	\$8,700
Heating Cooling	Shop	Fair	2	The shop area has gas-fired infrared tube heaters. The burner tube is rusted in spots. The age is unknown but appear to be original to building. The average useful life is 18 years.	Replace heaters.	\$10,000

LIFE
SAFETY

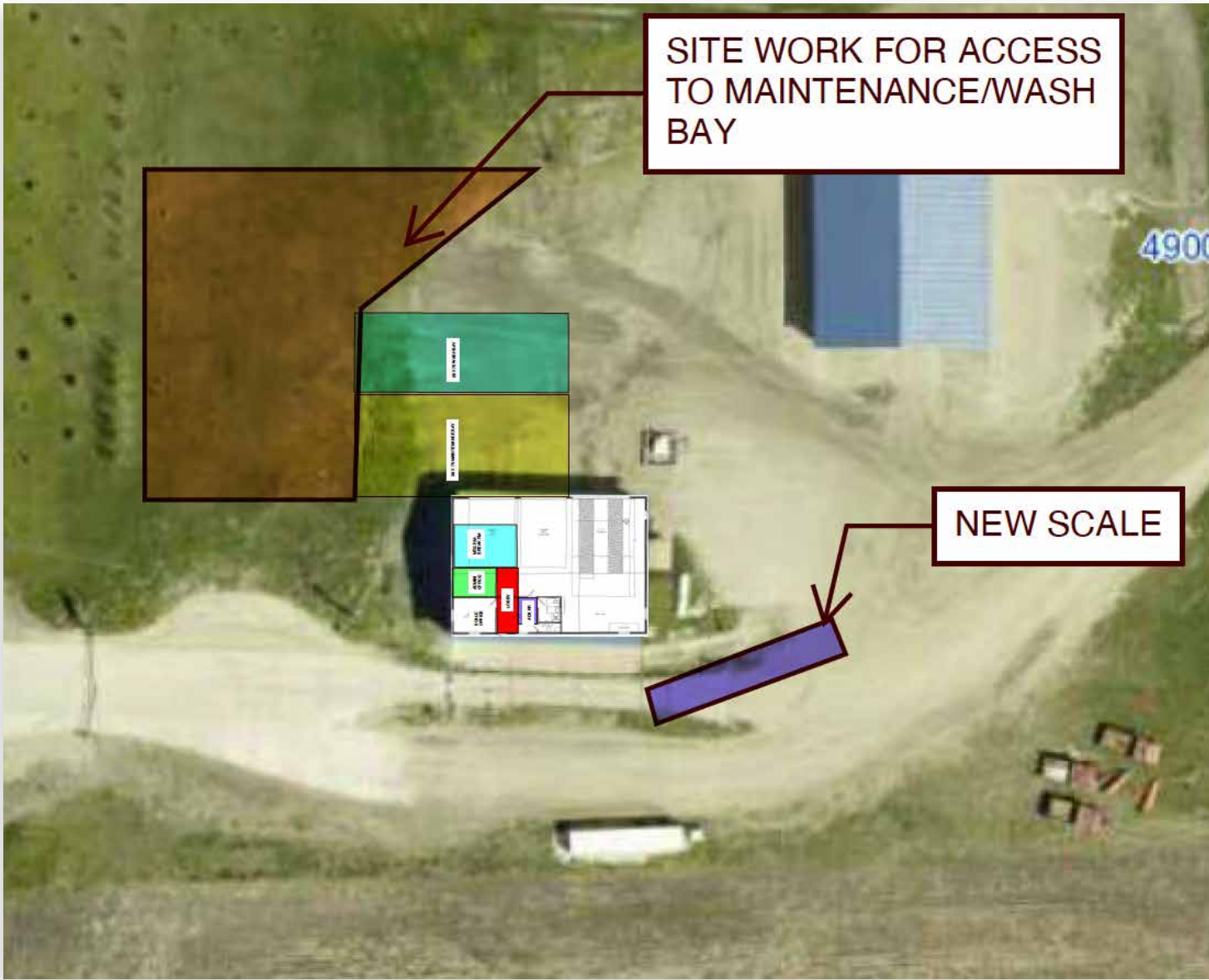


Furnace

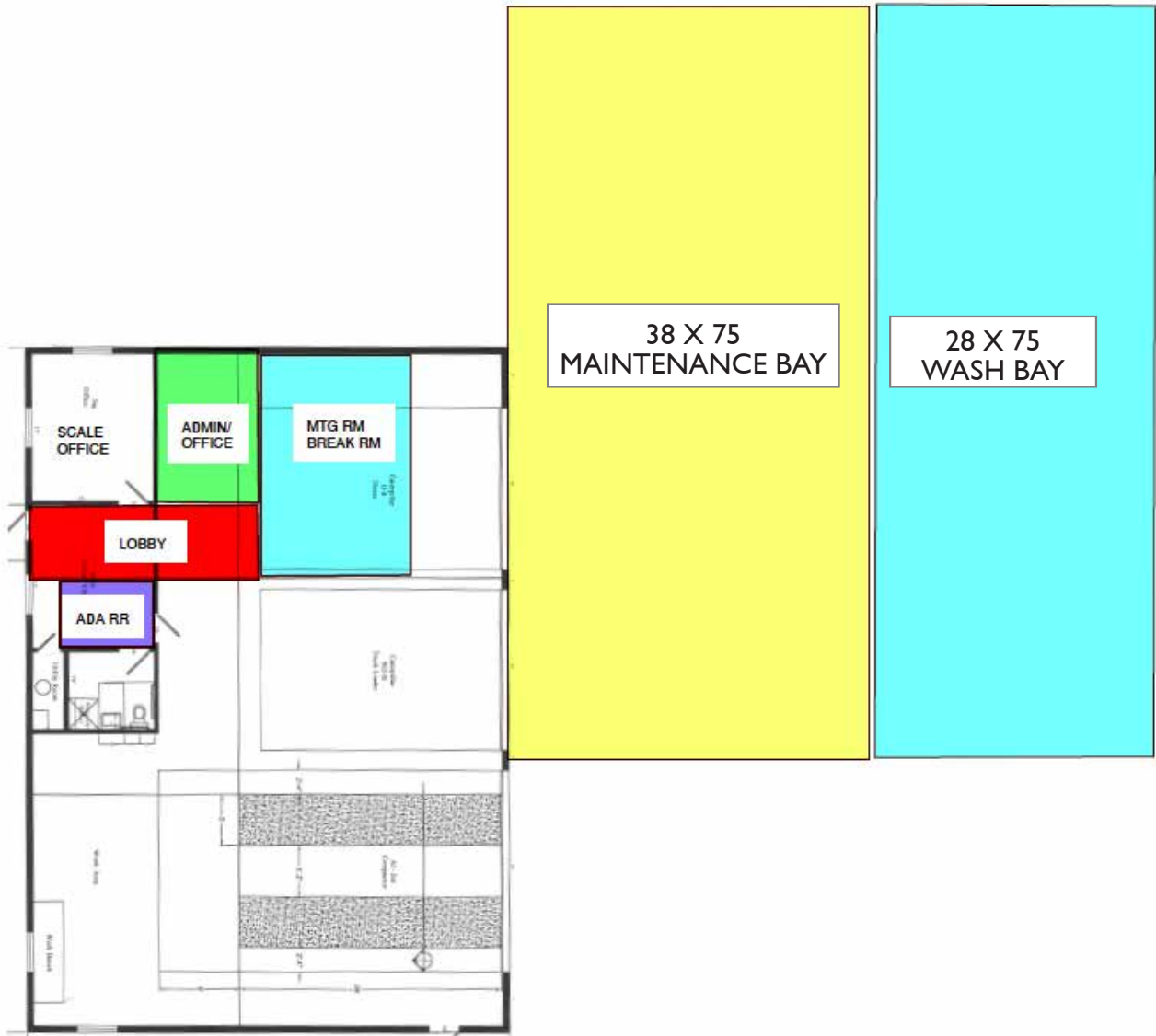


Infrared Tube Heaters

SITE CONCEPT



BLOCK FLOOR PLAN CONCEPT



FACILITY COMMENTS FOR NEW CONSTRUCTION

Is the existing facility meeting the functional needs?	Can the existing facility be adjusted, corrected, or added on to in order to meet the functional needs?	Is replacement the right answer?	If YES to replacement... What location is recommended?	FINAL SOLUTION Scope of work	FINAL SOLUTION Approximate cost*	FINAL SOLUTION Schedule
Yes	Yes	No-renovation and expansion	N/A	Interior renovation and addition	\$1,537,545	Design: 6-8 months Construction 8-10 months

*See appendix for further cost information.



Parks Maintenance Facility

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Parks Maintenance Facility

INTRODUCTION

Located at the east side of East Leach Park along 4th Street southeast, near the Little Sioux River and existing city campground, the building provides office and work space for three employees, undersized maintenance space for parks equipment, and limited storage of equipment, related supplies, and chemical herbicide. Vehicles, larger equipment, and bulk supplies are stored outside.

Quick Facts

- 2,688 sq. ft.
- Constructed in 1977



SITE + GROUNDS

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Vehicle Routes	Concrete Pavement	Fair	2	The concrete pavement on the south side of the building is cracking and settling.	Remove and replace concrete pavement.	\$73,200
Other Site + Grounds	Fence	Poor	2	The wood fence is falling apart.	Remove and replace fence.	\$9,600



Concrete Pavement



Concrete Pavement



Fence

ARCHITECTURAL + STRUCTURAL

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Exterior Roof	Maintenance Shop Roof	Fair	I	The roof is sloped corrugated metal that drains to gutters on the north and south side. The roof is original to the 1977 construction. The gutters appeared to be clogged on both sides. The downspout on the south side is damaged and not fixed to the building. The average useful life is 25-30 years.	Replace the roof, gutters, and downspouts.	\$17,900
Exterior Walls	Maintenance Shop Walls	Fair	I	The exterior walls are vertical metal panels. There is damage throughout and areas with patches.	Replace damaged sections of wall panels and install bollards to prevent future damage. Repaint exterior walls to match.	\$20,000
Exterior Windows	Maintenance Shop Windows	Poor	I	There are six aluminum, double hung, single-paned windows. The glazing has deteriorated and caulking is missing.	Replace windows.	\$9,000
Exterior Doors	Cold Storage Shed	Fair	3	There are two sets of manual sliding garage doors on the building. Both appear to be operating correctly.	Perform regular maintenance. Consider upgrading to electric overhead doors. Cost provided for door upgrade.	\$9,400
Interior Walls	Maintenance Shop Interior Walls	Fair	I	Wood walls are in the shop areas, while drywall is in the office and breakroom areas.	Install drywall over wood to provide fire rating.	\$6,400
Interior Other	Accessibility/ Restroom	Poor	I	There is one restroom that is not ADA-compliant.	Remodel restroom to ADA Standards and install a second restroom.	ADA \$100,000



Sloped Roof



Exterior Walls



Exterior Walls



Window



Sliding Door



Wood Walls



Restroom



Restroom

ELECTRICAL + TECHNOLOGY

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Exterior Lighting	Security Light/Exterior	Poor	1	No security/site lighting.	Install six or more wall packs around main building and three or more around storage building.	\$9,600
Interior Lighting	Light Levels/ Storage Building	Poor	1	Poor light level for space.	Install ten or more 4-foot linear fixtures to increase light level.	\$12,000
Interior Lighting	Fixtures/Throughout	Fair	2	There are at least 20 fixtures that are not LED.	Upgrade lights to LED type.	\$18,700
Life Safety	Emergency Egress Lighting/Exterior	Poor	1	Emergency egress lighting and exit signs were not observed.	Install emergency egress and exit lighting.	\$8,400
Other Electrical	Electrical Panels	Poor	1	Electrical panels are not accessible due to placement in closet according to the National Electric Code, NFPA 70E: Electrical Equipment Working Space.	Install a new panelboard in an accessible location and remove existing panelboards. Complete with replacement of main fused panel.	\$8,000

LIFE
SAFETY

MECHANICAL + PLUMBING

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Heating Cooling	Air Conditioner/ Office Area	Fair	2	The Soleus Air brand unit is in working order. Heat is discharged into the garage space.	Install a mini split system capable of multiple heads. Discharge heat to exterior of building.	\$6,700

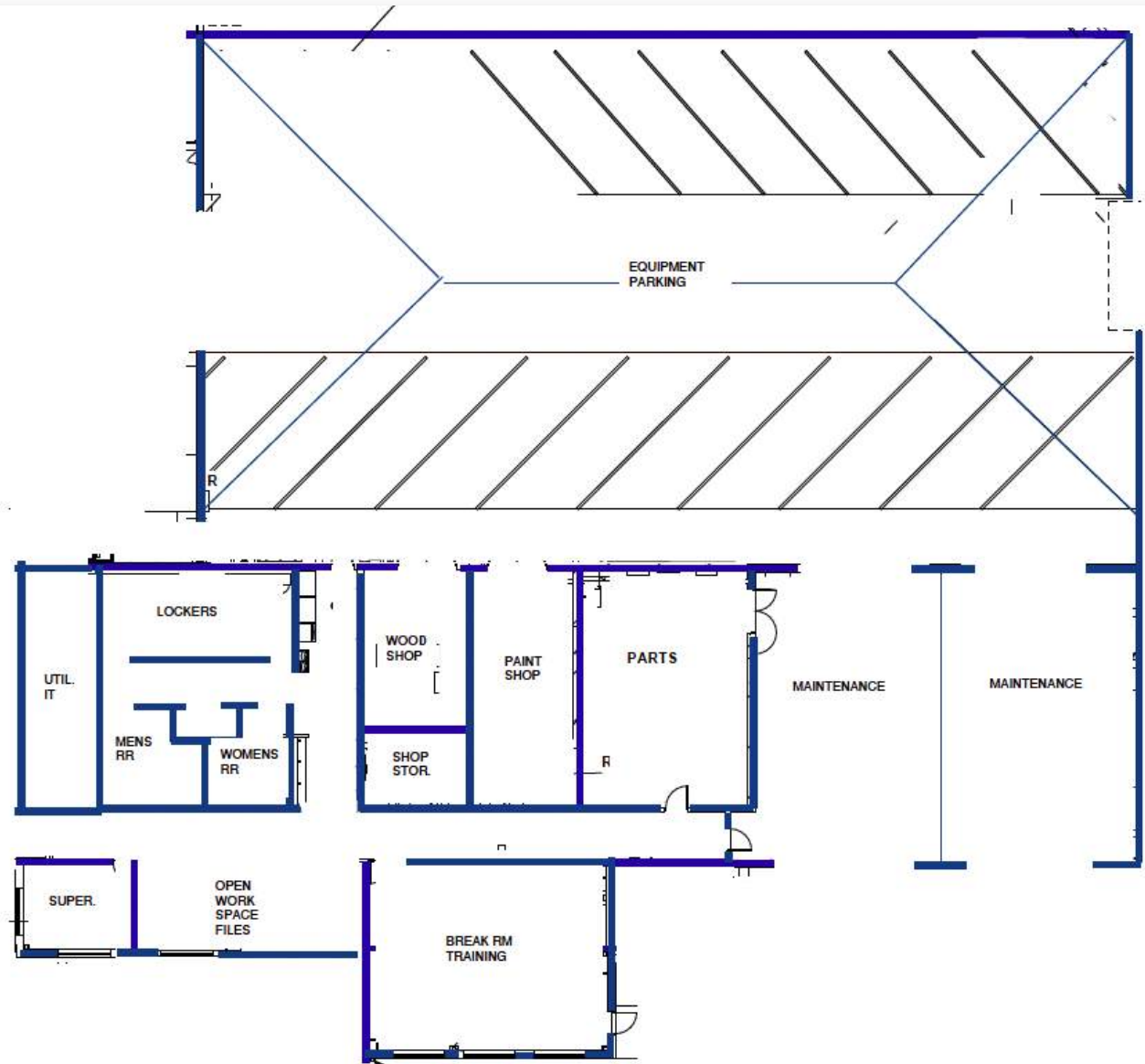


Inadequate Interior Light Level

SITE CONCEPT



BLOCK FLOOR PLAN CONCEPT



12,432 SQ. FT.

FACILITY COMMENTS FOR NEW CONSTRUCTION

Is the existing facility meeting the functional needs?	Can the existing facility be adjusted, corrected, or added on to in order to meet the functional needs?	Is replacement the right answer?	If YES to replacement... What location is recommended?	FINAL SOLUTION Scope of work	FINAL SOLUTION Approximate cost*	FINAL SOLUTION Schedule
No	No	Yes	Reuse existing central garage	Renovate central garage or build new	Renovate - \$1,464,300 Build new - \$4,662,000	Design: 6 -8 months Construction: 9-12 months

FACILITY COMMENTS FOR NEW CONSTRUCTION: BUILD A NEW COMBINED STREETS AND PARKS DEPARTMENT

Is the existing facility meeting the functional needs?	Can the existing facility be adjusted, corrected, or added on to in order to meet the functional needs?	Is replacement the right answer?	If YES to replacement... What location is recommended?	FINAL SOLUTION Scope of work	FINAL SOLUTION Approximate cost*	FINAL SOLUTION Schedule
No	No	Yes	Existing central garage or water treatment site	Build a new facility instead of two separate facilities	\$25,483,125 (A savings of \$1,587,000)	Design: 10-12 months Construction: 12-14 months

*See appendix for further cost information.



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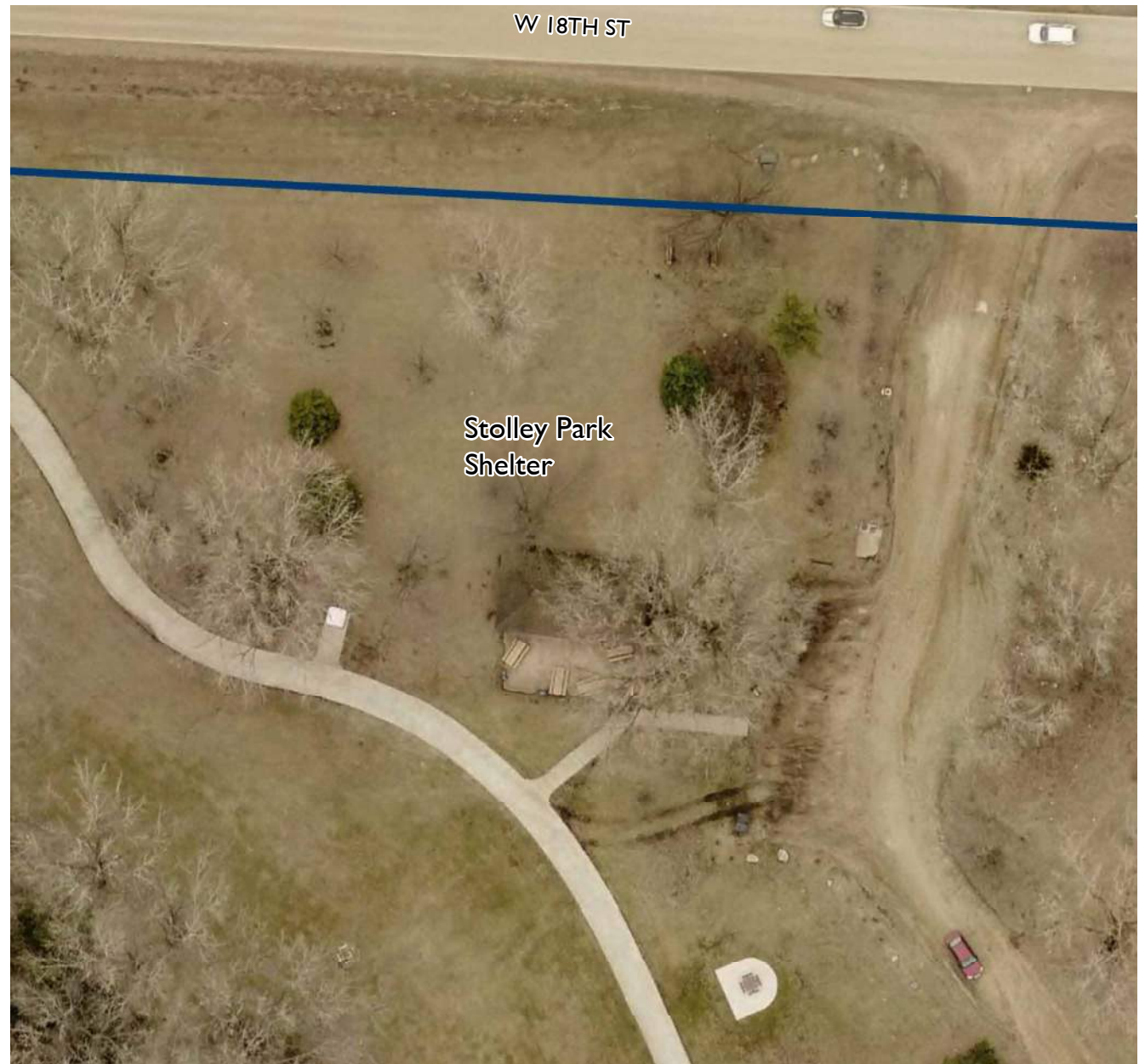
Stolley Park Shelter

INTRODUCTION

Located at Stolley Park at the northwest side of Spencer along the walking trail circling the City's municipal reservoir, the enclosed structure provides space for 30. This shelter does not have plumbing, heat/air, or electrical lighting.

Quick Facts

- 800 sq. ft.
- Constructed in 1989



SITE + GROUNDS

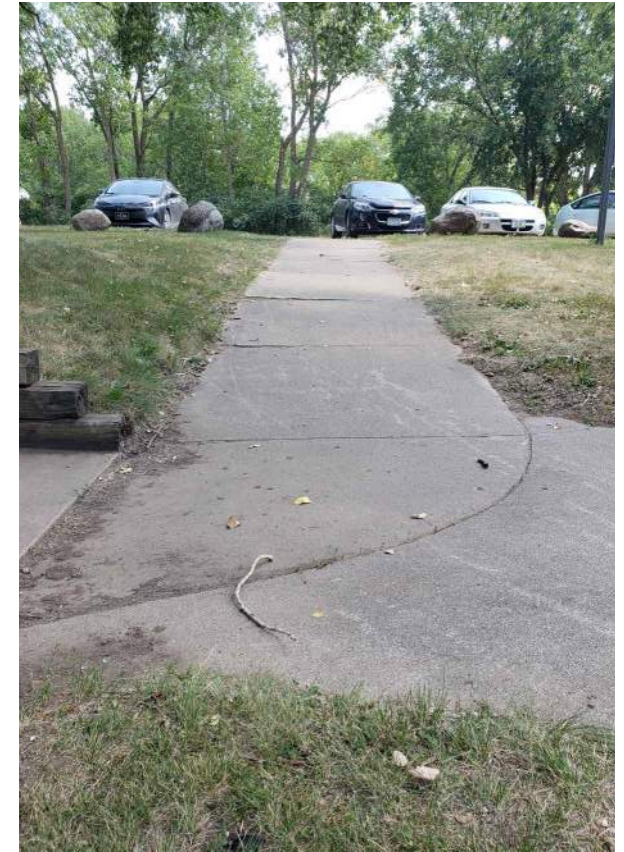
Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Drainage	Plaza	Poor	2	The concrete plaza area is in a low point with no stormwater outlet. Grills are rusting out.	Lower trail near southwest corner of plaza to provide stormwater outlet to pond. Remove grills.	\$10,000
Pedestrian Routes	Parking/Walks	Poor	1	There is no designated accessible parking. The concrete walks from the parking lot and trail exceeds the maximum allowable longitudinal slope and there are no landings at bottom or top for accessibility as required by ADA Standards.	Construct concrete parking area. Furnish and install striping and signage for accessible stalls. Remove and replace concrete walks to meet accessibility Standards.	<div>ADA</div> \$30,800



Drainage



Accessible Parking



Concrete Walk

ARCHITECTURAL + STRUCTURAL

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Exterior Roof	Roof	Poor	I	The roof is wood shakes. There are many damaged shakes. There is moss growing on the roof.	Replace the roof and roof sheeting.	\$10,700
Exterior Walls	Exterior Walls	Poor	I	The exterior wall wood logs are cracked and existing finish has worn off. There are damaged logs in front and back.	Replace damaged logs. Then prepare and finish entire building.	\$6,700



Roof



Roof



Exterior Wall

FACILITY COMMENTS FOR NEW CONSTRUCTION

Is the existing facility meeting the functional needs?	Can the existing facility be adjusted, corrected, or added on to in order to meet the functional needs?	Is replacement the right answer?	If YES to replacement... What location is recommended?	FINAL SOLUTION Scope of work	FINAL SOLUTION Approximate cost*	FINAL SOLUTION Schedule
Yes	Yes	No	N/A	Address deferred maintenance	\$59,410	See facility assessment priorities

*See appendix for further cost information.



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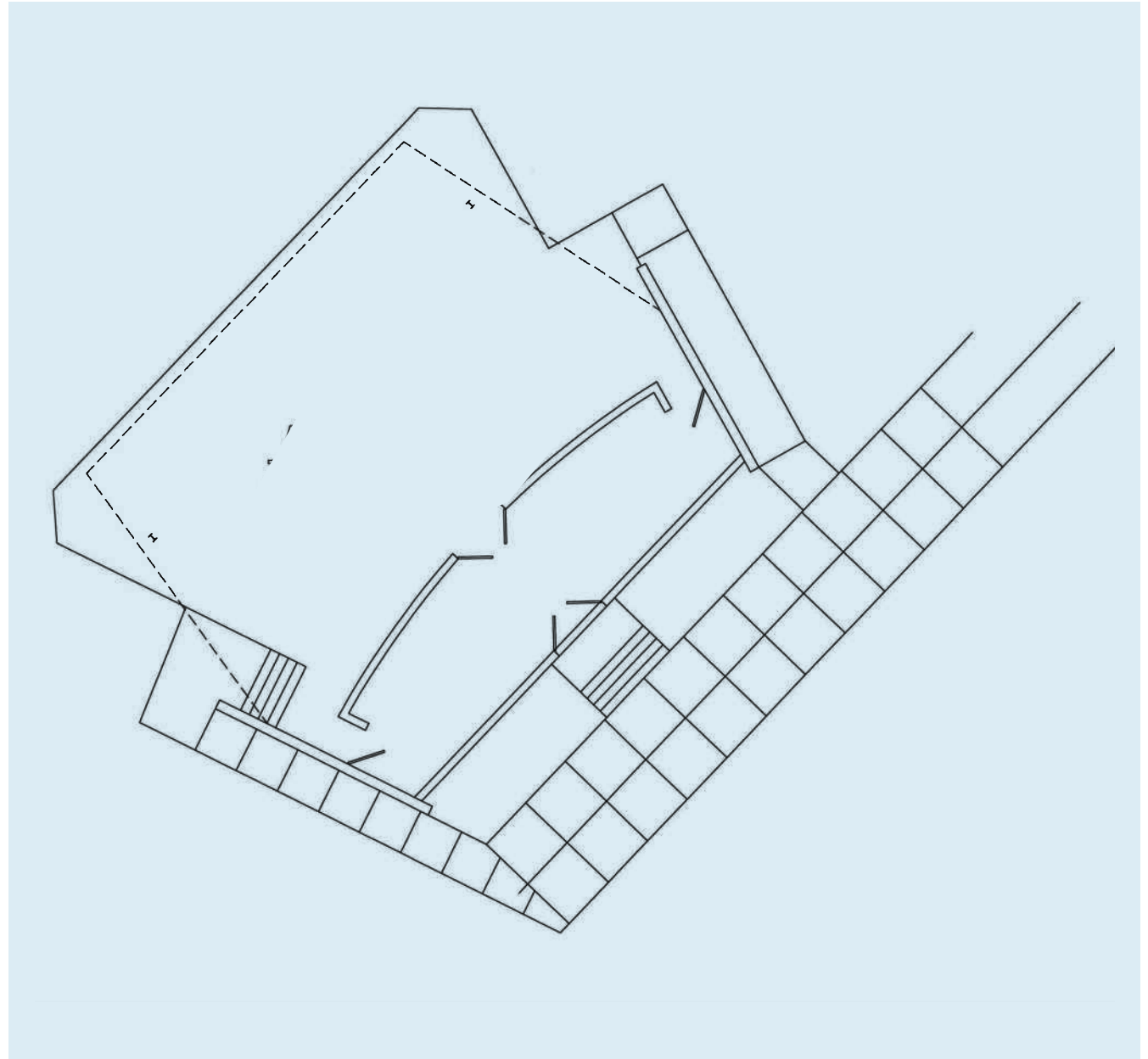
Band Shell

INTRODUCTION

The Band Shell is located at East Leach Park along the Little Sioux River in central Spencer, within the vicinity of the East Leach Shelter. The structure is used seasonally for local music and theater performances, church services, and other special events.

Quick Facts

- 2,000 sq. ft.
- Constructed in 1969



SITE + GROUNDS

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost	
Pedestrian Routes	Accessible Parking/ Seating Area	Poor	I	There is no designated accessible parking and seating.	Construct concrete pavement and signage for two accessible stalls and one access aisle. Construct concrete walk to an accessible seating area.	ADA	\$21,600
Pedestrian Routes	Accessible Stage Ramp	Poor	I	The accessible ramp to the stage exceeds the maximum allowable longitudinal slope for accessibility according to ADA Standards.	Remove and replace accessible ramp.	ADA	\$26,600
Exterior Doors	East Double Doors	Fair	I	The metal double-doors and frame on the east side are rusted.	Prep and repaint door frame. Replace double door and hardware.		\$5,000



Seating and Parking



Exterior Doors



Accessibility Ramp

FACILITY COMMENTS FOR NEW CONSTRUCTION

Is the existing facility meeting the functional needs?	Can the existing facility be adjusted, corrected, or added on to in order to meet the functional needs?	Is replacement the right answer?	If YES to replacement... What location is recommended?	FINAL SOLUTION Scope of work	FINAL SOLUTION Approximate cost*	FINAL SOLUTION Schedule
Yes	Yes	No	N/A	Address deferred maintenance	\$68,130	See facility assessment priorities

*See appendix for further cost information.



East Leach Shelter

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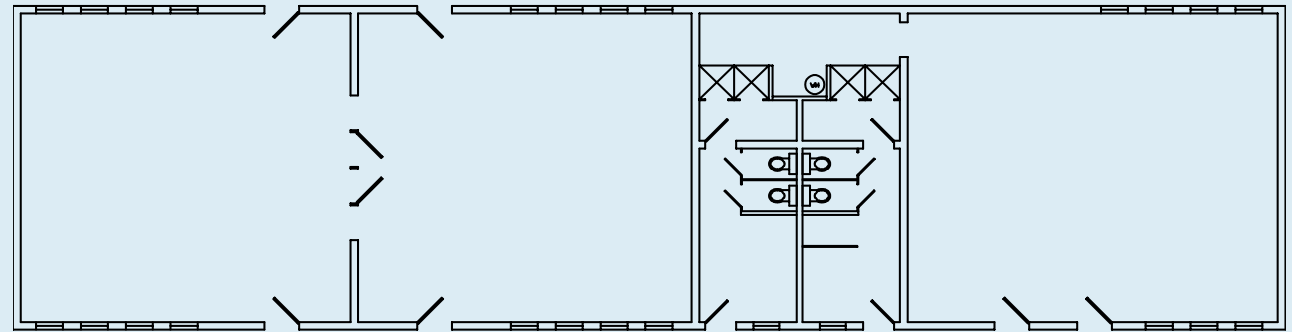
East Leach Shelter

INTRODUCTION

The East Leach Shelter is located at East Leach Park along the Little Sioux River in central of Spencer, adjacent to the Band Shell and near the trail system running along the Little Sioux River. This building includes restroom facilities for the park and a portion of the building can be rented for private events.

Quick Facts

- 3,450 sq. ft.
- Constructed in 1966



SITE + GROUNDS

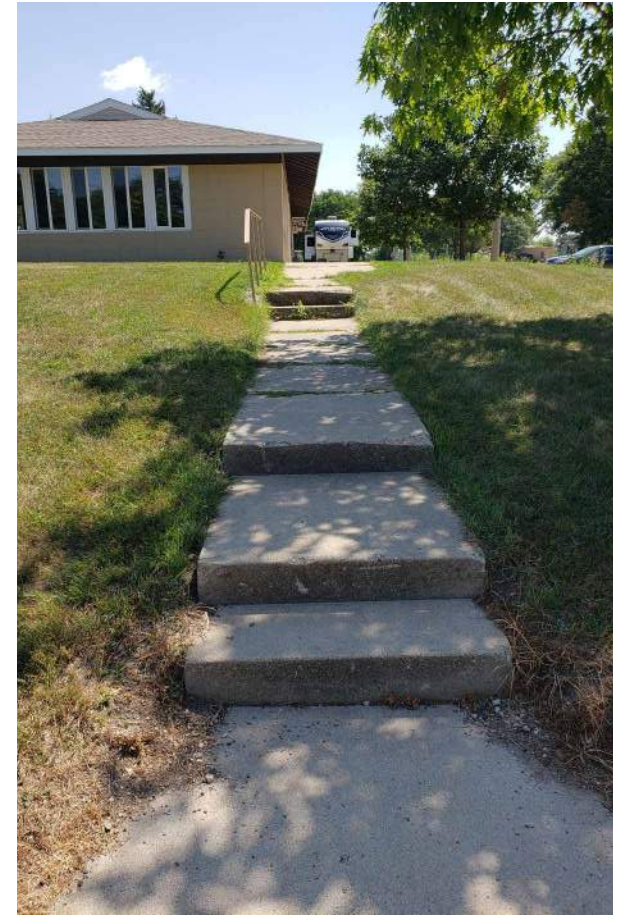
Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost	
Pedestrian Routes	Parking Lot	Poor	1	There is no designated accessible parking.	Construct concrete pavement and signage for two accessible stalls and one access aisle.	ADA	\$11,000
Pedestrian Routes	Concrete Walk	Fair	2	Concrete walk is cracking and settling.	Remove and replace concrete walk.		\$17,300
Pedestrian Routes	Exterior Stair	Poor	1	Concrete stairs are settling, pieces are breaking off, there is no railing at the bottom of the stairs, and the existing railing is falling over.	Remove and replace concrete stairs and handrail.		\$11,600



Accessible Parking



Concrete Walk



Exterior Stair

ARCHITECTURAL + STRUCTURAL

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Exterior Other	Soffits	Fair	2	The paint on the soffits is chipping and flaking off.	Prepare and repaint the soffits.	\$5,400
Interior Floors	Floors/Throughout	Fair	2	The concrete floors are painted. There is minor chips and missing paint throughout.	Prepare and repaint floors.	\$5,200
Interior Other	Accessibility/Restrooms	Poor	1	The men's and women's restrooms are not ADA-compliant due to space, clearance, and fixtures.	Remodel restrooms to meet ADA Standards.	\$135,000



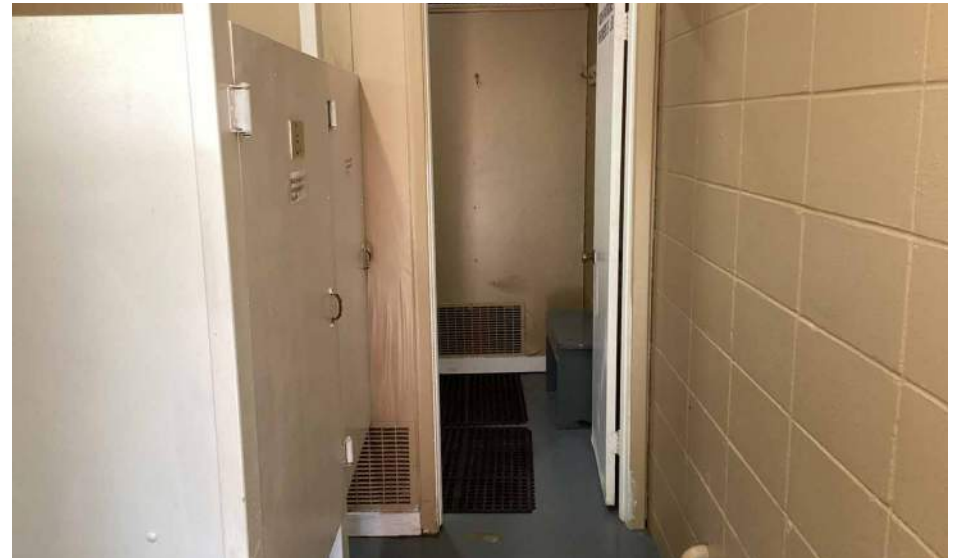
Soffit



Flooring



Restroom



Restroom

ELECTRICAL + TECHNOLOGY

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Power Supply	Main Panelboard/ Electrical Service	Poor	1	The 100 amp 240V single phase electrical service is undersized to accommodate the connected load.	Upsize electrical service to a minimum 200 amp and replace main panelboard.	\$7,400
Exterior Lighting	Security Light/Exterior	Poor	1	No security lighting around building other than parking area pole lights on south side.	Install eight or more wall packs to illuminate pathway around building.	\$7,400
Interior Lighting	Fixtures/Throughout	Fair	2	There are at least 20 light fixtures that are not LED.	Upgrade lights to LED type.	\$16,700
Life Safety	Egress Lighting	Poor	1	Emergency egress lighting was not observed.	Install emergency egress lighting.	<div>LIFE SAFETY</div> \$7,400



Panelboard

MECHANICAL + PLUMBING

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Heating Cooling	Unit Heater/Meeting Rooms/West	Fair	I	The area is served by two gas fired Modine brand unit heaters. The units have surpassed their useful service life.	Replace heating units.	\$9,400



Unit Heater



Unit Heater

FACILITY COMMENTS FOR NEW CONSTRUCTION

Is the existing facility meeting the functional needs?	Can the existing facility be adjusted, corrected, or added on to in order to meet the functional needs?	Is replacement the right answer?	If YES to replacement... What location is recommended?	FINAL SOLUTION Scope of work	FINAL SOLUTION Approximate cost*	FINAL SOLUTION Schedule
Yes	Yes	No	N/A	Address deferred maintenance	\$252,340	See facility assessment priorities

*See appendix for further cost information.



Appendix

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Facility Repairs Under \$5,000

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Facility Repairs Under \$5,000

The items on the following pages are for informational purposes and can be used for planning regular maintenance and repair budgets in the coming years.

As mentioned in the introduction, recommendations of Perform Regular Maintenance reflect items that are typically in good condition and do not require repairs or replacements for ten or more years. These items and systems will require regular maintenance to ensure they perform most effectively for their estimated useful life. Therefore, no cost is provided for the majority of these items; however, the City will need to budget for regular operating and maintenance funds to complete the tasks.

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Police Office Building

ARCHITECTURAL + STRUCTURAL

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Exterior Roof	Roof	Good	4	The roof is a ballasted ethylene propylene diene monomer (EPDM) synthetic rubber membrane that was installed in 2017. There is minor flashing damage on the west side of the building.	Perform regular maintenance.	\$0
Exterior Walls	Brick and EIFS	Good	3	Exterior wall sections are brick and others are exterior insulation finishing system (EIFS). Both are in good condition.	Perform regular maintenance.	\$0
Exterior Windows	Window Caulking	Poor	1	The exterior caulking has lost its flexibility and appears brittle.	Remove and replace window caulking.	\$2,100
Exterior Windows	Windows	Good	4	The windows are double-paned with aluminum frames.	Perform regular maintenance.	\$0
Exterior Doors	Main Entrance	Good	4	The main entrance door is aluminum with double-paned glass and aluminum frame. This door is access controlled.	Perform regular maintenance.	\$0
Exterior Doors	Rear Exit Door	Good	4	This metal door is painted with a metal frame, and is access controlled.	Perform regular maintenance.	\$0
Interior Ceiling	Ceilings/Throughout	Good	4	Ceiling sections are a combination of drywall and acoustical ceiling tile.	Perform regular maintenance.	\$0
Interior Walls	Wall Sections/Throughout	Good	3	Wall sections are a combination of drywall, painted concrete block, brick, and ceramic tile.	Perform regular maintenance.	\$0

ELECTRICAL + TECHNOLOGY

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Interior Doors	Doors/Throughout	Good	3	The office doors are wood with wood frames. Restroom doors are wood with steel frames. The conference room is glass with aluminum frame.	Perform regular maintenance.	\$0
Power Supply	Electrical Service	Fair	2	Service size and source location is unknown.	Evaluate size and building load to verify adequate size.	\$400
Other Electrical	Electrical/Mechanical Room	Poor	1	Items stored in front of electrical panel are in violation of NFPA 70 code.	Remove items stored in front of electrical panel.	\$0
Power Supply	Main Service Disconnect	Poor	1	Main service disconnect appears to be original to building and operation is suspect due to age.	Replace main service disconnect. Coordinate with service size evaluation, and distribution improvements.	\$4,000

MECHANICAL + PLUMBING

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Power Supply	Contactors Panels/ Electrical Room	Poor	2	Two contactor panels, possibly for lighting, were observed in the electrical room. Unknown if they are still in service.	Eliminate contactor panels and re-wire lighting as required. This will free space for recommended electrical distribution changes.	\$2,100
Other Electrical	Electrical Room	Poor	3	There are unused meter sockets.	Remove unused meter sockets.	\$800
Other Mechanical	Ductwork/ Throughout Building	Fair	3	Most duct work present is flex duct. Areas have sharp direction changes, hangers squeeze duct to constrict airflow, and the insulation is loose.	Install hard duct turns at direction changes and flex duct for straight runs. Seal insulation that appears to have been cut. Adjust hangers to reduce constriction.	\$4,000
Heating Cooling	Offices with Windows	Fair	3	Informed on site that offices get hot, most likely due to solar heat gain from windows. Air flow into offices is assumed to be evenly distributed.	Adjust airflow or move diffusers closer to outside wall and over windows.	\$4,000
Other Plumbing	Water Heater/Electrical Room/Janitors Closet	Fair	3	A Rheem brand electric water heater is present.	Perform regular maintenance.	\$0
Other Plumbing	Water Heater/ Mechanical Room	Fair	2	The Richmond brand water heater is nearing the end of its useful lifespan.	Perform regular maintenance.	\$0
Other Mechanical	Mechanical Closet/Near Conference Room	Poor	1	Water damage is apparent on floor below units 17 and 18.	Install a drain pan and ensure condensate drains are clear.	\$940
Heating Cooling	Air Handling Unit 22/ Storage Locker	Good	3	Unit 22 serves the west offices and is 15 years-old.	Perform regular maintenance.	\$0
Other Plumbing	Restrooms	Poor	1	The floor cleanout has the wrong cap installed which is a tripping hazard.	Replace cap with one that is flush with floor.	\$340
Heating Cooling	Heater/Storage Room Southeast	Fair	3	An electric floor heater is present with no visible damage.	Perform regular maintenance.	\$0
Heating Cooling	Thermostat/West Storage Room	Poor	3	The thermostat appears to not be in use and has received impact damage.	Remove wall mounted thermostat.	\$170

MECHANICAL + PLUMBING

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Heating Cooling	Heat Recover Ventilator/ Mechanical Room	Fair	2	A LifeBreath heat recovery ventilator (HRV) has a manufacturing date of 2007.	Replace HRV.	\$2,600
Heating Cooling	Unit 21/Mechanical Room	Fair	3	Unit 21 serves the west offices and is 15 years-old. Performing regular maintenance should include cutting back bushes and cleaning coils.	Perform regular maintenance.	\$0
Heating Cooling	AHU/Mechanical Room	Fair	3	Unit 19 serves the west offices and is 15 years-old. Performing regular maintenance should include cutting back bushes and cleaning coils.	Perform regular maintenance.	\$0
Heating Cooling	AHU/Mechanical Room	Fair	3	Unit 20 serves the west offices and is 15 years-old. Performing regular maintenance should include cutting back bushes and cleaning coils.	Perform regular maintenance.	\$0
Heating Cooling	AHU/Mechanical Closet Near Conference Room	Fair	3	Unit 18 serves west offices and is 15 years-old.	Perform regular maintenance.	\$0
Heating Cooling	AHU/Mechanical Closet/ Near Conference Room	Fair	3	Unit 17 serves the west offices and is 15 years-old.	Perform regular maintenance.	\$0
Heating Cooling	Men's Restroom	Poor	2	Return air duct is too low to the ground with no protection from cleaning or traffic.	Install splash guard to protect duct from cleaning chemicals.	\$500
Heating Cooling	Wall Heater/Women's Restroom	Fair	2	The age of the electric wall heater is unknown.	Perform regular maintenance.	\$0

Police Communications Center

ARCHITECTURAL + STRUCTURAL

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Exterior Roof	Lower Roof	Fair	3	The lower roof is an asphalt built-up roof system. This roof was not accessible during the assessment. The roof was viewed from a higher elevation. The age is unknown. The average useful life is 25-30 years.	Perform regular maintenance.	\$0
Exterior Roof	Middle Sections	Fair	3	The middle sections of roof are standing seam metal (three sections). The roof is drained by gutters and downspouts.	Perform regular maintenance.	\$0
Exterior Walls	Exterior Wall	Fair	1	Cracks are apparent in exterior concrete wall. The cracks likely have been present for several years and do not pose any immediate risks, but left unaddressed could become a larger issues that would require reconstruction of a portion of the wall.	Repair the cracks to reduce further deterioration of the wall.	\$0
Exterior Walls	West Exterior Wall	Fair	2	A vertical crack is apparent in the brick of the west exterior wall. The crack is partially hidden behind a conduit. It appears this crack likely has been present for several years, and no immediate or short-term safety concerns exist. If left unaddressed, it could become a larger maintenance issue due to freeze/thaw effects of any moisture that enters the crack.	Repair the cracked bricks and mitigate future issues by installing a new control joint in this location.	\$0
Exterior Walls	Metal Walls	Fair	3	The exterior walls of the building are made up of vertical metal panels, brick, concrete, and metal panels with a coating containing asbestos. The asbestos containing product may remain in place until planned renovation or damage occurs. At that time, a licensed abatement contractor would have to remove.	Perform regular maintenance.	\$0
Exterior Walls	Lower Precast Concrete Walls	Poor	1	The sealant on the precast concrete walls is cracking and lost flexibility.	Remove and replace sealant.	\$3,100

ARCHITECTURAL + STRUCTURAL

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Exterior Windows	South Windows	Fair	4	The south portion of the building has updated windows with double-paned glass and aluminum frames.	Perform regular maintenance.	\$0
Exterior Doors	Overhead Doors	Fair	1	There are four overhead doors in the building. One of the doors is green fiberglass. This door has damage but appears functional. The other three doors are in good condition.	Replace fiberglass door and perform regular maintenance on others.	\$3,400
Exterior Doors	Doors/Throughout	Fair	1	There are four exterior doors. They are all metal doors with metal frames. The two sets of double doors on the north side of the building appear not to be functional.	At minimum, a sign should be posted stating doors are not an exit.	\$0
Interior Ceiling	Ceilings/Throughout	Fair	3	The ceilings are a combination of drywall and acoustical tiles throughout. Other areas of the building have exposed ceilings to roof or upper floor.	Perform regular maintenance.	\$0
Interior Walls	Walls/Throughout	Fair	3	The walls in the 911 call center and evidence areas are a combination of drywall and wall panels. In the vehicle storage areas, the walls are brick, CMU, and metal. No damage was observed.	Perform regular maintenance.	\$0
Interior Doors	Door Hardware	Poor	1	Doors in the 911 call center and evidence area have knob style handles that aren't ADA compliant.	Replace door hardware.	\$3,400

ELECTRICAL + TECHNOLOGY

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Exterior Lighting	Lighting Controls	Fair	2	Exterior lighting control was not observed.	Install central photo eye and astronomical time clock for control of existing and proposed exterior lighting.	\$2,600
Exterior Lighting	Exterior Light Fixtures	Fair	2	Two lights on north side and three lights on west side are not LED.	Upgrade lights to LED type.	\$3,900

MECHANICAL + PLUMBING

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Heating Cooling	Furnace/Mechanical Closet	Good	3	The Coleman brand forced air furnace was manufactured in 2016. The condenser unit is in the basement.	Perform regular maintenance.	\$0
Heating Cooling	Electric Unit Heaters/Garage	Poor	2	Garage electric unit heaters are of an unknown age.	Clean unit heaters and check for age. Ensure heating elements are in proper condition.	\$3,400
Heating Cooling	Electric Unit Heaters/Garage	Poor	3	Garage electric unit heaters are of an unknown age.	Clean unit heaters and check for age. Ensure heating elements are in proper condition.	\$3,400
Heating Cooling	North Exterior Wall	Fair	2	A small window unit serves the space. Unable to find information on unit, although it appears to be in fairly new condition. Serves large area. Not sized for area.	Perform regular maintenance.	\$0
Heating Cooling	East Exterior Wall	Fair	2	The Rheem brand condenser unit was manufactured in 2013 and are midway through its useful life.	Perform regular maintenance.	\$0
Heating Cooling	Power Roof Ventilator (PRV)/Roof Top	Good	3	The power roof ventilator is not operable and appears to have been abandoned. Since it is being used as part of the roof, it is necessary to ensure no water is getting in at the seams.	Inspect for leaks and seal if necessary.	\$3,000
Heating Cooling	Mini-Split Server Room/Basement	Good	3	A condenser in the basement, and the south fan coil in server room serve the space and was manufactured in 2015.	Perform regular maintenance.	\$0
Heating Cooling	Condenser/Exterior North Wall	Fair	1	The Liebert brand condenser serves unit 1, and was manufactured in 2007. The piping is missing insulation.	Replace missing and worn insulation on piping.	\$1,000

MECHANICAL + PLUMBING

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Heating Cooling	Evidence Room	Poor	1	Airflow is restricted from evidence holding areas to return grilles to HVAC unit. Grilles located in hallway. No transfer or return grilles in evidence rooms.	Install transfer grilles or hard ducted returns to evidence room to allow air flow	\$1,400
Heating Cooling	Mechanical Pump Area	Fair	3	Date of pumps are unknown. Pump motors look to have been replaced in the past. Insulation missing from pump body.	Replace missing insulation. Repair existing insulation.	\$1,000
Plumbing Water	Water Heater/Basement	Good	3	Rheem brand. Electric water heater was manufactured in 2020. Unit is fairly new and well within expected life.	Perform regular maintenance.	\$0
Heating Cooling	Furnace/Laundry/ Water Room	Fair	2	The Rheem brand forced air furnace was manufactured in 2013. The assessment team at the site visit noticed the filter was not installed correctly and is missing the filter cover. The furnace is midway through its useful life expectancy.	Install filter door for a more efficient system.	\$670
Restrooms	Toilet/Restroom	Poor	1	ADA toilet installed with flush handle on wall side.	Install water tank with flush handle on the approach side of toilet.	\$800
Plumbing Water	Water Heater/Laundry/ water Room	Poor	1	The Rheem brand electric water heater was manufactured in 2000 and has surpassed its useful service life.	Replace the water heater.	\$1,500
Heating Cooling	Diffuser/Restroom	Poor	1	Dirt around supply diffuser. Inspect unit serving space for leaks and filter quality.	Conduct unit maintenance on furnace serving space. Clean diffuser and ceiling.	\$670
Heating Cooling	Condenser/Basement	Fair	3	Unit 24 is a Fujitsu brand condenser.	Perform regular maintenance.	\$0
Heating Cooling	Condenser/Basement	Fair	3	Unit 25 is a Fujitsu brand condenser.	Perform regular maintenance.	\$0

ADA

Public Library Building + Site

ARCHITECTURAL + STRUCTURAL

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Exterior Roof	EPDM Roof	Poor	I	The low slope section of the roof is a ballasted EPDM system. The age of the roof is unknown. According to City staff, EPDM membrane sections are scheduled for replacement.	Replace EPDM roof sections. Currently scheduled for replacement.	\$0
Exterior Roof	Standing Seam Metal Roof	Fair	I	There is a section of standing seam metal roof on the building addition. Staff report leaks in this area. There are areas where the metal separated, some of the roofing screws were replaced, and additional sealants were applied.	Repair areas that have separated and tighten roof screws where applicable.	\$2,000
Exterior Walls	Exterior Walls	Good	3	The majority of the building exterior walls are concrete. Minor staining was observed.	Perform regular maintenance.	\$0
Exterior Walls	Wood Siding	Poor	I	Portions of the building are wood sided. The section adjacent to the parking lot has flaking paint and is absorbing water. The alley section appears to be unfinished.	Prepare and refinish the wood siding on the parking lot side of the building. Apply a finish to the alley section of the building to extend the life of the siding material.	\$3,200
Exterior Windows	Building Addition Windows	Good	4	The windows in the addition are double-paned with aluminum frames.	Perform regular maintenance.	\$0
Exterior Doors	Main Entrance	Good	4	The main entrance has aluminum doors and frames with double-paned glass.	Perform regular maintenance.	\$0
Exterior Doors	Exit Doors	Fair	I	There are two exit doors at the alley that are metal with metal frames. One of the doors and frame is rusted. The other appears to be newer and in good condition.	Replace the rusted door and frame.	\$5,000
Interior Ceiling	ACT/Concrete Ceilings/ Throughout	Good	I	The ceiling is a combination of acoustical ceiling tiles and concrete support beams.	Replace stained ceiling tiles after roofing project has been completed.	\$500

ARCHITECTURAL + STRUCTURAL

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Interior Doors	Door Hardware/ Throughout	Poor	1	There are several doors with knob-style handles, which are not ADA-compliant.	Replace door fixtures with lever style door handles.	\$3,400
Interior Floors	Carpet/LVP/Flooring	Fair	3	The majority of the building has carpet tiles that were installed in the last five years. The staff room has luxury vinyl plank (LVP) that was installed in the last five years.	Perform regular maintenance.	\$0
Interior Floors	Restroom Floors	Good	4	The restroom floors are ceramic floor systems. They appear to be in good condition.	Perform regular maintenance.	\$0

ELECTRICAL + TECHNOLOGY

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Power Supply	Electrical Service	Fair	3	Service size appears to be adequate for building use.	Perform regular maintenance.	\$0
Exterior Lighting	Light Fixtures	Fair	2	Existing north entrance wall pack.	Upgrade light to LED type.	\$800
Interior Lighting	Lights/Electrical Room	Poor	I	An issue of lights flashing on/off in public areas was reported during the site visit. It may be caused by dimmer connection to LED lights.	Examine any light controls and ensure compatibility with LED type lights.	\$800
Interior Lighting	Lighting Controls	Fair	I	Light switches in public areas are at risk of tampering.	Eliminate light switches in public areas where feasible or replace with tamper resistant switches.	\$1,400
Interior Lighting	Light Fixture Covers	Poor	I	Several light fixtures in public spaces are missing covers.	Replace covers.	\$270
Life Safety	Drinking Fountain Receptacle	Poor	I	Receptacle is not GFCI type.	Replace receptacle with GFCI type, or replace circuit breaker with GFCI type.	\$340
Other Electrical	Receptacle/Soda Machine	Poor	I	Receptacle is missing weatherproof cover and is not GFCI type.	Replace receptacle with GFCI type and install new cover.	\$340
Other Electrical	Materials Storage/ Electrical Room	Poor	I	Items stored in front of electrical panel are in violation of NFPA 70 code.	Remove items stored in front of electrical panel.	\$0
Other Electrical	In-floor Receptacle Boxes/Fireplace Area	Poor	I	In-floor receptacle boxes are loose and missing covers.	Secure boxes and replace covers.	\$640
Other Electrical	Receptacles/ North Exterior	Poor	I	Receptacle not GFCI type.	Replace receptacle with GFCI type and install new cover.	\$340

MECHANICAL + PLUMBING

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Heating Cooling	Variable Speed Drive	Good	3	The ABB brand variable speed drive is halfway through its expected useful life.	Perform regular maintenance.	\$0
Heating Cooling	Condensate Drain/Above Conference Room Ceiling	Poor	1	Condensate drain location interferes with air filter replacement.	Reroute the condensate drain to be clear of the filter door.	\$340
Plumbing Water	Water Heater/Janitors Closet	Fair	2	The Rheem brand water heater is approaching the end of its expected useful life.	Replace water heater.	\$1,500
Plumbing Water	Electrical Room/Janitors Closet	Fair	2	The water heater is approaching the end of its expected useful life.	Replace water heater.	\$1,500
Other Plumbing	Electrical Room/Janitors Closet	Poor	1	Boxes and materials are stored over the drain and are in the path of potential water.	Remove boxes from drain area.	\$340
Plumbing Water	Water Heater/Under Sink/Conference Room	Good	3	A Bosch brand instantaneous electric water heater was installed in 2016.	Perform regular maintenance.	\$0
Heating Cooling	Louver/Storage Room	Poor	1	Staff informed assessment team that the louver, when open, will freeze the adjacent door resulting in no barrier between inside and outside.	Attach a duct to louver with a 90° bend. Preform load calculation for sizing electric unit heater.	\$2,000
Heating Cooling	Unit Heater/Storage Room	Fair	2	The unit heater is halfway through its expected useful life, and may be undersized for the space. Preform load calculations and ensure proper heater size.	Replace heater.	\$2,000
Other Mechanical	Building Management System/Near Main Restrooms	Poor	1	The American Auto-Matrix brand building management system was not operating during the site visit.	Perform regular maintenance.	\$0
Plumbing Water	Old Restroom Now Storage/Electrical Room	Poor	1	A sewer gas smell is present, most likely from floor drain trap going dry.	Once a month or more pour a half a gallon of water down drain to ensure trap remains full.	\$0

MECHANICAL + PLUMBING

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Heating Cooling	Pump/Penthouse Mechanical Room	Fair	1	Belle and Gossett brand boiler pumps are installed and are at the end of their useful service life.	Replace boiler pumps.	\$1,600
Heating Cooling	Building Pump/Penthouse Mechanical Room	Good	3	A Bell and Gossett brand building pump is installed.	Perform regular maintenance.	\$0
Heating Cooling	Air Handling Units/Penthouse Mechanical Room	Fair	2	Air handling units (AHUs) are in operation. During site visit local contractor on site working on one of the units.	Perform regular maintenance.	\$0
Heating Cooling	Unit Heaters/Office Rooms + Open Office Area	Fair	2	Units are operational and have exceeded their expected useful service life.	Clean coils and check unit ventilator filaments for any signs of breaks.	\$2,000
Other Mechanical	Air Handling Unit/Janitors Closet	Poor	1	Haws brand drinking fountain condensing unit is dirty with visible corrosion.	Replace unit.	\$3,000
Other Mechanical	Powered Exhaust Fan/Penthouse	Good	3	Rooftop unit (RTU) powered exhaust fan in working order. Exhaust stack for boiler shows signs of corrosion.	Inspect corrosion of stack for holes or deterioration.	\$2,000
Other Mechanical	Powered Roof Ventilator (PRV)/Rooftop	Fair	2	The age of the rooftop PRV is unknown. Nomenclature is illegible.	Inspect fan for correct operation. Remove lid to pull data from motor.	\$340

Public Works Street Division Storage

SITE + CIVIL

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Drainage	Northeast Entrance	Poor	2	Northeast corner of the property has drainage issues and experiences standing water.	No solution determined at this time.	\$0

ELECTRICAL + TECHNOLOGY

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Power Supply	Electrical Service	Fair	3	Service size appears to be adequate for building use.	Perform regular maintenance.	\$0
Exterior Lighting	Security Lighting	Poor	1	No security lighting was observed outside entrances.	Install wall packs above both overhead doors.	\$3,400
Other Electrical	Panelboard Switch	Poor	1	Panelboard has switch and plug for standby power connection which appears to be unused. Appears plug could become energized and thus a shock hazard if switch is operated.	Remove switch and plug.	\$130
Other Electrical	Panelboard	Fair	2	Panelboard is corroded.	Replace panelboard.	\$2,700

Public Works Street Division Central Garage

ARCHITECTURAL + STRUCTURAL

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Exterior Doors	Overhead Doors	Fair	3	There are six electric overhead doors. All appear to be in working order.	Perform regular maintenance.	\$0
Interior Ceiling	Roof Joists/Southwest	Fair	1	In at least one location near the southwest corner of the building, the x-bridging present in the bar joists supporting the roof appears to have been modified and is no longer properly attached. This bridging is needed to properly resist loads during significant wind events, but the x-bridging in its current condition is not a concern for everyday performance. Replacing the modified x-bridging will allow the roof to better achieve the intended design capacity to resist loads during wind events.	Replace the modified x-bridging.	\$0
Interior Ceiling	Ceilings	Fair	4	The ceilings in the offices, breakroom, and restrooms is drywall. No damage or staining was observed. The remaining ceilings are exposed roof deck.	Perform regular maintenance.	\$0
Interior Walls	Interior Wall Panels	Poor	4	Some insulated metal panels (IMP) are visibly damaged, presumably from impact from a truck. The damaged panels are not supporting any vertical loads, so the risk to occupants is minimal, if any. This is primarily an aesthetic issue.	Replace the damaged IMP.	\$0
Interior Walls	Walls	Fair	3	The interior walls are a combination of painted concrete masonry units (CMU) or pre cast concrete. No major damage was observed.	Perform regular maintenance.	\$0
Interior Walls	Wash Bay Curtain	Poor	1	The wash bay curtain is discolored and damaged. It has reached its end of useful life.	Replace the curtain.	\$4,400

ELECTRICAL + TECHNOLOGY

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Power Supply	Electrical service	Fair		Service size appears to be adequate for building use.	Perform regular maintenance.	\$0
Exterior Lighting	Exterior Lighting	Fair	3	One light east side, two lights west side, and two lights north side are not LED.	Upgrade lights to LED type.	\$4,700
Other Electrical	Standby Power Panel	Poor	I	Existing red standby power panel appears to be unused and obsolete. Cord plug is connected and may be a shock hazard.	Remove cord plug and standby power panel.	\$1,100
Other Electrical	Conductors/ Electrical Room	Poor	I	Exposed conductors are hanging out near panel C.	Remove exposed conductors and cap conduit near panel C.	\$200
Other Electrical	Building	Poor	I	Items stored in front of electrical panels are in violation of NFPA 70 code.	Remove items stored in front of electrical panels.	\$0

MECHANICAL + PLUMBING

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Other Plumbing	Mechanical Loft	Poor	1	The Electric State brand water heater was manufactured in 2011, and is approaching the end of its useful service life. Corrosion is visible on the tank and water connections.	Replace water connections and water heater.	\$1,500
Heating Cooling	Garage Floor	Fair	2	The radiant tube heaters are of an unknown age. On site personal indicated that they have no issues with heaters currently.	Perform regular maintenance and log manufacture date.	\$3,400
Heating Cooling	Main Office	Fair	2	The Fujitsu Minisplit brand heat pump was manufactured in 2017.	Perform regular maintenance.	\$0
Heating Cooling	Supply Diffusers/ Restroom/Main Office	Poor	1	Supply diffusers show large amount of dust and dirt. Return opening in room that can freely pull air from garage. This design is not allowed by code.	Check the system for the source of dirt and dust. Redesign duct layout to prevent garage exhaust from entering system.	\$2,000
Heating Cooling	Exhaust Fan/ Welding Room	Poor	1	An exhaust fan is of an unknown size and age serves the space. From visible inspection, the unit appears to be undersized for the room size and room activity.	Increase exhaust fan size to removed hazardous fumes from the welding area.	\$3,800
Heating Cooling	Auxiliary Garage	Fair	3	Assessment team was informed on site that the fans for the solar heat system are not in operation.	Provide service for controls and roof mounted fans.	\$3,400
Heating Cooling	Exhaust/Auxiliary Garage/Main Garage	Fair	2	Fans of an unknown age are used to transfer warm air from the main garage to the auxiliary garage.	Inspect fans for proper maintenance.	\$1,400
Heating Cooling	Chemical Storage	Poor	1	There is a chemical smell from cabinets. A passive fume piping system is installed.	Install small fan on exhaust piping to provide active flow to direct fumes outside.	\$1,600

MECHANICAL + PLUMBING

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Heating Cooling	Emergency Shower/ Restroom	Poor	1	No testing information was located for the emergency shower.	Test the emergency shower, internally and by a third party, to ensure proper operation and log information.	\$460
Heating Cooling	High Pressure Washer/ Wash Area	Poor	2	The Hotsy brand high pressure washer has metal parts and exhaust stacks with corrosion.	Check corrosion for metal fatigue. Replace parts if necessary.	\$870
Heating Cooling	Paint Booth	Poor	1	Filters are not installed correctly or have been damaged.	Replace filters to ensure exhaust openings are fully covered.	\$470
Heating Cooling	Northwest Room/Signage	Poor	1	The area is served by a Ruud brand heater and is located at end of the supply duct. During the walk through, the assessment team was informed that the room gets cold in winter.	Install a small unit heater to provide additional heat.	\$3,800
Other Plumbing	Emergency Eye Wash Station/Near Break Room	Good	3	The emergency eye wash station had protective caps and inspection tags.	Perform regular maintenance.	\$0

Public Works Solid Waste Division Shop

ARCHITECTURAL + STRUCTURAL

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Exterior Doors	Exterior Doors	Good	4	There are two exterior metal doors with metal frames. Doors appear to have been replaced within the last five years.	Perform regular maintenance.	\$0
Interior Ceiling	Ceilings/Throughout	Fair	4	Ceilings are open to the insulated roof deck.	Perform regular maintenance.	\$0
Interior Ceiling	Offices/Storage	Fair	4	The ceilings are drywall with an acoustical texture applied to them. No staining or damage was observed.	Perform regular maintenance.	\$0
Interior Walls	Interior CMU Walls	Fair	2	Some stair step cracks are visible in the concrete masonry unit (CMU) interior walls. These cracks typically indicate settlement, but the issue appears to be minor and not likely to worsen significantly. It is primarily an aesthetic issue that could be fixed to improve the long-term function of the building.	Repair the wall by repointing the stair step cracks.	\$0
Interior Walls	Offices/Storage/Appliance De-manufacturing	Fair	3	Walls are a combination of metal paneling and drywall in the offices and restroom.	Perform regular maintenance.	\$0
Interior Floors	Restrooms/Offices	Poor	1	Flooring is vinyl composite tile (VCT). There are stains and heavy-wear throughout.	Replace VCT flooring.	\$4,000
Interior Other	Mezzanine	Poor	1	The railing on the mezzanine is missing the mid-rail. In addition, there is no load rating for storage.	Install mid-rail. A structural analysis should be completed to measure mezzanine load rating if items will be stored.	\$500
Exterior Lighting	Exterior Lighting	Fair	2	Exterior lighting fixtures are not LED.	Upgrade two lights on south side of building to LED type.	\$1,800
Life Safety	Wiring/Warehouse	Poor	1	There is exposed wiring near the panelboard.	Remove or protect exposed wiring.	\$800

ELECTRICAL + TECHNOLOGY

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Life Safety	Receptacles/Eye Wash Station	Poor	I	Receptacle near emergency eye wash station is not GFCI protected.	Replace receptacle with GFCI type and install a weatherproof in use cover.	\$340
Other Electrical	Electrical Panels/Warehouse	Poor	I	Items stored in front of electrical panels and fire pull station violate the NFPA 70 code.	Remove items stored in front of electrical panel and fire pull station.	\$0
Other Electrical	Conductor	Poor	I	What appears to be a grounding electrode conductor was installed incorrectly through conduit body and is unprotected from damage.	Reroute conductor in dedicated conduit or cut concrete and install new ground rods and grounding electrode conductor in dedicated conduit. Replace conduit body cover.	\$2,800
Other Electrical	Box Covers/Warehouse	Poor	2	Box covers are damaged.	Replace two box covers.	\$130
Other Electrical	Panelboard/Warehouse	Poor	I	The 240V panelboard is not readily accessible violating NFPA 70 code due to installed height.	Replace and relocate panel to provide readily accessible access.	\$3,400
Other Electrical	Shop	Poor	I	Items stored in front of electrical panel violating NFPA 70 code.	Remove items stored in front of electrical panel.	\$0

MECHANICAL + PLUMBING

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Plumbing Water	Sanitary Trap/ East Loft Area	Fair	2	The sanitary trap is unused.	Implement a schedule to keep trap filled with water to prevent sewer gas from entering building, or place a PVC cap or plug on inlet.	\$170
Other Plumbing	Pump/Behind Building	Fair	1	The pump is three years old and the concrete lid is broken.	Replace the pump lid.	\$1,600
Other Mechanical	Ventilation Fan/ Welding Area	Poor	1	The ventilation fan appears to be undersized for the area it is serving and doesn't meet code for a maintenance garage and welding shop.	Install a new ventilation system.	\$3,800
Plumbing Water	Electric Water Heater/East Loft	Good	3	A Rheem brand electric water heater is served by uninsulated water lines.	Insulate water lines.	\$670
Other Mechanical	Refrigerant storage/ East Storage	Fair	2	Refrigerant storage area.	Conduct a code review for fire safety of the storage area.	\$240
Heating Cooling	Window A/C Unit/East	Fair	3	A window A/C unit is serving the space.	Perform regular maintenance.	\$0
Other Plumbing	Emergency Shower/East	Poor	1	There was no safety test schedule found for the emergency shower. Sewer gas smell most likely due from a dry drain. Regular cleaning of area is needed to ensure water goes to drain to fill trap. Test emergency equipment.	Clean area and test emergency equipment regularly.	\$0
Heating Cooling	Electric Heater/East	Poor	2	The area is served by a baseboard electric heater.	Replace electric heater.	\$670
Heating Cooling	Gas-Fired Tube Heater/East	Fair	2	The area is served by a gas fired tube heater. On site personnel indicated no issues.	Perform regular maintenance.	\$0
Heating Cooling	Heater/Breakroom/East	Fair	2	The area is served by a electric wall heater. Due to unknown service records and age, a service call is necessary to collect this information for records.	Service the unit, locate age, and maintenance log.	\$170

Public Works Landfill Division Shop

ARCHITECTURAL + STRUCTURAL

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Exterior Roof	Roof	Fair	3	The roof is a sloped corrugated metal that drains to gutters on the north and south sides. It is original to the 2002 construction of the building.	Perform regular maintenance.	\$0
Exterior Walls	Walls	Fair	3	The exterior walls are vertical metal panels. There is minor damage at the overhead doors.	Perform regular maintenance.	\$0
Exterior Windows	Windows	Fair	4	The windows are vinyl slider style with wood frames.	Perform regular maintenance.	\$0
Exterior Doors	Overhead Doors	Fair	1	There are three electric overhead doors. Staff report having issues with freezing pipes due to doors facing north and not sealing well.	Replace door seals.	\$1,600
Exterior Doors	Entry Doors	Fair	3	The exterior doors are metal with metal frames.	Perform regular maintenance.	\$0
Interior Ceiling	Offices/Restroom	Fair	4	The ceilings are drywall with an acoustical texture applied to them. No staining or damage was observed.	Perform regular maintenance.	\$0
Interior Walls	Offices/Restroom	Fair	3	Walls are a combination of drywall in the offices and breakroom and plastic wall paneling in the restroom.	Perform regular maintenance.	\$0
Interior Floors	Interior Mezzanine	Fair	4	The mezzanine framing above the offices in the shop appears to be performing adequately. The mezzanine has a load rating of 50 pounds per square foot (psf), and it appears the material currently stored on the mezzanine is within this maximum load rating. It is worth noting this load rating is considerably less than the 125 psf usually used in current design for storage mezzanines, so care should be taken to ensure the posted load rating is not exceeded.	No action required beyond educating staff that care should be taken when storing heavy materials on the mezzanine.	\$0
Interior Floors	Offices/Restroom	Fair	1	Flooring in these areas is vinyl composite tile (VCT). There are stains and heavy wear throughout.	Replace VCT flooring.	\$4,200

ELECTRICAL + TECHNOLOGY

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Power Supply	Electrical Service	Fair	3	Service size appears to be adequate for building use.	Perform regular maintenance.	\$0
Exterior Lighting	Lighting/Exterior	Poor	2	Poor lighting on north side of building.	Install wall packs to north side of building exterior.	\$3,200
Exterior Lighting	Light Fixtures	Fair	2	There are two wall packs and two yard lights on south side that are not LED.	Upgrade lights to LED type.	\$1,900
Interior Lighting	Light Levels/Shop	Poor	1	Light level is too low.	Install three or more additional lights.	\$3,800
Life Safety	Emergency Egress Lighting	Poor	1	Emergency egress lighting was not observed.	Install emergency egress lighting.	\$4,700
Other Electrical	Receptacle/Building Exterior	Poor	1	Receptacle has a damaged cover and is exposed to elements.	Replaced damaged cover.	\$300
Other Electrical	Receptacles/Exterior	Poor	1	Four exterior receptacles are not GFCI type.	Replace receptacles with GFCI type.	\$670
Other Electrical	Electrical Panel/ Electrical Room	Poor	1	Items stored in front of electrical panel violate NFPA 70 code.	Remove items stored in front of electrical panel.	\$0
Other Electrical	Receptacles/Shop Work Bench	Fair	2	There are too few receptacles for work bench area.	Install three or more quadruplex receptacles.	\$2,000

LIFE
SAFETY

MECHANICAL + PLUMBING

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Plumbing Water	Water Heater/ Utility Room	Fair	2	The electric water heater is nearing the end of it useful life.	Replace water heater.	\$1,500
Other Plumbing	Pump Station/Exterior Entry Gate Area	Fair	2	The pumping station with alarm is present. The condition is unknown and no information is available onsite.	Perform regular maintenance.	\$0

Parks Maintenance Facility

ARCHITECTURAL + STRUCTURAL

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Exterior Roof	Cold Storage Shed	Fair	3	The roof on the cold storage is sloped corrugated metal that drains to gutters on the north and south sides. The roof is original to the construction which is unknown. The average useful life is 25-30 years.	Perform regular maintenance.	\$0
Exterior Walls	Cold Storage Shed	Fair	3	The exterior walls are vertical metal panels with minor damage in a few areas.	Perform regular maintenance.	\$0
Exterior Doors	Maintenance Shop Overhead Doors	Fair	4	There are four overhead doors. The two on the west portion of the shop operate manually. The two on the east portion are electric. These doors appear to have been replaced within the last 10 years.	Perform regular maintenance.	\$0
Exterior Doors	Maintenance Shop Exterior Doors	Fair	2	Two metal exterior doors with metal frames serve the maintenance shop.	Perform regular maintenance.	\$0
Exterior Other	Exterior Drainage	Poor	2	Poor drainage is pushing water back toward building on the north side (rear of building). This issue is possibly connected to settlement of west end of building.	Regrade so positive drainage is achieved so stormwater drains away from the building. Could be completed in conjunction with removal of ash trees behind the building.	\$4,000
Interior Ceiling	Maintenance Shop Interior Ceilings	Fair	3	With the exception of the office and breakroom, the ceiling is open to the insulated roof deck. The office and breakroom have acoustical textured drywall ceilings.	Perform regular maintenance.	\$0

ARCHITECTURAL + STRUCTURAL

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Interior Floors	Interior Floor Slab	Fair	4	Interior concrete floor slab slopes to the rear of the building (this exists only on the westernmost structure). A crack exists down the middle of the building (longitudinally) that indicates the back half of the building has settled relative to the front half. The building likely has a foundation that is either not adequately protected from frost and/or has poor soils below. While this does not present a life safety risk, it does pose issues with the function of the space given the strong slope in the floor.	Remediation of the cracked and sloping floor would require reconstruction, which is much more costly than the benefit it could provide. Therefore, no action is recommended as it is not a life safety issue. Further investigate the cause of the slope.	\$0
Interior Floors	Cold Storage Shed	Fair	4	The concrete floor has minor cracks throughout. No floor drains were observed.	Perform regular maintenance.	\$0

ELECTRICAL + TECHNOLOGY

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Power Supply	Electrical Service	Fair	I	Service size is likely undersized at 100 amps.	Perform load study to understand if service size is adequate.	\$1,200
Other Electrical	Site/Fuel Pump	Poor	I	There is no power switch located near the fuel pump so it must be turned on/off from inside the building.	Install a power switch near the fuel pump.	\$3,400
Other Electrical	Electrical Panelboard/ Behind Door	Poor	I	Electrical panel behind door violates NFPA 70 working clearance and is a safety issue. Panel is also too small for building size with no room for additional circuits, and does not contain a main disconnect for the building.	Replace electrical panelboard with a minimum 12 circuit panelboard that has a main circuit breaker. Relocate panelboard to provide safe working clearance.	\$3,400
Other Electrical	Light Switch/ Maintenance Building	Poor	I	Light switch not accessible near entrance.	Move light switch near building entrance.	\$1,100
Other Electrical	Fuse Panel	Poor	I	Obsolete fuse panel in service and appears to serve as main service disconnect.	Replace fuse panel with modern circuit breaker type. Locate in accessible location. Coordinate with possible service upgrade and removal of panelboards in closet.	\$2,700
Other Electrical	Receptacles/Interior	Poor	I	There are at least three interior receptacles that are not GFCI type.	Replace receptacles with GFCI type.	\$400
Other Electrical	Maintenance building	Poor	I	There are at least eight garage/shop receptacles are not GFCI type.	Replace receptacles with GFCI type.	\$1,400

MECHANICAL + PLUMBING

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Plumbing Water	Exterior Wall/Southwest	Poor	1	No vent on the sanitary line could be located. Building code requires a vent.	Install a vent through the roof.	\$340
Plumbing Water	Water Heater/Loft Above Toilet/West	Poor	1	The water heater cover is not secured. The average useful life is 15 years. The water heater has surpassed its useful life.	Install a new water heater.	\$1,500
Restrooms	Electrical Box/Loft Above Toilet/West	Poor	1	There are exposed wires in the electrical box.	Install new wires in electrical box.	\$170
Plumbing Water	Eye Wash Station/West	Poor	1	No documentation was posted near the emergency shower indicating when it was tested last.	Inspect unit for proper operation.	\$460
Other Mechanical	Gas Meter/Southwest West Exterior	Poor	1	The gas meter on the corner of the building is not protected from vehicles with bollards.	Install bollards.	\$1,900
Heating Cooling	Electric Water Heaters/ Office Area	Fair	2	There are wall-mounted electric water heaters.	Perform regular maintenance.	\$0
Other Mechanical	Fuel Dispensing Pump/North	Poor	1	No emergency stop button for the fuel dispensing pump was present as required by the 2018 International Fire Code.	Install an emergency stop button.	\$1,400
Heating Cooling	Hanging Gas Unit Heater/ East Storage Area	Fair	2	The east storage area is served by a hanging gas unit heater of an unknown age.	Replace unit heater.	\$4,700
Other Mechanical	Chemical Storage Area/Eastside	Poor	1	There is no air inlet to makeup the exhaust rate. The area smelled of chemical fumes.	Install an air transfer grill, and ensure a negative balance is maintained in the storage area.	\$1,400
Other Plumbing	Restroom/Westside	Poor	1	The wet floor behind the toilet indicates a long-term leak.	Repair restroom leak.	\$500

LIFE
SAFETY

MECHANICAL + PLUMBING

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Heating Cooling	Ceiling-Mounted Unit Heater/West	Poor	1	The Lennox brand unit heater has surpassed its useful life. Corrosion has caused holes in the cabinet. The insulation on the underside of the roof is sagging.	Replace unit heater. Tighten ceiling insulation.	\$4,700
Plumbing Water	Water Line/West	Fair	2	The water line appears to be resting on the door lift spring, which could be a source of damage.	Relocate the water line on the roof.	\$170

Stolley Park Shelter

ELECTRICAL + TECHNOLOGY

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Power Supply	Electrical Service	Fair	3	Service size appears to be adequate for building use.	Perform regular maintenance.	\$0
Other Electrical	Building Exterior receptacle	Poor	I	Missing cover and receptacle is corroding.	Replace receptacle and cover.	\$200
Other Electrical	Interior Receptacles	Poor	I	At least two receptacles are not GFCI type.	Replace receptacles with GFCI type.	\$340
Other Electrical	Panel Receptacle	Poor	I	Receptacle not GFCI type.	Replace receptacle with GFCI type.	\$200
Other Electrical	Exterior Panel Enclosure	Poor	I	Enclosure door latch and lock were not functional.	Repair/replace enclosure latch and lock.	\$470

Band Shell

ARCHITECTURAL + STRUCTURAL

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Exterior Roof	Roof	Good	3	The roof has asphalt architectural style shingles that appear to be in good condition. The average useful life is 20 years.	Perform regular maintenance.	\$0
Exterior Roof	Fascia	Poor	1	The east fascia board behind the rain gutter is starting to rot.	Replace the fascia board when the roof is replaced.	\$1,600
Exterior Walls	Exterior CMU Wall/ Northwest Corner	Poor	1	One corner of the CMU wall below the concrete stage floor is deteriorating and cracking.	Replace the damaged block.	\$1,700
Exterior Walls	Brick Walls	Good	4	The brick walls on the east and west ends of the bandshell are free from observable damage and moisture intrusion.	Perform regular maintenance.	\$0
Exterior Walls	Concrete Mason Unit (CMU) Walls	Good	3	The painted concrete masonry unit (CMU) walls on the north and south sides of the bandshell are in good condition.	Perform regular maintenance.	\$0
Exterior Other	East Stair Railing/ West Stage Railing	Poor	1	The stair railing has come loose. The railing on the west is missing a mid-rail section.	Reattach east stair railing and add a mid-rail section to the stage railing.	\$1,200

ELECTRICAL + TECHNOLOGY

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Power Supply	Electrical Service	Fair	3	Existing service size is adequate for building use.	Perform regular maintenance.	\$0
Exterior Lighting	Security Light/Exterior	Poor	1	No security light present at the east entrance.	Install a lighting wall pack at entrance.	\$2,000
Exterior Lighting	Lighting/Northeast	Fair	2	Existing lighting at the northeast building corner is not LED.	Upgrade light to LED.	\$800
Exterior Lighting	Recessed Lighting/Performance Area	Poor	2	Recessed lights in performance area appear to be incandescent and not working.	Replace light bulbs with LED type.	\$2,300
Exterior Lighting	Lighting Controls	Poor	2	Lighting dimmer controls for performance area do not appear to be functional.	Replace dimmers.	\$260
Life Safety	Emergency Egress Lighting/Exterior	Poor	1	Emergency egress lighting was not observed.	Install emergency egress lighting.	\$3,400
Other Electrical	Exterior Receptacles	Poor	1	The three exterior receptacles lack a ground-fault circuit interrupter outlet (GFCI) for safety.	Replace receptacles with GFCI type.	\$670
Other Electrical	Panelboard	Fair	2	Panelboard is corroded.	Replace panelboard.	\$2,700

LIFE
SAFETY

East Leach Shelter

ARCHITECTURAL + STRUCTURAL

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Roof	Roof	Fair	4	The roof appears to be sagging a small amount (1-2 inches) near the entrance into the west and center rooms. The sag corresponds to an interior wall location where some of the roof is sagging, while another area is not. The sag does not appear concerning or an indication of any life safety issues; sags often occur in old wood roofs due to their age.	No action required.	\$0
Exterior Windows	Windows	Good	4	The windows are slide-style vinyl double-paned glass with wood frames. All are operable and in good condition.	Perform regular maintenance.	\$0
Exterior Doors	Doors	Fair	1	The exterior doors are metal with wood frames. The lower portion of the frames are starting to rot. A few door thresholds exceed the allowable height for accessibility in the ADA Standards.	Prep and repaint doors and frames. Modify door thresholds.	\$0
Interior Ceiling	Throughout	Fair	3	The ceiling section on the east side of the building is 2'x4' acoustical tile and grid. The tiles are sagging. The ceiling section on the west side is exposed wood.	Replace the acoustical ceiling tile.	\$4,800
Interior Walls	Throughout	Good	3	The interior walls are painted CMU. They appear in good condition.	Perform regular maintenance.	\$0

ELECTRICAL + TECHNOLOGY

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Other Electrical	Exterior Receptacle/ East Side	Poor	I	Receptacle east side is not GFCI type.	Replace receptacle with GFCI type.	\$340

MECHANICAL + PLUMBING

Sub Category	Element/Location	Condition	Priority	Details	Recommendations	Estimated Cost
Other Mechanical	Ceiling Tiles/East Seating Area	Poor	1	The ceiling tiles and fan blades are sagging. This may be due to humidity levels.	Install a dehumidifier.	\$1,600
Heating Cooling	Mini-Split/East Side Seating Area	Good	2	The area is served by a Fujitsu brand mini-split air conditioner and condensation pump.	Perform regular maintenance.	\$0
Heating Cooling	Mini-Split/East Side Seating Area	Good	2	The area is served by a Fujitsu brand mini-split air conditioner and condensation pump.	Perform regular maintenance.	\$0
Other Plumbing	Water Heater/Mechanical Room	Good	3	The area is served by two Navien brand gas water heaters.	Perform regular maintenance.	\$0
Heating Cooling	Furnace/Mechanical Room	Fair	2	A forced air furnace installed ten years ago provides heat to restrooms and showers.	Perform regular maintenance.	\$0
Other Mechanical	Exhaust Fan/Restrooms	Poor	1	No exhaust in restroom and furnace not running during visit to provide air circulation.	Install exhaust fans to bring restrooms to code. Maintain air circulation during occupied hours.	\$3,800
Heating Cooling	Mechanical Room	Poor	1	The wood structure room is discolored and black in color indicating moisture due to improper room exhaust and air circulation. The wood studs also felt damp.	Install proper room exhaust to circulate air.	\$2,400
Heating Cooling	Unit Heater/East Sitting Area	Poor	1	The area is served by a Modine brand unit. Unable to locate thimble as required by manufacturer installation instructions.	Replace unit heater and ensure thimble is installed.	\$4,700
Heating Cooling	A/C Unit/Office Room	Good	3	The area is served by a Soleusair brand window air conditioning unit.	Perform regular maintenance.	\$0
Heating Cooling	Mini- Split/ Meeting Rooms/West	Good	1	The area is served by a Fujitsu heat pump featuring a single pump and dual head. Confirm all fan heads have drains connected.	Ensure all fan heads are drained to exterior.	\$500

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Space Needs

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Space Programming

LANDFILL SPACE PROGRAM

Scale House	Quantity	Sq. Ft.	Size	Sq. Ft.	Remarks
Existing Building	1	3,264	48' x 68"		Add a new ADA restroom and minor renovation.
New Shop Addition	1	1,728	48' x 36"	1,728	Two new shop bays.
New Scale Office	1	192	12' x 16'	192	Visual to new scale.
New Wash Bay	1	1,344	28' x 48'	1,344	Drive thru wash bays.
TOTAL				3,264	
OFFICE AREA SUBTOTAL				3,264	

Site Total Areas	Sq. Ft.				
Total Site					Site is approximately 154 acres.
Existing Buildings	3,264				
Building Expansions	3,264				
New scale to provide more room for truck/semi queuing off of highway.					

LIBRARY SPACE PROGRAM

Transfer Building	Quantity	Sq. Ft.	Size	Sq. Ft.	Remarks
Existing Library	1	13,760			
New Staff ADA Toilet	1	64		64	
New Chair Cart Storage	1	160		160	Includes eight 2' x 2' carts and one 2' x8' cart.
New Program Storage	1	60		60	
New 100 Seat Community Room	1	2500		2,500	
Maker Space					Program Iowa Communication Network (ICN) room for this use.
LIBRARY EXPANSION TOTAL SQ. FT.				2,784	

PARK DEPARTMENT SPACE PROGRAM

Office Area	Quantity	Sq. Ft.	Size	Sq. Ft.	Remarks
Office	1	192	12' x 16'	192	Four 6' x 8' work stations.
Reception/Entry	1	100		100	Public entry and waiting area.
Copy Center/Work Room/File Storage	1	100	Varies	100	Plans, copy machine, and supplies.
Employee Area/Time Clocks	1	80	16' x 5'	80	
Training/Multi-purpose/Breakroom	1	900	Varies	900	Kitchenette, projection screen, and training/meeting tables.
Safety Equipment Storage	1	200		200	
Janitor Closet	1	40	8' x 5'	40	
Men's Restroom/Locker Room	1	400	Varies	400	Lockers and toilets.
Women's Restroom/Locker Room	1	200	Varies	200	Lockers and toilets.
Mechanical and Electrical Room	1	300		300	
Circulation	1	300		300	15% of total office area.
OFFICE AREA SUBTOTAL				2,812	

Equipment Parking	Quantity	Sq. Ft.	Size	Sq. Ft.	Remarks
Medium Spaces	13	250	10' x 25'	3,250	Assumes all vehicles park indoors.
Miscellaneous Equipment	1	500		500	Chainsaws, tillers, augers, weed whips, and miscellaneous tools.
Mud Room / Wash Room	1	128	16' x 18'	128	Ice machine and jug water station.
Vehicle Circulation				2,000	
VEHICLE STORAGE SUBTOTAL				5,878	

Equipment Maintenance	Quantity	Sq. Ft.	Size	Sq. Ft.	Remarks
Maintenance Bays	1	1,152	24' x 48'	1,152	One hoist for mowers and one hoist for pickups.
Small Equipment Bay	1	540	18' x 30'	540	
Blade Sharpening	1	250		250	Bench grinder and 20-foot work bench.
EQUIPMENT MAINTENANCE SUBTOTAL				1,692	

Maintenance Support Spaces	Quantity	Sq. Ft.	Size	Sq. Ft.	Remarks
Chemical and Oil Storage	1	150		150	
Parts and Tools Room	1	200		200	Shipping and receiving access.
Miscellaneous Storage	1	300		300	
Staging/Docking Area	1	400		400	Pallet jack, dismantle area, grass seed, and chemicals.
MAINTENANCE SUPPORT SUBTOTAL				1,050	
Departmental Shops	Quantity	Sq. Ft.	Size	Sq. Ft.	Remarks
Wood Shop	1	300		300	Table saw, circular saw, and miscellaneous equipment.
Wood Storage	1	200	20' x 40'	200	
Paint Shop	1	500		500	Paint booth, work area, and paint storage.
DEPARTMENTAL SHOPS SUBTOTAL				1,000	
Building Program Summary	Quantity	Sq. Ft.	Size	Sq. Ft.	Remarks
Office Area Total				2,812	
Equipment Parking				5,878	
Maintenance Support				1,050	
Equipment Maintenance				1,692	
Departmental Shops Total				1,000	
BUILDING PROGRAM SUBTOTAL				12,432	
Site Program Requirements	Quantity	Sq. Ft.	Size	Sq. Ft.	Remarks
Landscape Materials Pad	1	500		500	
Parking Spaces	20	270	9' x 18'	5,400	
Fuel Island	1	500		500	500 gallon tank.
RV Dump Station	1	500	25' x 80'	500	Room to park a RV.
Trash Area	1	400	20' x 20'	400	Enclosed dumpster area.
TOTAL				7,300	
Site Circulation				10,950	150% of Site Program.
SITE PROGRAM SUBTOTAL				18,250	

Site Total Areas	Quantity	Sq. Ft.	Size	Sq. Ft.	Remarks
Existing Buildings	5,600				
Main Building	10,740				
Circulation Around Building	21,583				
Building Area Total	32,323				
Green Space	4,563				25% of Site Program.
Site Program Total	18,250				
TOTAL SITE AREA NEEDED	55,136				Total square footage and acreage, plus added 30% of programmed acreage for drainage paths, easements, setbacks, etc.

POLICE DEPARTMENT

Police Dept Areas	Quantity	Sq. Ft.	Size	Sq. Ft.	Remarks
Patrol/Squad Room	6	48	6' x 8"	288	Currently 12 FTE, 2 shifts, 2 per work station, located in squad room. Projected to 18 FTE.
Squad Room Files/Storage	1	200		200	
Briefing Room	1	600		600	Seating for 24.
Staff Conference Room	1	200		200	Seating for 6-8.
Staff Restrooms	2	64		128	
Lieutenants Offices	3	192	12' x 16'	576	Currently 4 FTE lieutenants, 2 per office. Projected to 5 FTE.
Investigators Offices	3	192	12' x 12'	576	Currently 2 FTE investigators with private offices. Projected to 3 FTE.
Chief's Office	1	192	12' x 16'	192	Currently 1 chief with a private office.
School Resource Officer (SRO)	1	48	6' x 8'	48	Currently 1 SRO. Locate work station in the squad room.
Support (Administrative)	1	80	8' x 10'	80	Locate near secure lobby.
Support (Custodian)	1	48	6' x 8'	48	Locate in mechanical room/janitorial area.
Records Room/Files	1	200		200	Locate near administrative area.
Dispatch Command Center	2	80	8' x 10'	160	Currently 8 dispatch, 2 each shift.
Dispatch-Kitchenette Break Area	1	180		180	Refrigerator, sink, casework, and seating for 2-4.
Dispatch-Toilet	1	64		64	ADA accessible.
Public Lobby	1	100		100	Secure vestibule with a security glazing to administrative assistant.
Historical Display/Recognition	1	100		100	
Conference Room/Soft Interview	1	200		200	Seating for 6-8, public access.
Hard Interview Room	1	120		120	Seating for 4, adjacent to sallyport.
Juvenile Holding Area for Boys and Girls	2	120		240	Near squad room/sallyport.
Public Toilets	2	64		128	Single fixture, men and women.
Men's Locker Room	1	600		600	25-28 lockers, toilets, and showers.
Women's Locker Room	1	400		400	6 lockers, toilets and shower.
Fitness Center	1	900		900	Cardio equipment and weights.
Armory-Weapons and Tactical Gear	1	200		200	Existing is approximately 125 sq. ft. Locate near the squad room.
Armory-Gun Cleaning	1	120		120	Adjacent to Armory-Weapons space.

SPACE PROGRAMMING

POLICE DEPARTMENT, CONTINUED

Evidence-Processing	I	300		300	Evidence lockers, processing area, refrigerator, and drying cabinets, tag and bag, Evidence double- sided lockers, adjacent to evidence storage.
Evidence Storage	I	700		700	Various storage shelving systems and high density storage.
Vehicle Processing Bay	I	1,000	25'x40'	1,000	
Server Room/Telcom	I	300		300	
Miscellaneous Storage for Confiscated (Vehicles, Bikes, Etc.)	I	3,000		3,000	
Indoor Vehicle Parking	I	4,000		4,000	Sallyport area and 20,10' x 20' parking stalls.
TOTAL				15,948	
45% Circulation, Storage, Custodial				7,177	
AREA SUBTOTAL				23,125	

Site Total Areas	Sq. Ft.				
Existing Building/Police Department Area Estimated	24,000			20 FTE + 8 FTE Dispatch + 1.5 FTE Support	
New Building	23,125			29 FTE + 8 FTE Dispatch + 2 FTE Support	

SOLID WASTE

Transfer Building	Quantity	Sq. Ft.	Size	Sq. Ft.	Remarks
Existing Office	1		13' x 15'		195 sq. ft. No change to existing space.
Existing Garbage Dump and Loading	1		48' x 65'		3,120 sq. ft. No change to existing space.
New ADA Toilet	1	64		64	
OFFICE AREA SUBTOTAL				64	
Existing Equipment Parking Building	Quantity	Sq. Ft.	Size	Sq. Ft.	Remarks
Existing Equipment Parking	1		65' x 70'		4,550 sq. ft. with 4 stalls.
Additional Indoor Equipment Parking	1	3,500	50 x 70	3,500	2 stalls with 4 additional for equipment parking.
Existing Welding Bay	1		35' x 70'		2,450 sq. ft.
Existing Appliance Recycling	1		60' x 70'		4,200 sq. ft.
Wash Bay	1	2,100	28' x 75'	2,100	
VEHICLE STORAGE SUBTOTAL				5,600	
Building Program Summary	Quantity	Sq. Ft.	Size	Sq. Ft.	Remarks
Total Additional Area to Transfer Building				64	
Total Additional Area to Equipment Parking Building				5,600	
BUILDING PROGRAM SUBTOTAL				5,664	
Site Total Areas	Sq. Ft.				Remarks
Total Site					Site is approximately 5.04 acres.
Existing Buildings	11,200				
Building expansions	5,664				

STREET DEPARTMENT

Office Area	Quantity	Sq. Ft.	Size	Sq. Ft.	Remarks
Superintendent	1	192	12' x 16'	192	
Future Office	1	144	12' x 12'	144	
Reception Entry	1	100		100	Public entry and waiting area.
Medium Conference Room	1	192	12 x 16	192	Conference table and chairs for 10 people.
Copy Center/Work Room/File Storage	1	144	Varies	144	Map and plan racks, flat files, and a table.
Secure Server Room	1	80	8' x 10'	80	
Employee Area/Time Clocks	1	80	16' x 5'	80	
Training/Multipurpose/Breakroom	1	1,000	Varies	1,000	Television, kitchenette, and projection screen.
Janitor Closet	1	40	8' x 5'	40	
Men's Restroom/Locker Room	1	600	Varies	600	2' x 2' open face lockers.
Women's Restroom/Locker Room	1	300	Varies	300	2' x 2' open face lockers.
TOTAL				2,872	
Mechanical and Electrical Room	1	425		425	
Circulation	1	706		706	25% of total office area.
OFFICE AREA SUBTOTAL				4,003	
Vehicle Storage	Quantity	Sq. Ft.	Size	Sq. Ft.	Remarks
Large Spaces	16	544	16' x 34'	8,704	Single and tandem axle parking.
Medium Spaces	8	250	10' x 25'	2,000	Assumes all vehicles park indoors with room for plows and wings.
Miscellaneous Equipment				5,500	Area within Vehicle storage for parking small pieces of equipment or trailers.
Mud Room/Wash Room	1	128		128	Ice machine and jug water station.
TOTAL				16,332	
Vehicle Circulation				11,000	
VEHICLE STORAGE SUBTOTAL				27,332	

Vehicle Maintenance	Quantity	Sq. Ft.	Size	Sq. Ft.	Remarks
Vehicle Bays					
Large Maintenance Bay	1	2,240	32' x 70'	2,240	Double bays with two. 75,000 lb. lifts, lube reels, and overhead crane.
Small Maintenance Bay	2	1,200	30' x 40'	2,400	Single bays with 12,000 lb. lift, lube reels, and overhead crane.
TOTAL				4,640	
Maintenance Support Spaces					
Welding and Fabrication Bay	1	2,100	30' x 70'	2,100	Welding curtain, benches, etc.
Bulk Fluids Room	1	288		288	
Parts and Tools Room	1	1,150		1,150	Shipping and receiving access.
Mechanic's Office	1	192	12 x 16	192	Two mechanics share office.
TOTAL				3,730	
Circulation	1	578		600	
VEHICLE MAINTENANCE SUBTOTAL				8,970	
Wash Bay Building	Sq. Ft.				Remarks
Vehicle Wash Bay	1	2,100	30' x 70'	2,100	Automated wash bay with prewash area.
WASH BAY SUBTOTAL				2,100	
Departmental Shops	Sq. Ft.				Remarks
Sign Shop	1	800	20' x 40'	800	
Additional general storage	1	3,000		3,000	could be mezzanine
DEPARTMENTAL SHOPS SUBTOTAL				3,800	
Building Program Summary	Sq. Ft.				Remarks
Office Area Total				4,003	
Vehicle Storage Total				27,332	
Vehicle Maintenance Total				8,970	
Wash Bay Total				2,100	
Departmental Shops Total				3,800	could be mezzanine
BUILDING PROGRAM SUBTOTAL				46,205	

SPACE PROGRAMMING

Site Program Requirements	Quantity	Sq. Ft.	Size	Sq. Ft.	Remarks
Salt/Sand Building	1			0	Existing is adequate.
Parking Spaces	20	270	9' x 18'	5,400	
Fuel Island	1	1,200	24' x 50'	0	
Material Storage Bins	1	2,000	25' x 80'	2,000	Asphalt, class V rock, black dirt, etc.
Storm Water Retention	1	6,405	44' x 60'	6,405	1" rain on impervious programmed area, 5' average depth with 25% average for slope.
Trash Area	1	400	20' x 20'	400	Enclosed dumpster area.
TOTAL				14,205	
Site Circulation				21,308	150% of site program.
SITE PROGRAM SUBTOTAL				35,513	
Site Total Areas	Sq. Ft.				Remarks
Existing Building Garage	21,736				
Existing Building Cold Storage	17,662				
Main Building	46,205				
Circulation Around Building	21,583				
Cold Storage	20,000				Seasonal vehicle parking and misc. storage.
Building Area Total	87,788				
Green Space	8,878				25% of site program.
Site Program Total	35,513				
TOTAL SITE AREA NEEDED	132,179				Total square footage and acreage, plus added 30% of programmed acreage for drainage paths, easements, setbacks, etc.



Cost Estimate

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Cost Estimate

No.	Facility	Item Description	Unit	Qty	Unit Price	Estimated Costs*	Deferred Maintenance Costs
1	Police Department	Main building	SF	16,125	\$400	\$8,062,500	\$790,290
2		Vehicle parking and general storage	SF	7,000	\$200	\$1,750,000	
3	Street Department	Central Garage	SF	46,205	\$300	\$17,326,875	\$993,330
4		Cold storage	SF	20,000	\$175	\$4,375,000	
5		Fuel Island-reuse existing	LS	1		\$0	
6		Salt/sand building	LS	1	\$250,000	\$312,500	
7		Miscellaneous storage bins for materials	LS	5	\$3,000	\$18,750	
8		Existing site dome and salt building demolition	LS	1	\$300,000	\$375,000	
9	Parks Department	Shop building—Option 1	SF	12,432	\$300	\$4,662,000	\$339,740 <i>Existing Parks Building</i> \$839,300 <i>Reuse Existing Streets Department Central Garage</i>
10		Fuel Island-above grade (reuse existing)	LS	1		\$0	
11		Renovate existing Central Garage—Option 2	LS	1	\$500,000	\$625,000	
12	Street + Parks Department	New streets + parks building	SF	54,405	\$300	\$20,401,875	N/A
13		Cold storage	SF	20,000	\$175	\$4,375,000	
14		Fuel Island-reuse existing	LS	1		\$0	
15		Salt/sand building	LS	1	\$250,000	\$312,500	
16		Miscellaneous storage bins for materials	LS	5	\$3,000	\$18,750	
17		Existing site dome and salt building demolition	LS	1	\$300,000	\$375,000	
18	Landfill Maintenance Building	Addition	SF	4,950	\$175	\$866,250	\$246,670
19		Renovate existing building	SF	1,600	\$125	\$250,000	
20		Relocate scale	LS	1	\$125,000	\$156,250	
21	Solid Waste + Transfer Station	Renovation and addition	SF	5,600	\$175	\$1,225,000	\$259,550
22	Library	Interior renovation—Phase 1	SF	1,390	\$125	\$217,188	\$177,420
23		Work room addition—Phase 1	SF	1,111	\$350	\$486,063	
24		Multipurpose room expansion—Phase 1	SF	1,270	\$350	\$555,625	
25		Addition (community room and support)—Phase 2	SF	6,470	\$375	\$3,032,813	

LS: Lump Sum SF: Square Foot

*Includes soft costs

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Glossary

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Glossary

Word Acronym	Definition/Acronym
A/C	Air conditioning.
ADA	Americans with Disabilities Act.
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers. ASHRAE standards establish consensus for test methods and performance criteria. These include voluntary consensus standards for Method of Measurement or Test, Standard Design and Standard Practice. Consensus standards define minimum values or acceptable performance. ASHRAE is accredited by the American National Standards Institute (ANSI) and follows ANSI's requirements for due process and standards development.
BUR	Built up roof.
Casework	Casework is storage, shelving, and cabinetry, that can be purchase ready-made.
CIPC	Cast-in-place concrete.
CMU	Concrete Masonry Units.
Domestic Cold Water	Drinking water.
Egress	An exit out of a space, building, or parking lot.
EPDM	Ethylene propylene diene terpolymer rubber (EPDM).
Exposed (isolation) joints, Isolation joint	Allows movement to occur between a concrete slab and adjoining columns and walls of a building. Isolation joints are provided to separate new concrete from existing or adjacent construction, which might expand and contract differently or experience different soil settlement or other movement.
Façade	Exterior surface of a structure.

Word Acronym	Definition/Acronym
Fluorescent	Traditional lighting that often is in a tube. Known to be less efficient than LED.
Gypsum Board	A type of sheathing used for interior walls and ceilings, also known as sheetrock or drywall.
Hazardous Materials	Any item or agent (biological, chemical, radiological, and/or physical), which has the potential to cause harm to humans, animals, or the environment, either by itself or through interaction with other factors.
HVAC	Heating, Ventilation, and Air Conditioning.
Ingress	Entrance into a space, building, or parking lot.
LED	Light-emitting diode. Light bulb type that uses less energy and has a longer lifespan than incandescent lighting.
Life Safety	Construction, protection, and occupancy features necessary to minimize danger to life from the effects of fire, including smoke, heat, and toxic gases created during a fire. Life Safety Code and NFPA 101 are registered trademarks of NFPA. All or part of the NFPA's Life Safety Code are adopted as local regulations throughout the country.
MEP	Mechanical, Electrical, and Plumbing.
Millwork	Custom made cabinets, shelving, and storage.
Panic bar	The operational bar or paddle that when pushed against, opens a latching mechanism on an assembly referred to as panic hardware.
Parcel	A portion or area of land.
Sheet Flow	Flow that occurs overland in places where there are no defined channels, the flood water spreads out over a large area at a uniform depth. This also referred to as overland flow.
Site Grading	Site grade is the slope and elevation of the soil around a building.

Word Acronym	Definition/Acronym
Topography	The detailed mapping or charting of the features of a land area.
Truncated domes	Truncated domes are tactile paving or a set of raised bumps on a pathway (sidewalk) or platform. Truncated domes alert visually impaired individuals of surface changes and other potential hazards.
Utilities	Services typically piped or wired onto the site from a city source. For example, electricity, gas, water, cable, and telephone services are considered utilities.
VCT	Vinyl Composition Tile. Typically used on floors.

EXPERTISE

Architecture
Engineering
Environmental
Planning

WORK

Commercial
Education
Food + Industrial
Government + Cultural
Healthcare
Housing
Mining
Public Works
Sports + Recreation
Telecommunications + Energy
Transportation
Water



Des Moines, IA
Storm Lake, IA
Waterloo, IA
Mankato, MN
Minneapolis/St. Paul, MN
Rochester, MN
Sioux Falls, SD
Green Bay, WI
La Crosse, WI
Milwaukee, WI

ISGInc.com

On January 12, 2017, ISG formally announced its transition of firm ownership to a 100% employee stock ownership plan (ESOP). As a multi-disciplinary firm that started 49+ years ago, ISG has since grown to be a Top 500 Design Firm as recognized by Engineering News-Record (ENR), a Zweig Group Hot Firm, and PSMJ Circle of Excellence recipient, illustrating the progressive increase in talent, expertise, and market share.



Windsor Heights Chapters 165–177 Ordinance Update Additional Discussion

City Council
October 2, 2023



Discussion Items

- Architectural Materials
- Accessory Dwelling Units
- Electric Vehicle Charging Stations
- Non-Conforming Structures/Uses
- UC District Buffers and Minimum Lot Width
- Combination of UC/TC Districts
- Parkland Dedication
- Parking Standards
- Signage (Temporary Signs/Maximum Sign Size)
- Example of Application of New Requirements

Architectural Materials

Architectural Materials - Purpose

- Require development in the City to meet minimum architectural design standards
- Preserve the character of residential neighborhoods and commercial and industrial areas
- Maintain and improve the tax base
- Reduce the impacts of dissimilar land uses



Architectural Materials – Proposed Language (172.14)

1. Applicability. Except as described below, all façade requirements and materials are to be subject to their respective zoning requirements and complement currently existing buildings and structures within the district.
2. Façade Material. All building façade materials that face the primary street will complement the surrounding buildings and parcels around the proposed building. These materials will be deemed appropriate by the City's Zoning Administrator.
3. Façade Coverage. The percentage of the façade that each material covers will conform to design standards within the respective zoning district and any additional condition listed further within this section.
 1. In the UC – University Ave Mixed Use District, the primary street-facing façade of all buildings, excluding windows and doorways, must consist of a minimum of 50% brick.
4. 4. The Zoning Administrator will be responsible for determining compliance with this criterion.

Architectural Materials – Other Alternatives

1. Identify specific classes of materials
 1. Class A – brick, natural stone, glass, stucco, architectural grade precast panels, etc.
 2. Class B – wood, metal wall panel systems, textured concrete panels, fiber cement panels and lap siding, etc.
 3. Class C – vinyl siding, corrugated metal wall panels, concrete block, smooth tip-up panels, etc.
2. Or, identify permitted materials without breaking them down into classes
3. Require a specific percentage of the building façade consist of certain materials
 1. Most ordinance use 25-50%
 2. Some ordinances apply standards to street-facing façade only, while others apply standard to all sides
 3. Many ordinances list maximum percentage of lower class materials on any façade
 4. Standards may vary by district (residential, commercial, industrial)
4. Question for Council – how would you like to proceed?
5. Application of new standard would require additional discussion and Planning Commission review



Accessory Dwelling Units

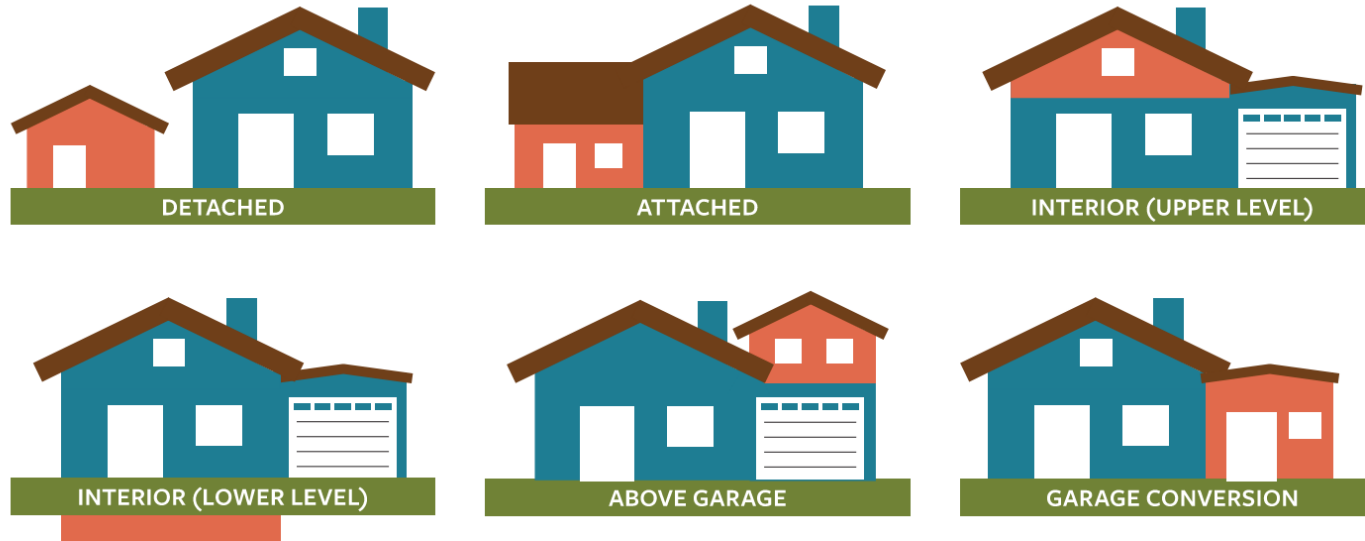
Accessory Dwelling Unit (ADU)

Definition:

- A self-contained residential unit with its own living room, kitchen and bathroom
- May be stand-alone or converted part of an existing residential structure

Benefits:

- Expanding affordable housing options
- Earning income
- Aging in place and downsizing
- Housing for friends, family and caregivers
- Reducing environmental impact



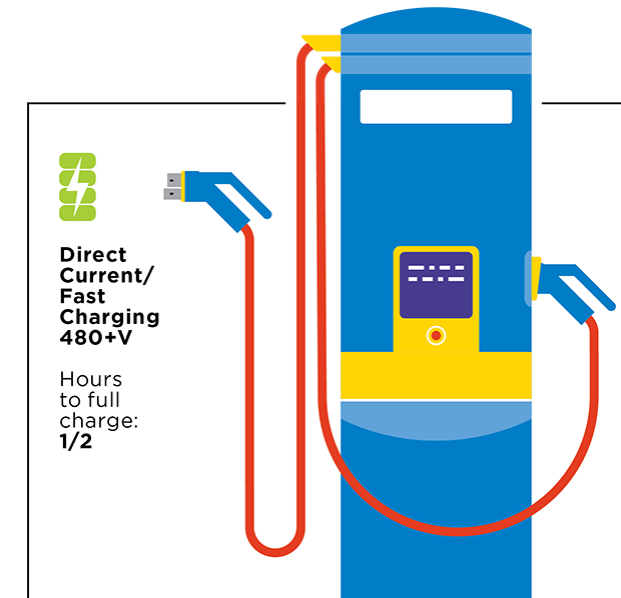
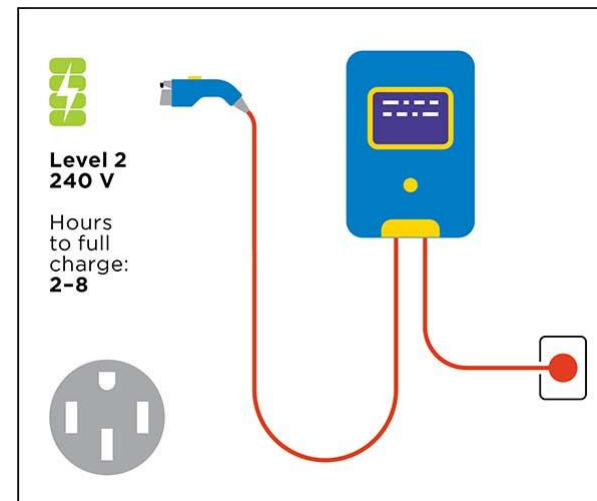
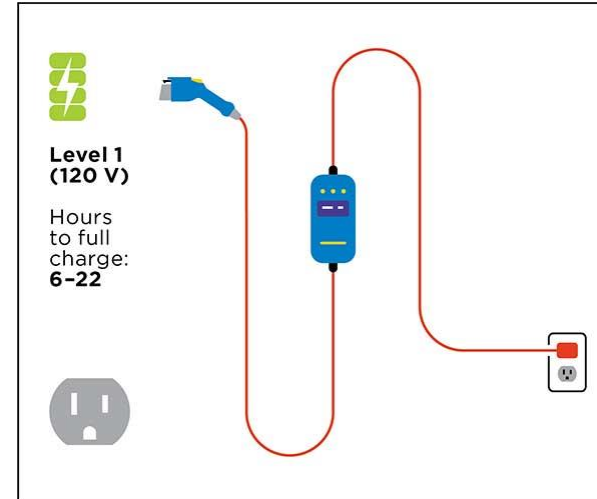
Accessory Dwelling Unit (ADU)

- ADUs are not included as a permitted use in the current zoning code or the proposed code
- If allowed, issues to consider include:
 - Permitted or Conditional Use
 - Number Allowed and Maximum Size
 - Occupancy
 - Location and Setbacks
 - Height and Roof Type
 - Materials
 - Character
 - Parking
 - Entrances
- Question for Council: how would you like to proceed?
- Application of new standard would require additional discussion and Planning Commission review

Electric Vehicle Charging Stations

Electric Vehicle Charging Stations

- With the increase in electric vehicles, many communities are planning for needed infrastructure (charging stations)
- Current and proposed ordinance do not include requirements for EV charging
- Issues to consider:
 - Should requirements apply to all uses or only certain uses
 - What percentage should apply (1-5%)
 - What level of charger should be required
 - How should regulations be applied to changes in use
- Question for Council: how would you like to proceed?
- Application of new standard would require additional discussion and Planning Commission review



Nonconforming Development

Nonconforming Development

		R-1 ¹	R-2 ²	R-3 ³	CC ⁴	UC ⁵	LI
Min Lot Area (square feet)	Existing	7,200-9,600	7,200	7,200	5,000-7,200	0-5,000	10,000
	Proposed	7,200	7,200	7,200	10,000	5,000	10,000
Min Lot Width (feet)	Existing	50-80	60	60	50-60	20-50	50
	Proposed	50	50	50	50	25	50

¹ Original R-1 and R-2 are now combined as R-1

² Original R-3 is now R-2

³ Original R-4 is now R-3

⁴ Original O, CC and GC districts have been combined into CC

⁵ Original UC and TC districts have been combined into UC

Nonconforming Development (176)

176.02 - Existing Development:

- Any maintenance to any structure or site feature shall not cause the site or building to become non-compliant. If the site or building is already non-compliant, the change to the building or site proposed by the owner shall not cause them to become more non-compliant.

176.04 – Nonconforming Lots

- Nonconforming lots of record existing at the time of the adoption of this Zoning Code shall be exempt, unless otherwise provided, from the minimum lot area and lot width requirements of each zoning district. Such lots may be developed with any use allowed by the regulations for the district and must comply with all other site development regulations.

176.05 – Nonconforming Structures

- A lawful nonconforming structure existing on the effective date of this Zoning Code may be continued, repaired, maintained, or altered, subject to the provisions of this section.
- A lawful nonconforming structure may be added to or enlarged if the addition subject to specific conditions
- Repair of Nonconforming Structures. A lawful nonconforming building damaged by fire, explosion, storm, or other calamity, except flood damages, may be repaired and reconstructed, provided there is no increase in the degree of nonconformity.

Combination of UC/TC Districts

Combination of UC/TC Districts



Purpose of UC and TC Districts

Existing Ordinance

District	Purpose
UC	This district recognizes the mixed-use character of the University Avenue Corridor, which contains a combination of residential, commercial, and office uses. This corridor will include special aesthetic and sign design standards which will help enhance its character as Windsor Heights’ main street.
TC	This district is intended to provide appropriate development regulations to encourage the emergence of the 66th and University Avenue area as a town center for Windsor Heights. The regulations will recognize the mixed-use and civic character of the area, and will help to encourage the development of a pedestrian oriented district at the intersection.

Proposed Ordinance

District	Purpose
UC	This district is intended for commercial facilities which serve the needs of markets ranging from several neighborhoods to the overall region. CC Districts are appropriate at major intersections, at the junction of several neighborhoods, or at substantial commercial sub-centers.

Uses in UC and TC Districts

Use Types	UC	TC
Single-Family Detached	P	C
Single-Family Attached	P	C
Duplex	P	-
Two-Family	P	-
Townhouse	P	-
Multiple-Family	P	P
Downtown Residential	-	P
Retirement Residential	C	P
Administration	P	P
Clubs	P	P
College/University	C	C
Convalescent Service	C	-
Cultural Services	P	P
Day Care (Limited)	P	P
Day Care (General)	P	P
Elder Family Home	P	P
Elder Group Home	P	P
Emergency Residential	P	P

Use Types	UC	TC
Family Home	C	C
Group Care Facility	P	P
Group Home	P	P
Guidance Services	P	P
Health Care	P	P
Hospitals	C	C
Parks/Recreation	P	P
Postal Facilities	P	P
Primary Education	P	P
Public Assembly	P	P
Religious Assembly	P	P
Safety Services	P	P
Secondary Education	C	C
Utilities	P	P
General Offices	P	P
Financial Services	P	P
Medical Offices	P	P
Auto Services	C	C

Use Types	UC	TC
Bed and Breakfast	P	P
STVR	P	P
Business Support	P	P
Business/Trade School	P	P
Cocktail Lounge	C	C
Commercial Recreation (Limited)	P	P
Commercial Recreation (General)	C	-
Communication Service	P	P
Consumer Service	P	P
Food Sales (Convenience)	C	C
Food Sales (Limited)	P	P
Food Sales (General)	C	C
Funeral Service	P	P
Gaming Facility	C	C
General Retail (Small-Scale)	P	P

Use Types	UC	TC
General Retail (Large-Scale)	C	P
Laundry Services	C	-
Liquor Sales	C	C
Lodging	C	C
Personal Improvement	P	P
Personal Services	P	P
Pet Services	P	P
Research Services	P	P
Restaurants (Drive-In)	C	-
Restaurants (General)	P	P
Trade Services	C	C
Veterinary Services	P	P
Off-Street Parking	C	P
Parking Structure	P	P
Custom Manufacturing	C	C
Transportation Terminal	C	C
Amateur Radio Tower	P	P

Proposed Uses – UC District

Use Types	UC
Administration	P
Amateur Radio Tower	P
Auto Services	C
Bars	P
Bed and Breakfast	P
Business Support	P
Business/Trade School	P
Civic Organizations	P
College/University	C
Commercial Recreation (General)	C
Commercial Recreation (Limited)	P
Communications Services	P
Consumer Services	P
In-Patient Services	C
Cultural Services	P
Custom Manufacturing	C
Day Care (General)	P
Day Care (Limited)	P
Emergency Residential	P
Family Home	P
Financial Services	P

Use Types	UC
Food Sales (Convenience)	C
Food Sales (General)	C
Food Sales (Limited)	P
Funeral Services	P
Gaming Facility	C
General Offices	P
General Retail (Large-Scale)	C
General Retail (Small-Scale)	P
Group Care Facility	P
Group Home	P
Guidance Services	P
Health Care (Large-Scale)	C
Health Care (Small-Scale)	P
Laundry Services	C
Liquor Sales	P
Lodging	P
Medical Offices	P
Off-Street Parking	C
Parking Structure	P
Parks/Recreation	P
Pet Services	C

Use Types	UC
Postal Facilities	P
Primary Education	P
Public Assembly	P
Research Services	P
Residential, Downtown	P
Residential, Duplex	P
Residential, Multi-Family	P
Residential, Single-Family Detached	P
Residential, Townhouse	P
Restaurants (Drive-In)	C
Restaurants (General)	P
Retirement Residential	C
Safety Services	P
Secondary Education	P
Surplus Sales	C
STVR (Short Term Vacation Rental)	P
Trade Services	C
Transportation Terminal	C
Utilities	P
Veterinary Services	P

Development Standards – UC and TC

		UC	TC
Minimum Lot Area (square feet)	Existing	5,000	0
	Proposed	5,000	--
Minimum Lot Width (feet)	Existing	50	20
	Proposed	25	--
Front Yard (feet)	Existing	25	0
	Proposed	0	--
Street Side Yard (feet)	Existing	25	0
	Proposed	0	--
Interior Side Yard (feet)	Existing	0	0
	Proposed	0	--
Rear Yard (feet)	Existing	10	0
	Proposed	10	--
Bufferyards Adjacent to Residential Districts (feet)	Existing	20 (R-1, R-2) 15 (R-3) 10 (R-4)	20 (R-1, R-2) 15 (R-3) 10 (R-4)
	Proposed	10 (all R districts)	--

Combined UC/TC Districts

- The combination of the UC and TC districts into a single district was discussed and determined through workshops with the Planning and Zoning Commission
- Question for Council: What, if any, are the specific concerns with the new UC district?
 - Lot size?
 - Lot width?
 - Permitted and Conditional Uses?
 - Buffers?
 - Setbacks?
 - Others?

Parkland Dedication

Parkland Dedication

- Parkland Dedication is the dedication of space on a residentially developing parcel to be set aside for public parks or open space. Or in lieu of dedicating space, the developer can substitute space on their property with a monetary Parkland Dedication substitute.
- This allows for open and green space to be added to the developing community or funds to develop, update, and maintain current public parks.
- Typically, a Parkland Dedication section of Code is located within the Subdivision Ordinance, something that Windsor Heights doesn't have.
- Question for Council – What is your opinion and decision on this?
- This will need to go back to Planning and Zoning Commission for review

Parking Standards

Parking Requirements

- The Parking Requirements within the Proposed Zoning Ordinance were decided upon and determined through workshops with the Planning and Zoning Commission
- The Parking Minimums were requested to be lowered so as not to deter development within Windsor Heights

Parking Requirements

- Reviewing the following:
 - Bars – 1 per 500 Sq. Ft. of Primary Building
 - Day-Care Services - 1 per 500 Sq. Ft. of Primary Building
 - Multi-Family Dwellings – 1 per Dwelling Unit
 - Restaurants - 1 per 500 Sq. Ft. of Primary Building

Parking Requirements

- Reviewing the following (Proposed):
 - Bars – 1 per 500 Sq. Ft. of Primary Building
 - 1 per 200 Sq. Ft.
 - Day-Care Services - 1 per 500 Sq. Ft. of Primary Building
 - 1 per 5-Person capacity plus 1 per Employee on Largest Staff
 - Multi-Family Dwellings – 1 per Dwelling Unit
 - 1.5 per efficiency or 1-Bedroom Unit; 2 per other units
 - Restaurants - 1 per 500 Sq. Ft. of Primary Building
 - General – 1 per 3-Person capacity in dining area plus 1 per each 150 square feet in cocktail lounge
 - Drive-In – 1 per 50 Sq. Ft. of customer service area

Parking Requirements

- Reviewing the following (Proposed):
 - Average Bar – 1 per 500 Sq. Ft. of Primary Building (4.5 Parking Spots)
 - 1 per 200 Sq. Ft. (14.5 Parking Spots)
 - Day-Care Services - 1 per 500 Sq. Ft. of Primary Building
 - 1 per 5-Person capacity plus 1 per Employee on Largest Staff
 - Multi-Family 100 Dwellings – 1 per Dwelling Unit (100 Parking Spots)
 - 1.5 per efficiency or 1-Bedroom Unit; 2 per other units (150 – 200 Parking Spots)
 - Average Restaurant - 1 per 500 Sq. Ft. of Primary Building (7 Parking Spots)
 - General – 1 per 3-Person capacity in dining area plus 1 per each 150 square feet in cocktail lounge (-- Parking Spots)
 - Drive-In – 1 per 50 Sq. Ft. of customer service area (-- Parking Spots)

Parking Requirements

- General Ideas to Consider:
 - Parking is expensive to provide for developers and you'll get push back on higher requirements
 - The environmental impact of more parking is exponentially negative
 - There currently is street parking along University Avenue to accommodate parking for businesses
 - These numbers are a minimum, a developer will always place more parking depending on their use, the current market trends, and to be competitive with other surrounding businesses

Signage Requirements

Updated Signage Code

- The Signage Code has been updated to come into conformance with the State of Iowa Statutes
- This includes:
 - Removal of permission of signage based upon content of sign
 - Sign size regulations
 - Temporary signage

Currently Proposed – Maximum Signage

- 1. Maximum Permitted Sign Area. Maximum permitted sign area for a premises is set forth as a numerical limit and is the combined total of all signs on the premise.
- 2. Sign Area.
 - a. Sign area includes the entire area within the perimeter enclosing the extreme limits of the sign, excluding any structure essential for support or service of the sign, or architectural elements of the building.
 - b. The area of double-faced signs is calculated on the largest face only.
 - c. The sign area for ground signs, monument signs, and architectural sign bands is calculated as the area enclosing the extreme limits of the copy only.
 - d. In the case of individual letters mounted to a wall, the total area in a simple shape such as a rectangle around the letters will be calculated.
- 3. Height. The height of a sign is measured from the average grade level below the sign to the topmost point of the sign or sign structure.
- 4. Setback. The setback of a sign is measured from the property line to the supporting frame, mast, pole, or base of the sign.

Zoning district	Maximum total square feet
R-1, R-2	8
R-3	32
MH	48
CC, UC	150
LI	200

Zoning District:		R-1 R-2	R-3 MH	CC UC	LI
Detached Signs					
Number Permitted Per Premises		1	1	NA	NA
Maximum Size* (square feet)		8	32	90	90
Maximum Height (feet) of Structure Above Ground		10	10	10	10
Front Yard Setback (feet)		5	5	10	0
Side Yard Setback (feet)		10	10	5	0
Attached Signs					
Maximum Size* (square feet)		8	32	150	200
* For those uses only permitted a sufficient maximum sign area in Table 175-3					

What Changes Can Be Made...

- A table can be added that includes another layer of differentiation to the maximum signage based upon building footprint of the primary structure on the property.
- This would create different sign maximums for different uses on properties such as different maximums between a Wal-Mart and a Scooter's Coffee while still residing within the same Zoning District.
- Question for the Council – What is your decision on this?
- This will need to go back to the Planning and Zoning Commission for review

Primary Building Footprint	Maximum Total Signage (Sq. Ft.)
Less than 2000 Sq. Ft.	60
2,001 - 4,000 Sq. Ft.	85
4,001 - 7,500 Sq. Ft.	100
7,501 - 10,000 Sq. Ft.	125
More than 10,000 Sq. Ft.	150

Currently Proposed – Temporary Signage

Definition:

“Sign, Temporary” means a sign constructed of cloth, canvas, vinyl, paper, plywood, fabric, plastic, or other lightweight material that is neither permanently installed in the ground nor permanently affixed to a building or structure that is permanently installed in the ground, and which is displayed less than 60 days. The term “temporary sign” includes, but is not limited to, A-frame signs, lawn signs, banners, and inflatable signs. The term “temporary sign” does not include flags and signs that are intended to regularly move, such as a moving sign.

175.02 GENERAL PERMIT PROCEDURES.

Any installation, modification, or expansion of any sign which is not exempt from the provisions of this chapter shall be subject to the following permit procedure.

1. Maintenance of Valid Sign Permit. The owner of a property containing signs requiring a permit under this Zoning Code shall at all times maintain in force a sign permit for such property. Sign permits may be issued for individual zoned lots, tenants, or sign owners. A sign permit may be revoked if the sign is not maintained in good condition.
2. Any person who displays a sign in compliance with this code may substitute the message on that sign without first securing any additional approval, permitting, or notice, provided that any such substitution would not result in the sign becoming noncompliant.
3. Nothing in this code is intended or shall be construed so as to prevent the strengthening or restoration to a safe condition of a nonconforming sign for purposes of public health and safety.
4. Sign Permit Applications. All applications for sign permits shall be submitted to the Zoning Administrator in accordance with application specifications established by the ordinance.
5. Application Fees. Each application for a sign permit shall be accompanied by any applicable fees, which shall be established by the Council from time to time by resolution.
6. Permit Expiration. If a permanent sign is not constructed in accordance with an approved permit within six months of the date of approval, such permit shall lapse. Permits on non-permanent signs lapse in accordance with the timeline identified on the permit. After 60 days, permits are required to maintain temporary signs or more than a single temporary sign with a maximum of two renewals.
7. Assignment of Sign Permits. A current and valid sign permit shall be freely assignable to a successor as owner of the property or holder of a business license for the same premises.

What Changes Can Be Made...

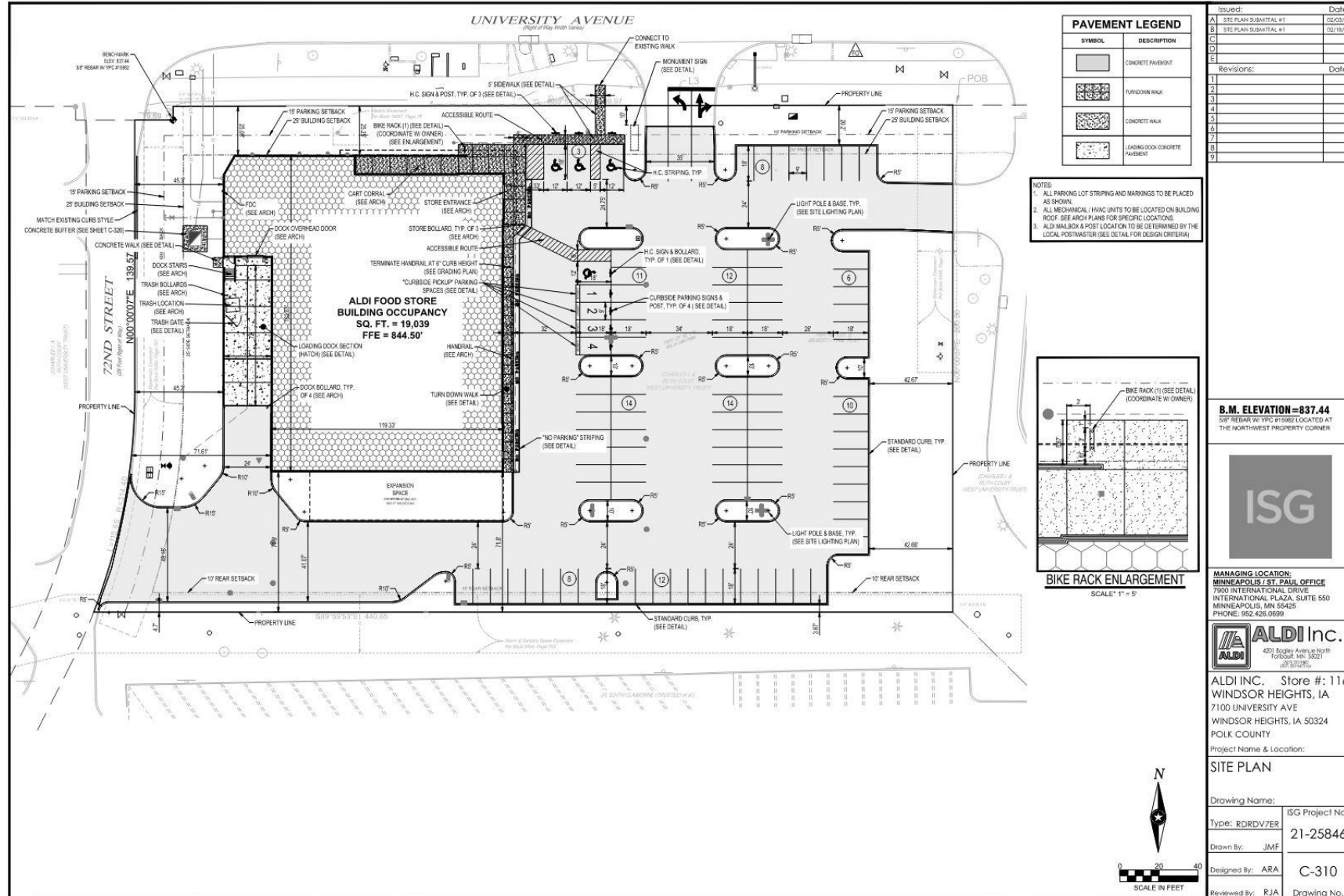
- Create an entirely new section to focus on Temporary Signs and the regulations of time allocated to them on their respective property
- Update to the General Permit Procedures section of the proposed Zoning Ordinance to outline the timeline of Temporary Signs more clearly
- Question for Council – What is your decision on this?
- This will need to go back to the Planning and Zoning Commission for review

Example of Proposed Code

Aldi Site Plan Review

- Project: Aldi Grocery Store
- Zoning District: University Ave Mixed Use District
(Conditional Use Permit Required)
- Comprehensive Plan: Commercial
- Use: Food Sales (General)

Aldi Site Plan Review



Aldi Site Plan Review (What is Different)

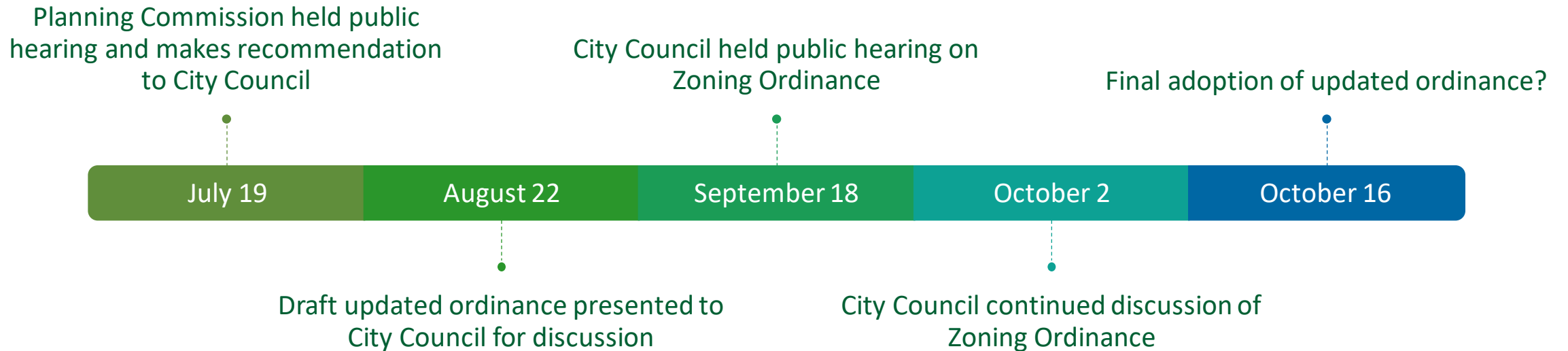
- Setbacks
 - Proposed ordinance allows 0' Front and Street Side setbacks rather than 25'.
- Signage on Property
 - Proposed ordinance allows more than one detached sign if it is within the 90 sq. ft. of maximum signage area for detached signs.
- Main Building Height
 - Proposed ordinance permits a maximum height of 60' instead of the current 45'.
- Maximum Impervious Surface
 - Aldi would not have had a maximum impervious surface percentage under the proposed code. The sight could've increased the parking lot size, but not the building.

Aldi Site Plan Review (Outcome)

- Aldi could've had their building closer to the street, taller, had more parking, and additional detached signage for more clear representation of the property.

Next Steps

Code Adoption



Additional Action

- Zoning Map update for consistency with new code
 - Requires public hearing and Planning Commission review

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WINDSOR HEIGHTS MUNICIPAL CODE

CHAPTER 165 – CHAPTER 177

CHAPTER 165 ZONING CODE – GENERAL PROVISIONS

165.01 Title	165.05 Conflicting Provisions
165.02 Jurisdiction	165.06 Relief from Other Provisions
165.03 Purpose	165.07 Publication
165.04 Consistency with Comprehensive Development Plan	165.08 Severability

165.01 TITLE.

Chapters 165 through 177 of this Code of Ordinances shall be known as the Zoning Code of the City of Windsor Heights.

165.02 JURISDICTION.

The provisions of the Zoning Code shall be applicable to all property within the corporate limits of the City as authorized by Chapter 414 of the Code of Iowa.

165.03 PURPOSE.

The purposes of the Zoning Code are to:

1. Serve the public health, safety, and general welfare of the City and its jurisdiction.
2. Classify property in a manner that reflects its suitability for specific uses.
3. Provide for sound, attractive development within the City and its jurisdiction.
4. Encourage environmentalism of adjacent land uses.
5. Protect environmentally sensitive areas.
6. Further the objectives of the Comprehensive Development Plan of the City.

165.04 CONSISTENCY WITH COMPREHENSIVE DEVELOPMENT PLAN.

The City intends that this Zoning Code and any amendments to it shall be consistent with the City's Comprehensive Development Plan. It is the City's intent to amend this Code whenever such action is deemed necessary to keep regulatory provisions in conformance with the Comprehensive Development Plan.

165.05 CONFLICTING PROVISIONS.

The Zoning Code shall be held to provide the minimum requirements necessary for the promotion of public health, safety, and welfare. If any provision of the Zoning Code conflicts

with any other provision of the Zoning Code, any other Ordinance of the City, or any applicable State or federal law, the more restrictive provision shall apply.

165.06 RELIEF FROM OTHER PROVISIONS.

Nothing in these provisions shall relieve any property owner or user from satisfying any condition or requirement associated with a previous approval, special permit, variance, development permit, or other permit issued under any local, State, or federal ordinance or statute.

165.07 PUBLICATION.

This Code shall be published in book or pamphlet form and, together with the maps being a part hereof, shall be filed with the City Administrator.

165.08 SEVERABILITY.

If any section, provision, or part of the Zoning Code be adjudged invalid or unconstitutional, such adjudication shall not affect the validity of the Ordinance as a whole or any section, provision, or part thereof not adjudged invalid or unconstitutional.

CHAPTER 166

ZONING CODE – DEFINITIONS

166.01 Purpose

166.03 Definition of Terms

166.02 General Construction of Language

166.01 PURPOSE.

The purpose of this chapter is to promote consistency and precision in the interpretation of this Zoning Code. The meaning and construction of words as set forth shall apply throughout this Zoning Code, unless where modified in a specific section or where the context of such words or phrases clearly indicates a different meaning or construction.

166.02 GENERAL CONSTRUCTION OF LANGUAGE.

The following general rules of construction apply to the text of the Zoning Code.

1. Headings. Section and subsection headings contained herein are provided for illustrative purposes only and shall not be deemed to limit, govern, modify, or otherwise affect the scope, meaning, or intent of any provision of the Zoning Code.
2. Illustration. In the case of any real or apparent conflict between the text of this Zoning Code and any illustration explaining the text, the text shall apply.
3. Conjunctions. Unless the context clearly indicates the contrary, the following conjunctions shall be interpreted as follows:
 - a. “And” indicates that all connected items or provisions apply.
 - b. “Or” indicates that the connected items or provisions may apply singly or in any combination.
 - c. “Either ... or” indicates that the connected items or provisions shall apply singly but not in combination.
4. Referenced Agencies. Unless otherwise indicated, all public officials, bodies, and agencies referred to in this chapter are those of the City.

166.03 DEFINITION OF TERMS.

For the purposes of this Zoning Code, certain terms and words are hereby defined. Certain sections contain definitions which are additional to those listed here. Where terms are not specifically defined, their ordinarily accepted meaning or meanings implied by their context shall apply.

1. “Absolute Photometry” means photometric measurements (usually of a solid-state luminaire) that directly measure the footprint of the luminaire. Reference Standard IES LM-79.
2. “Abutting” means having lot lines or district boundaries in common, including property separated by a public street or alley. This term is used interchangeably with “adjacent.”
3. “Accessory Structure” means a structure which is incidental to and customarily associated with a specific principal use or building on the same site. The structure may or may not contain a dwelling unit. See Dwelling, Accessory.

4. “Accessory Use” means a use which is incidental to and customarily associated with a specific principal use on the same site.
5. “Addition” means any construction which increases the size of a building or structure in terms of site coverage, height, length, width, or gross floor area.
6. “Administration” means governmental office uses providing administrative, clerical, or public contact services that deal directly with the citizen, together with incidental storage and maintenance of necessary vehicles. Typical uses include Federal, State, County, and City offices.
7. “Administrative Official” means the Windsor Heights Administrative Official or appropriate designee.
8. “Adult Entertainment” means any business activity which offers the opportunity to view sexual activities or view or touch anatomical areas for entertainment purposes, depicts or describes sexual conduct. This category includes the sale or viewing of visual or print materials that meet these criteria. Typical uses include retail services or stores which are distinguished by an emphasis on activities or materials that emphasize sexual content; businesses which offer live performances characterized by exposure of specified anatomical areas; and adult theaters.
9. “Agent of Owner” means any person showing written verification that he/she is acting for – and with the knowledge and consent of – a property owner.
10. “Agricultural Sales and Service” means establishments or places of business engaged in sale from the premises of feed, grain, fertilizers, farm equipment, pesticides, and similar goods or in the provision of agriculture-related services with incidental storage on lots other than where the service is rendered. Typical uses include nurseries, hay, farm implement dealerships, feed and grain stores, and tree service firms.
11. “Alley” means a public right-of-way which is used as a secondary means of access to abutting property.
12. “Alteration” means any construction or physical change in the internal arrangement of spaces, the supporting members, the positioning on a site, or the appearance of a building or structure.
13. “Amateur Radio Tower” means a structure for the transmission or broadcasting of electromagnetic signals by FCC-licensed amateur radio operators.
14. “Apartment” means a dwelling unit within a building designed for and suitable for occupancy by only one family. Apartments are generally located within multi-family residential buildings.
15. “Architectural Lighting” means lighting designed to reveal architectural beauty, shape, and/or form and for which lighting for any other purpose is incidental.
16. “Astronomic Time Switch” means an automatic lighting control device that switches outdoor lighting relative to the time of solar day with the time of year.
17. “Attached” means having one or more walls in common with a principal building or connected to a principal building by an integral architectural element, such as a covered passageway, façade wall extension, or archway.
18. “Automotive and Equipment Services” means establishments or places of business primarily engaged in the sale and/or service of automobiles, trucks, or heavy equipment. The following are considered automotive and equipment use types:

- a. Automotive Rental and Sales: Sale or rental of automobiles, noncommercial trucks, motorcycles, motor homes, recreational vehicles, or boats, including incidental storage, maintenance, and servicing. Typical uses include new and used car dealerships; motorcycle dealerships; and boat, trailer, and recreational vehicle dealerships.
 - b. Auto Services: Provision of fuel, lubricants, parts and accessories, and incidental services to motor vehicles; and washing and cleaning and/or repair of automobiles, non-commercial trucks, motorcycles, motor homes, recreational vehicles, or boats, including the sale, installation, and servicing of equipment and parts. Typical uses include service stations, car washes, muffler shops, auto repair garages, tire sales and installation, wheel and brake shops, and similar repair and service activities but exclude dismantling, salvage, or body and fender repair services.
 - c. Repair Services: Repair, painting, or refinishing of the body, fender, or frame of automobiles, trucks, motorcycles, motor homes, recreational vehicles, boats, tractors, construction equipment, agricultural implements, and similar vehicles or equipment. Typical uses include body and fender shops, painting shops, and other similar repair or refinishing garages.
 - d. Equipment Rental and Sales: Sale or rental of trucks, tractors, construction equipment, agricultural implements, mobile homes, and similar heavy equipment, including incidental storage, maintenance, and servicing. Typical uses include truck dealerships, construction equipment dealerships, and mobile home sales establishments.
 - e. Equipment Repair Services: Repair of trucks, tractors, construction equipment, agricultural implements, and similar heavy equipment. Typical uses include truck repair garages, tractor and farm implement repair services, and machine shops, but exclude dismantling, salvage, or body and fender repair services.
 - f. Vehicle Storage (Short-term): Storage of operating or non-operating vehicles for a period of no more than 21 days. Typical uses include storage of private parking tow-aways or impound yards but exclude dismantling or salvage. Long-term storage of operating or non-operating vehicles beyond 21 days constitutes an industrial use type.
 - g. Vehicle Storage (Long-Term): Long-term storage of operating or non-operating vehicles for a period exceeding 21 days. Typical uses include storage of private parking tow-aways or impound yards but exclude dismantling or salvage.
19. “Backlight” means, for an exterior luminaire, lumens emitted in the quarter sphere below horizontal and in the opposite direction of the intended orientation of the luminaire. For luminaires with symmetric distribution, backlight will be the same as front light.
20. “Base Zoning District” means a district established by this Zoning Code which prescribes basic regulations governing land use and site development standards. For any actions taken after the effective date of this Code, no more than one Base Zoning District shall apply to any individually plated lot or parcel unless the lot or parcel is part of a Planned Unit Development.

21. “Basement” means a level of a building below street level that has at least one-half of its height below the surface of adjacent ground. A basement used for independent dwelling or business purposes shall be considered a story for the purposes of height measurement. Chapter 185 sets forth floodplain and floodway regulations governing building standards in flood-prone areas.
22. “Bar” means a use engaged in the preparation and retail sale of alcoholic beverages for consumption on the premises, including taverns, bars, cocktail lounges, and similar uses other than a restaurant as that term is defined in this section.
23. “Bed and Breakfast” means a lodging service that provides overnight or short-term accommodations to guests or visitors, usually including the provision of breakfast. Bed and breakfasts are usually located in large residential structures that have been adapted for this use. For the purpose of this definition, bed and breakfasts are always owned and operated by the resident owner of the structure, include no more than ten units, and accommodate each guest or visitor for no more than seven consecutive days during any one-month period.
24. “Beginning of Construction” means the initial incorporation of labor and materials within the foundation of a building or structure.
25. “Berm” means a mound of earth or fill material designed to blend into a landscape either to block out unwanted views or uses, to decrease noise, or to improve the design of a property.
26. “Block” means an area of land within a subdivision that is entirely bounded by streets, or by streets and the exterior boundaries of the subdivision, or by a combination of the above with a watercourse or lake, and which has been designated as such on a plat for the purposes of the legal description of a property.
27. “Blockface” means the property abutting one side of a street and lying between the two nearest intersection streets or between the one nearest intersecting street and a major physical barrier, including, but not limited to, railroads, streams, lakes, or the corporate limits of the City.
28. “Board of Adjustment” means a body established by the Code of Iowa for the purpose of issuing conditional use permits, interpreting and granting variances, and hearing appeals as provided by this Zoning Code.
29. “Broadcasting Tower” means a structure for the transmission or broadcasting of radio, television, radar, or microwaves, ordinarily exceeding the maximum height permitted in its zoning district.
30. “BUG” means a luminaire classification system that classifies backlight (B), uplight (U), and glare (G).
31. “Buffer” means a combination of horizontal space (land) and vertical elements (plants, berm, fences, and walls), used to physically separate or visually screen incompatible adjacent land uses.
32. “Buffer Yard” means a landscaped area intended to separate and partially obstruct the view of two adjacent land uses or properties from one another.
33. “Building” means a structure entirely separated from any other structure by space or by walls and having a roof and being built to provide shelter, support, or enclosure for persons or property.

34. “Building Coverage” means the area of a site covered by buildings or roofed areas, excluding allowed projecting eaves, balconies, and similar features.
35. “Building Envelope” means the three-dimensional space within which a structure is permitted to be built on a lot after all zoning and other applicable municipal requirements have been met.
36. “Building Line” means the outer boundary of a building established by the location of its exterior walls.
37. “Building Marker” means an historic or commemorative plaque, or a building name or cornerstone carved into a masonry surface.
38. “Building Official” means the designee of the City Council, responsible for the enforcement of Chapter 155 of this Code of Ordinances.
39. “Business” means activities that include the exchange or manufacture of goods or services on a site.
40. “Business Support Services” means an establishment or place of business primarily engaged in the sale, rental, or repair of equipment, supplies, and materials or the provision of services used by office, professional, and service establishments to the firms themselves but excluding automotive, construction, and farm equipment; or engaged in the provision of maintenance or custodial services to businesses. Typical uses include office equipment and supply firms, small business machine repair shops or hotel equipment and supply firms, janitorial services, photography studios, and convenience printing and copying.
41. “Caliper” means the diameter of a tree trunk. Usually used for trees less than 12 inches in diameter.
42. “Campground” means facilities providing camping or parking areas and incidental services for travelers in recreational vehicles or tents, which accommodate each guest or visitor for no more than seven consecutive days during any one-month period.
43. “Canopy” means a projecting non-movable structure cantilevered or suspended from a building, supported by the main structural members to which it is attached, and used only as a roof or fixed shelter. A canopy may include a printed message or graphic, or not, and is treated no differently as a result under this ordinance.
44. “Cemetery” means land used or intended to be used for the burial of the dead and dedicated for cemetery purposes, including columbaria, crematoria, mausoleums, and mortuaries when operated in conjunction with and within the boundary of such cemetery.
45. “Certificate of Occupancy” means an official certificate issued by the Building Official, upon finding of conformance with the City’s Building Code (Chapter 155), and upon receipt of a Certificate of Zoning Compliance.
46. “Certificate of Zoning Compliance” means an official certificate issued by the Building Official, which indicates that the proposed use of a building or land complies with the provisions of this Zoning Code.
47. “Change of use” means the replacement of an existing use by a new use.
48. “Clearance” means the distance from the bottom of a sign face elevated above grade and the grade below.
49. “Civic Organizations” means uses providing meeting, recreational, or social facilities for a private, nonprofit, or non-commercial association, primarily for use by members and guests.

50. “College and University Facilities” means an educational institution of higher learning which offers courses of study designed to culminate in the issuance of a degree certified by a generally recognized accrediting organization.
51. “Collector street” means a street connecting neighborhoods within the same communities, designed to carry traffic from local to arterial streets.
52. “Commercial Recreation” means private businesses or other organizations, which may or may not be commercial by structure or by nature, which are primarily engaged in the provision or sponsorship of sports, entertainment, or recreation for participants or spectators. Typical uses include driving ranges, theaters, private dance halls, or private skating facilities. Commercial recreation is divided into the following categories:
 - a. Commercial Recreation (Limited): Facilities which include a structure of 10,000 square feet or less and/or a site covering an area of no more than one-half acre.
 - b. Commercial Recreation (General): Facilities which include a structure of more than 10,000 square feet and/or a site covering an area of more than one-half acre.
53. “Communications Services” means establishments primarily engaged in the provision of broadcasting and other information relay services accomplished through the use of electronic and telephonic mechanisms but not including those classified as Utilities. Typical uses include television studios, telecommunication service centers, telegraph service offices, or film and sound recording facilities. Broadcast towers and their minor ancillary ground structures are classified as miscellaneous use types.
54. “Common Area” means an area held, designed, and designated for common or cooperative use within a development.
55. “Common Development” means a development proposed and planned as one unified project not separated by a public street or alley.
56. “Common Open Space” means land within or related to a development that is not individually owned or dedicated for public use, designed, and generally intended for the common use of the residents of the development.
57. “Commercial Breeders” means a person, engaged in the business of breeding dogs, cats, or other small animals who sells, exchanges, or leases animals in return for consideration or who offers to do so, whether or not the animals are raised, trained, groomed, or boarded by the person. Typical uses are large-scale animal breeding operations.
58. “Compatibility” means the degree to which two or more different land use types are able to exist together in close proximity, with no one use having significant negative effects on any other use.
59. “Comprehensive Plan” means the duly adopted Comprehensive Development Plan of the City to address future growth and development.
60. “Conditional Use Permit (CUP)” means a permit that is intended to accommodate those types of uses that don’t fit neatly into any particular zoning district, and which have the potential to impact surrounding properties. As part of the approval process, the Board of Adjustment can impose conditions on the proposed use to help minimize the potential impacts on surrounding properties.
61. “Conditioned Space” means an area, room, or space normally occupied and being heated and/or cooled by any equipment for human habitation.

62. “Conservation Subdivision” means, wholly or in the majority, a residential subdivision that permits a reduction in lot area, setback, or other site development regulations, provided:
- a. there is no increase in the overall density permitted for a conventional subdivision in a given zoning district; and
 - b. the remaining land area is used for common space.
63. “Construction Yards” means establishments, housing facilities, or businesses primarily engaged in construction activities, including incidental storage of materials and equipment on lots other than construction sites. Typical uses are building contractor’s yards.
64. “Consumer Services” means establishments which provide services primarily to individuals and households, excluding automotive use types. Typical uses include automated banking machines, appliance repair shops, watch or jewelry repair shops, or musical instrument repair shops.
65. “Convenience Storage” means storage services primarily for personal effects and household goods within enclosed storage areas having individual access but excluding the use of such areas as workshops, hobby shops, manufacturing, or commercial activity. Typical uses include mini warehousing.
66. “Court” means an approved private right-of-way which provides access to residential properties and meets at least three of the following conditions:
- a. Serves 12 or fewer housing units or platted lots.
 - b. Does not function as a local street because of its alignment, design, or location.
 - c. Is completely internal to a development.
 - d. Does not exceed 600 feet in length.
67. “Crop Production” means the raising and harvesting of tree crops, row crops, or field crops on an agricultural or commercial basis. This definition may include accessory retail sales under certain conditions.
68. “Cultural Services” means a library, museum, or similar registered nonprofit organizational use displaying, preserving, and exhibiting objects of community and cultural interest in one or more of the arts and sciences.
69. “Custom Manufacturing” means establishments primarily engaged in the on-site production of goods by hand manufacturing, within enclosed structures. This category also includes the incidental direct sale to consumers of only those goods produced on site. Typical uses include ceramic studios, custom jewelry manufacturing, and candle making shops. This involves:
- a. The use of hand tools, or
 - b. The use of domestic mechanical equipment not exceeding 2 horsepower, or
 - c. A single kiln not exceeding 8 KW or equivalent.
70. “Curb” means a stone, concrete, or other improved boundary marking the edge of a road or other paved area.
71. “Curb Line” means a line, whether curbing exists or not, which is the edge of the pavement or shoulder.
72. “Day Care Services” means care for children in the absence of parents or adults requiring supervision for a portion of the day, but less than 24 hours.

- a. Day Care Services (Limited): This use type includes all classifications of day care facilities regulated by the State of Iowa that operate providing care for not more than six children. This term includes nursery schools, preschools, day care centers for children or adults, and similar uses but excludes public and private primary and secondary educational facilities.
 - b. Day Care Services (General): This use type includes all classifications of day care facilities regulated by the State of Iowa that operate providing care for more than six children. This term includes nursery schools, preschools, day care centers for children or adults, and similar uses but excludes public and private primary and secondary educational facilities.
- 73. “Deck” means an unroofed platform, unenclosed except by a railing, which is attached to the ground and/or another structure.
 - 74. “Density” means the amount of development per specific unit of a site.
 - 75. “Detention Facilities” means a publicly operated or contracted use providing housing and care for individuals legally confined, designed to isolate those individuals from the community.
 - 76. “Drive-In Services” means uses which involve the sale of products or provision of services to occupants in vehicles.
 - 77. “Detached” means fully separated from any other building or jointed to another building in such a manner as not to constitute an enclosed or covered connection.
 - 78. “Driveway” means a permanent surface area providing vehicular access between a street and an off-street parking or loading area. A driveway surface area shall be asphaltic, Portland cement binder pavement, paver block, concrete block, or similar surface so as to provide a durable and dustless surface. Gravel or rock is not deemed to be a dustless surface.
 - 79. “Drive-Thru” means an establishment that provides or dispenses products or services, through an attendant or an automated machine, to persons remaining in their vehicle that are in designated drive-thru stacking lanes. A drive-thru facility may be in combination with other uses, such as financial institutions, restaurants, pharmacies, and service providers such as dry cleaners.
 - 80. “Dwelling Unit” means one or more rooms, designed, occupied, or intended for occupancy as a separate living quarter, with cooking, sleeping, and sanitary facilities provided within the dwelling unit for the exclusive use of a single family maintaining a household.
 - 81. “Easement” means a privilege or right of use granted on, above, under, or across a particular tract of land for a specific purpose by one owner to another owner, public or private agency, or utility.
 - 82. “Emergency Conditions” means lighting that is only energized during an emergency power source; or the path of egress solely during a fire or other emergency situation; or, lighting for security purposes used solely during an alarm; or lighting fed from a backup lighting for illuminating
 - 83. “Emergency Residential Services” means a facility or use of a building to provide a protective sanctuary for victims of crime or abuse, including emergency housing during crisis intervention for victims of rape, abuse, or physical beatings. Such facilities are limited to no more than ten victims at any one time.

84. “Enclosed” means a roofed or covered space fully surrounded by walls.
85. “Extended Stay Hotel or Motel” see “Lodging.”
86. “Façade” means the exterior face of a building which is the architectural front, sometimes distinguished from the other faces by elaboration of architectural or ornamental details.
87. “Family” means one or more persons occupying a single dwelling unit, related by blood, marriage, domestic partnership, adoption, or other custodial arrangement.
88. “Family Home” Means a facility as defined in Section 414.22 of the Code of Iowa, including, but not limited to, Elder Family Homes and Elder Group Homes.
- a. “Elder Group Home” means a facility as defined in Section 231B of the Code of Iowa.
89. “Federal” means pertaining to the Government of the United States of America.
90. “Fence” means a structure made of wood, metal, masonry, or other material, typically used to screen, enclose, or divide open space for a setback or along a design site line.
91. “Financial Services” means the provision of financial and banking services to consumers or clients. Walk-in and drive-in services to consumers are provided on site. Typical uses include banks, savings and loan associations, savings banks, and loan companies. An ATM (automatic teller machine) which is not accompanied on-site by an office of its primary financial institution is considered a general retail service use type.
92. “Firework Sales” means establishments selling consumer first class fireworks and consumer second class fireworks. A firework Seller License issued by the State Fire Marshal is required. Firework establishments must comply with all standards of the National Fire Protection Act 1124 and Code of Iowa, [Section 100.19](#).
93. “Floor Area Ratio” means the quotient of gross floor area divided by gross site area.
94. “Food Sales” means establishments or places of business primarily engaged in the retail sale of food or household products for home consumption. Typical uses include groceries, delicatessens, meat markets, retail bakeries, and candy shops.
- a. Food Sales (Convenience): Establishments occupying facilities of less than 10,000 square feet; and characterized by sales of specialty foods or a limited variety of general items, and by the sales of fuel for motor vehicles.
- b. Food Sales (Limited): Establishments occupying facilities of less than 10,000 square feet; and characterized by sales of specialty foods or a limited variety of general items but excluding the accessory sale of fuel for motor vehicles. Typical uses include delicatessens, meat markets, retail bakeries, candy shops, and small grocery stores.
- c. Food Sales (General): Establishments selling a wide variety of food commodities, using facilities larger than 10,000 square feet. Typical uses include supermarkets.
95. “Footcandle” means the unit of measure expressing the quantity of light received on a surface. One footcandle is the illuminance produced by a candle on a surface one-foot square from a distance of one foot.
96. “Frontage” means the length of a property line of any one premise abutting and parallel to a public street, private way, or court.
97. “Fully Shielded Luminaire” means a luminaire constructed and installed in such a manner that all light emitted by the luminaire, either directly from the lamp or a diffusing

- element, or indirectly by reflection or refraction from any part of the luminaire, is projected below the horizontal plane through the luminaire's lowest light-emitting part.
98. “Funeral Services” means establishments engaged in undertaking services such as preparing the human dead for burial and arranging and managing funerals. Typical uses include funeral homes or mortuaries.
99. “Gaming Facilities” means establishments engaged in the lawful, on-site operation of games of chance that involve the risk of money for financial gain by patrons. Gaming facilities shall include the accessory sale of liquor and food, pursuant to licensing regulations of the City or the State.
100. “General Retail Services” means the sale or rental with incidental service of commonly used goods and merchandise for personal or household use but excludes those classified more specifically by these use type classifications. Typical uses include department stores, apparel stores, furniture stores, or establishments providing the following products or services: household cleaning and maintenance products; drugs, cards, stationery, notions, books, tobacco products, cosmetics, and specialty items; flowers, plants, hobby materials, toys, and handcrafted items; apparel jewelry, fabrics and like items; cameras, photographic services, household electronic equipment, records, sporting equipment, kitchen utensils, home furnishing and appliances, art supplies and framing, arts and antiques, paint and wallpaper, hardware, carpeting and floor covering; interior decorating services; retail sales of pets; office supplies; mail order or catalog sales; bicycles; and automotive parts and accessories (excluding service and installation).
- a. General retail services (small scale) include facilities with no more than 10,000 square feet in a single establishment or 30,000 square feet within a multiple-tenant common development.
 - b. General retail services (large scale) include facilities of 10,000 or more square feet in a single establishment or 30,000 square feet within a multiple-tenant common development.
101. “General Offices” means the use of a site for business, professional, or administrative offices. Typical uses include real estate, insurance, management, travel, or other business offices; organization and association offices; banks or financial offices; or professional offices. The use may contain more than one commercial business or a group of nonresidential buildings within a common development.
102. “General Industry” means enterprises engaged in the processing, manufacturing, compounding, assembly, packaging, storage, treatment, or fabrication of materials and products from prepared materials or from raw materials without noticeable noise, odor, vibration, or air pollution effects across property lines.
103. “Glare” means lighting entering the eye directly from luminaires or indirectly from reflective surfaces that causes visual discomfort or reduced visibility.
104. “Grade” means the horizontal elevation of the finished surface of ground, paving, or sidewalk adjacent to any building line.
- a. For buildings having walls facing one street only, the grade shall be the elevation of the sidewalk (or the boundary line between the property and the street right-of-way in the absence of sidewalks) perpendicular to the center of the wall facing the street.

- b. For buildings having walls facing more than one street, the grade shall be the average elevation of the grades of all walls facing each street.
 - c. For buildings having no walls facing a street, the grade shall be the average level of the finished surface of the ground adjacent to the exterior walls of the building.
- 105. “Groundcover” means vegetation that helps in stabilizing the soil such as vines, turf, low growing shrubs, and perennials.
- 106. “Group Residential” means the use of a site for a residence by four or more unrelated persons or distinct individuals, not defined as a family, on a weekly or longer basis.
- 107. “Group Care Facility” means a government-licensed or approved facility which provides for resident care and short or long-term, continuous multi-day occupancy of more than 8 but no more than 30 unrelated persons, not including resident staff. Group Care Facilities include facilities which provide services in accordance with individual needs for the:
 - a. Adaptation to living with, or rehabilitation from, the handicaps of physical disability.
 - b. Adaptation to living with, or rehabilitation from, the handicaps of emotional or mental disorders or developmental disabilities.
 - c. Rehabilitation from the effects of drug or alcohol abuse.
 - d. Supervision while under a program alternative to imprisonment, including (but not limited to) pre-release, work-release, and probationary programs.
 - e. Others who require direct adult supervision.
- 108. “Group Home” means a facility licensed by the State of Iowa in which at least three but no more than eight persons (not including resident managers or house parents), who are unrelated by blood, marriage, or adoption, reside while receiving therapy, training, living assistance, or counseling for the purpose of adaptation to living with or rehabilitation from a physical or mental disability as defined by the relevant provisions of the Code of Iowa or by the Fair Housing Amendments Act of 1988.
- 109. “Gross Floor Area” means the total enclosed area of all floors of a building, measured to the inside surfaces of the exterior walls. This definition excludes the areas of basements, elevator shafts, airspaces above atriums, and enclosed off-street parking and loading areas serving a principal use.
- 110. “Guidance Services” means a use providing counseling, direction, recuperative, or similar services to persons requiring rehabilitation assistance as a result of mental illness, alcoholism, detention, drug addiction, or similar condition on a daytime care basis.
- 111. “Hardscape” means permanent hardscape improvements to the site including parking lots, drives, entrances, curbs, ramps, stairs, steps, medians, walkways, and non-vegetated landscaping that is 10 feet or less in width. Materials may include concrete, asphalt, stone, gravel, etc.
- 112. “Hardscape Area” means the area measured in square feet of all hardscape. It is used to calculate the Total Site Lumen Limit in both the Prescriptive Method and Performance Methods. Refer to Hardscape definition.
- 113. “Hardscape Perimeter” means the perimeter measured in linear feet that is used to calculate the Total Site Lumen Limit in the Performance Method. Refer to Hardscape definition.

114. “Heavy Industry” means enterprises involved in the basic processing and manufacturing of products, predominately from raw materials, with noticeable noise, odor, vibration, or air pollution effects across property lines; or a use or process engaged in the storage of or processes involving potentially or actually hazardous, explosive, flammable, radioactive, or other commonly recognized hazardous materials.
115. “Height” means the vertical distance from the established grade to the highest point of the coping of a flat roof, the deck line of a mansard roof, gable, hip, shed, or gambrel roof. For other cases, height shall be measured as the vertical distance from the established grade to the highest point of a structure as herein defined. Where a building or structure is located on a slope, height shall be measured from the average grade level adjacent to the building or structure.
116. “Health Care” means a facility providing medical, psychiatric, or surgical service for sick or injured persons exclusively on an outpatient basis including emergency treatment, diagnostic services, training, administration, and services to outpatients, employees, or visitors.
- a. Health Care (Small-Scale) includes facilities with no more than 10,000 square feet in a single establishment or 30,000 square feet within a multiple-tenant common development.
 - b. Health Care (Large-Scale) includes facilities of 10,000 or more square feet in a single establishment or 30,000 square feet within a multiple-tenant common development.
117. “Hotel” see “Lodging.”
118. “Home Based Business” or “Home Occupation” means an accessory occupational use conducted entirely within a dwelling unit by its inhabitants, which is clearly incidental to the residential use of the dwelling unit or residential structure and does not change the residential character of its site or have any external evidence of such use.
119. “Horticulture” means the growing of horticultural and floricultural specialties, such as flowers, shrubs, or trees intended for ornamental or landscaping purposes. This definition may include accessory retail sales under certain conditions. Typical uses include wholesale plant nurseries and greenhouses.
120. “Housing Unit” or “Dwelling Unit” means a building or portion of a building arranged for and intended for occupancy as an independent living facility for one family, including permanent provisions for cooking.
121. “IESNA” means Illuminating Engineering Society of North America.
122. “Impervious Coverage” means the total horizontal area of all buildings, roofed or covered spaces, paved surface areas, walkways and driveways, and any other site improvements that decrease the ability of the surface of the site to absorb water, expressed as a percent of site area. The surface water area of pools is excluded from this definition.
123. “Impervious Material” means sealed to severely restrict water entry and movement.
124. “Industry Standard Lighting Software” means lighting software that calculates point-by-point illuminance that includes reflected light using either raytracing or radiosity methods.
125. “In-Patient Services” means uses providing bed care and in-patient services for persons requiring regular medical attention but excluding a facility providing surgical or

- emergency medical services and excluding a facility providing care for alcoholism, drug addiction, mental illness, or communicable disease. Typical uses include nursing homes.
126. “Lamp” means a generic term for a source of optical radiation (i.e. “light”), often called a “bulb” or “tube”. Examples include incandescent, fluorescent, high-intensity discharge (HID) lamps, and low pressure sodium (LPS) lamps, as well as light-emitting diode (LED) modules and arrays.
127. “Landscaped Area” means the area within the boundaries of a given lot, site, or common development consisting primarily of plant material, including but not limited to grass, trees, shrubs, vines, groundcover, and other organic plant materials; or grass paver masonry units installed such that the appearance of the area is primarily landscaped.
128. “Landscape Lighting” means lighting of trees, shrubs, or other plant material as well as ponds and other landscape features.
129. “Laundry Services” means establishments primarily engaged in the provision of laundering, cleaning, or dyeing services other than those classified as personal services. Typical uses include bulk laundry and cleaning plants, diaper services, or linen supply services.
130. “LED” means Light Emitting Diode.
131. “Light Industry” means establishments engaged in the manufacture or processing of finished products from previously prepared materials, including processing, fabrication, assembly, treatment, and packaging of such products, and incidental storage, sales, and distribution. These establishments are characterized by having no major external environmental effects across property lines and include no unscreened or un-enclosed outdoor storage. Typical uses include commercial bakeries, dressed beef processing plants, soft drink bottling, apparel assembly from fabrics, electronics, manufacturing, print shops, and publishing houses.
132. “Lighting” means “electric,” “man-made,” or “artificial” lighting. See “Lighting Equipment.”
133. “Lighting Equipment” means equipment specifically intended to provide gas or electric illumination, including but not limited to, lamp(s), luminaire(s), ballast(s), poles, posts, lens(s), and related structures, electrical wiring, and other necessary or auxiliary components.
134. “Lighting Zone” means a lighting category establishing legal limits for lighting for particular parcels, areas, or districts in a community.
135. “Light Trespass” means light that falls beyond the property it is intended to illuminate.
136. “Liquor Sales” means establishments or places of business engaged in retail sale for off-premises consumption of alcoholic beverages. Typical uses include liquor stores, bottle shops, or any licensed sales of liquor, beer, or wine for off-site consumption.
137. “Lodging” means lodging services involving the provision of room and/or board, but not meeting the classification criteria of bed and breakfasts. Typical uses include the following definitions:
- a. “Extended Stay Hotel or Motel” means any structure consisting of one or more buildings, with more than five specific dwelling units with provisions for living, eating, contain kitchen facilities for food preparation including, but not limited to, refrigerators, stoves and ovens, sanitation, separate bathroom and kitchen sink, and sleeping in each unit, that is specifically constructed, kept, used, maintained,

advertised, and held out to the public to be a place where temporary residence is offered for pay to persons, for a minimum stay of more than thirty days and a maximum stay of ten months within the dwelling units at the structure, that is approved pursuant to a valid certificate of occupancy issued by the building official having jurisdiction as having all of the required dwelling unit features, and for which such valid certificate of occupancy indicates the specific rooms within the structure that can be used as dwelling units, and that is approved by the Fire Marshal for extended stay temporary residence purposes. Each room shall be a minimum of 275 square feet in area, exclusive of bathroom, closet, or balcony space. Weekly services for each dwelling unit of linen change, towel change, soap change, general cleanup, and a registration lobby staffed on a 12-hour daily basis and 24-hour daily registration and emergency phone number are provided by the management. Each extended stay dwelling unit and facilities are subject to the City's rental inspection outlined in Chapter 156 of this Code of Ordinances (Rental Housing Code). For the purposes of parking requirements, extended stay hotels or motels will have to meet the Multi-Family Residential parking requirements.

- b. "Hotel" means one or more buildings containing 20 or more guest rooms, with such rooms being designed or intended to be used, or which are used as temporary or overnight accommodations for guests in which daily services of linen change, central telephone switchboard, towel change, soap change, general cleanup, and a registration lobby staffed on a 24-hour daily basis are provided by the management. Each room shall be a minimum of 250 square feet in area, exclusive of bathroom, closet, or balcony space. No room may be used by the same person or persons for a period exceeding 30 days per year. Access to all rooms shall be provided through one or more common entrances. Accessory uses are encouraged and permitted accessory uses include restaurants, cocktail lounges, banquet halls, ballrooms, or meeting rooms.
 - c. "Motel" means a building or group of buildings containing dwelling units, intended to be used or which are used as temporary or overnight accommodations for guests, in which daily services of linen change, central telephone switchboard, towel change, soap change, general cleanup, and a registration lobby staffed on a 12-hour daily basis and 24-hour daily registration and emergency phone number are provided by the management. Each room shall be a minimum of 250 square feet in area, exclusive of bathroom, closet, or balcony space. No room may be used by the same person or persons for a period exceeding 30 days per year. Each living or sleeping unit shall have an individual entrance from outside the building. Living or sleeping units may be equipped with cooking facilities. Parking close to the entrance of each living or sleeping unit should be made available.
- 138. "Illumination" means lighting sources installed for the primary purpose of lighting a specific sign or group of signs.
 - 139. "Interior Landscaped Area" means any landscaped area within a site exclusive of required perimeter landscaping.
 - 140. "Landfill" means the use of a site as a depository for solid wastes, including:

- a. Landfill (Non-Putrescible Solid Waste Disposal) is the use of a site as a depository for solid wastes that do not readily undergo chemical or biological breakdown under conditions normally associated with land disposal operations. Typical disposal material would include ashes, concrete, paving wastes, rock, brick, lumber, roofing materials, and ceramic tile.
 - b. Landfill (Putrescible and Non-Putrescible Solid Waste Disposal) is the use of a site as a depository for any solid waste except hazardous and toxic waste as defined by the Federal Environmental Protection Agency and/or the State of Iowa. Typical disposal material would include non-putrescible wastes and putrescible wastes such as vegetation, tree parts, agricultural wastes (garbage), and manure.
141. “Landscape Amenities” means living or non-living materials used to augment the beauty or usability of a landscaped area. Amenities may include (but are not limited to) additional vegetation, flower gardens, tables, sculptures, monuments, benches, gardens, banners, enhanced pavement, pedestrian plaza areas, fountains, and planters.
142. “Landscape Islands” means a raised unpaved area located within or protruding into a parking lot or the center, unpaved area of a cul-de-sac or traffic circle. The area of a landscape island is measured from the back of the curb to the back of curb.
143. “Landscape Pod” means a small individual unpaved area within a parking lot incorporated to provide locations for vegetation, thus increasing the aesthetic quality of the parking lot.
144. “Low Voltage Landscape Lighting” means landscape lighting powered at less than 15 volts and limited to luminaires having a rated initial luminaire lumen output of 525 lumens or less.
- 145.
146. “Loading Area” means an off-street area used for the loading or unloading of goods from a vehicle in connection with the use of the site on which such area is located.
147. “Lot” means a parcel of property with a separate and distinct number or other identifying designation which has been created, assigned, and recorded in the Office of the Polk County Recorder. Each individual lot is subject to the provisions of a particular Base Zoning District and shall have a minimum frontage of 20 feet, except as provided in an approved Planned Unit Development and/or Conservation Subdivision.
- a. “Lot, Corner” means a lot located at the junction of at least two streets, private ways or courts, or at least two segments of a curved street, private way or court, at which the angle of intersection is no greater than 135 degrees.
 - b. “Lot, Double Frontage” (also known as a “through lot”) means a lot, other than a corner lot, having frontage on two streets, private ways, or courts. Primary access shall be restricted on a double frontage lot to the minor of the two streets or to the front line as determined at the time of platting or as defined by this Zoning Code.
 - c. “Lot, Interior” means a lot other than a corner lot.
 - d. “Lot, Common Development” means a lot which is considered a single lot for the purposes of this Zoning Code, when two or more contiguous lots are developed as part of a Planned Unit Development.
148. “Lot Area” means the total horizontal area within the lot lines of a lot.

149. “Lot Depth” means the mean or average horizontal distance measured between the front and rear lot lines.
150. “Lot Line” means a property boundary line of record that divides one lot from another lot or a lot from the public or private street right-of-way or easement. Once established, lot lines may not be redefined due to a change of address which would result in a new definition of the prior defined lot lines.
- a. “Lot Line, Front” means the lot line separating a lot and a public or private street right-of-way or easement:
 - i. In the case of an Interior Lot, the front lot line is the line separating the lot from the right-of-way or easement;
 - ii. In the case of a Corner Lot, the front lot line is the shorter lot line abutting a public or private street or easement. In instances of equal line dimension, the front lot line shall be determined by the Building Official, or as may be noted on the final plat.
 - iii. In the case of a Double Frontage lot, the front lot line is the line separating the lot from the right-of-way or easement of the more minor street. In cases where each street has the same classification, the front lot line shall be determined by the Building Official at the time of application for the original building permit for the lot, or as may be noted on the final plat.
 - b. “Lot Line, Rear” means the lot line which is opposite and most distant from the front line.
 - c. “Lot Line, Side” means any lot line that is neither a front nor rear lot line. A side lot line separating a lot from a street, private way, or court is a street side lot line. A side lot line separating a lot from another lot or lots is an interior side lot line.
151. “Lot Width” means the horizontal distance measured between the side lot lines of a lot, at right angles to its depth along a straight line parallel to the front lot line at the minimum required setback line.
152. “Lumen” means the unit of measure used to quantify the amount of light produced by a lamp or emitted from a luminaire (as distinct from “watt,” a measure of power consumption).
153. “Luminaire” means the complete lighting unit (fixture), consisting of a lamp, or lamps and ballast(s) (when applicable), together with the parts designed to distribute the light (reflector, lens, diffuser), to position and protect the lamps, and to connect the lamps to the power supply.
154. “Luminaire Lumens” means luminaires with relative photometry per IES, it is calculated as the sum of the initial lamp lumens for all lamps within an individual luminaire, multiplied by the luminaire efficiency. If the efficiency is not known for a residential luminaire, assume 70%. For luminaires with absolute photometry per IES LM-79, it is the total luminaire lumens. The lumen rating of a luminaire assumes the lamp or luminaire is new and has not depreciated in light output.
155. “Lux” means the SI unit of illuminance. One lux is one lumen per square meter. 1 Lux is a unit of incident illuminance approximately equal to 1/10 footcandle.

156. “Main Entrance” means that entrance of the building which is most architecturally prominent and contains operable doors. If multiple entrances are equal, the entrance that faces the most used street.
157. “Maintenance Facilities” means a public facility supporting maintenance, repair, vehicular or equipment servicing, material storage, and similar activities including street or sewer yards, equipment service centers, and similar uses having characteristics of commercial services or contracting or industrial activities.
158. “Manufactured Home Dwelling” means a factory-built, single-family dwelling structure which is to be used as a place for human habitation, which is manufactured or constructed under the authority of 42 U.S. 3. Sec. 5403, Federal Manufactured Home Construction and Safety Standards, and which is not constructed or equipped with a permanent hitch or other device allowing it to be moved other than to a permanent site, and which does not have permanently attached to its body or frame any wheels or axles. A mobile home constructed to the National Manufactured Home Construction and Safety Standards promulgated by the US Department of Housing and Urban Development is not a manufactured home unless it has been converted to real property and is taxed as a site-built dwelling as is provided in the Code of Iowa, Section 435. For the purpose of any of these regulations, a manufactured home shall be considered the same as a single-family detached dwelling.
159. “Manufactured Home Residential” means the use of a site for one or more manufactured home dwellings.
160. “Medical Offices” means the use of a site for facilities which provide diagnoses and outpatient care on a routine basis, but which do not provide prolonged, in-house medical or surgical care. Medical offices are operated by doctors, dentists, or similar practitioners licensed for practice in the State of Iowa.
161. “Mixed Use” means a single building containing two or more types of land uses; or a single development of more than one building and use, where the different types of land uses are in close proximity, planned as a unified complementary whole, and functionally integrated to the use of shared vehicular and pedestrian access and parking areas.
162. “Mixed Use Development” means a single development which incorporates complementary land use types into a single development.
163. “Mobile Home” means a building type designed to be transportable in one or more sections, constructed on a permanent chassis or undercarriage, and designed to be used as a dwelling unit or other use with or without a permanent foundation when connected to the required utilities, but not bearing a seal attesting to the approval and issuance of the Iowa Department of Health or conformance to the Manufactured Home Procedural and Enforcement Regulations, as adopted by the US Department of Housing and Urban Development; or not otherwise satisfying the definition of “manufactured home dwelling.”
164. “Mobile Home Park” means a unified development under single ownership, developed, subdivided, planned, and improved for the placement of mobile home units for non-transient use. Mobile home parks include common areas and facilities for management, recreation, laundry, utility services, storage, storm shelter, and other services; but do not include mobile home sales lots on which unoccupied mobile homes are parked for the purposes of display, inspection, sale, or storage.

165. “Modular Housing Unit” means a factory-built structure that is manufactured in components. They must comply with the Iowa State Building Code for modular factory-built structures.
166. “Motel” see “Lodging.”
167. “Mounting Height” means the height of the photometric center of a luminaire above grade level.
168. “Nonconforming Development” means a building, structure, or improvement which does not comply with the regulations for its zoning district set forth by this Zoning Code, but which complied with applicable regulations at the time of construction. No action can be taken which would increase the nonconforming characteristics of the development.
169. “Nonconforming Lot” means a lot which was lawful prior to the adoption, revision, or amendment of this Zoning Code but that fails by reason of such adoption, revision, or amendment to conform to the present requirements of this Zoning Code. No action can be taken which would increase the nonconforming characteristics of the lot.
170. “Nonconforming Structure” means a structure which was lawful prior to the adoption, revision, or amendment of this Zoning Code but that fails by reason of such adoption, revision, or amendment to conform to the present requirements of this Zoning Code. No action can be taken which would increase the nonconforming characteristics of the structure.
171. “Nonconforming Use” means a land use which was lawful prior to the adoption, revision, or amendment of this Zoning Code but that fails by reason of such adoption, revision, or amendment to conform to the present requirements of this Zoning Code. No action can be taken which would increase the nonconforming characteristics of the land use.
172. “Nuisance” means an unreasonable and continuous invasion of the use and enjoyment of a property right which a person would find annoying, unpleasant, obnoxious, or offensive.
173. “Object” means a permanent structure located on a site. Objects may include statues or artwork, garages or canopies, outbuildings, etc.
174. “Object Height” means the highest point of an entity but shall not include antennas or similar structures.
175. “Open Space” means any area within a single site or lot that is not covered by a building, structure, parking lot, or driveway. Sidewalks and patios may be counted as open space. Open space is an area which serves the need for leisure, recreation, or pedestrian interaction. Spaces may include (but are not limited to) plaza areas, open lawn areas, trails, recreation facilities, gardens, and pedestrian walkways.
176. “Outdoor Lighting” means lighting equipment installed within the property line and outside the building envelopes, whether attached to poles, building structures, the earth, or any other location; and any associated lighting control equipment.
177. “Outdoor Storage” means the storage of materials, parts, or products that are related to the primary use of a site for a period exceeding three days.
178. “Overlay District” means a district established by this Zoning Code to prescribe special regulations to be applied to a site only in combination with a Base Zoning District.
179. “Owner” means an individual, firm, association, syndicate, partnership, or corporation having sufficient proprietary interest to seek the development of land.

180. “Parapet” means a low, solid, protective screening or decorative wall, often used around a balcony, or along the edge of a roof to screen roof equipment.
181. “Park and Recreation Services” means publicly owned and operated parks, playgrounds, recreation facilities, and open spaces.
182. “Parking Facility” means an area on a lot and/or within a building, including one or more parking spaces, along with provision for access circulation, maneuvering, and landscaping, meeting the requirements of this Zoning Code. Parking facilities include parking lots, private garages, and parking structures. Vehicle storage is distinct from parking and is regulated by provisions of Chapter 174 – Access & Parking.
183. “Parking Space” means an area on a lot and/or within a building, intended for the use of temporary parking of a personal vehicle. This term is used interchangeably with “parking stall.” Each parking space must have a means of access to a public street. Tandem parking stalls in single-family detached, single-family attached, and townhouse residential uses shall be considered to have a means of access to a public street.
184. “Parking Structure” means the use of a site for a multi-level building which provides for the parking of motor vehicles on a temporary basis, other than as an accessory to a principal use on the same site.
185. “Partly Shielded Luminaire” means a luminaire with opaque top and translucent or perforated sides, designed to emit most light downward.
186. “Paved” means permanently surfaced with poured concrete, concrete pavers, masonry units, brick, or asphalt.
187. “Pawn Shop” means the location at which or premises upon which a pawnbroker regularly conducts business. Pawnbroker is defined in Chapter 124 of this Code of Ordinances.
188. “Pawnbroker” means a person or individual, group of individuals, partnership, association, corporation, or any other business unit or legal entity who for a fee:
- a. Accepts a check, draft, share draft, or other instrument for the payment of money dated subsequent to the date it was written.
 - b. Accepts a check, draft, share draft, or other instrument for the payment of money dated on the date it was written and holds it for a period of time prior to deposit or presentment pursuant to an agreement with, or any representation made to, the maker of the check, draft, or other instrument whether express or implied.
189. “Pedestrian Hardscape” means stone, brick, concrete, asphalt, or other similar finished surfaces intended primarily for walking, such as sidewalks and pathways.
190. “Pet Services” means pet health services and grooming and boarding, when totally within a building, of dogs, cats, birds, fish, and similar small animals customarily used as household pets. Typical uses include pet stores, small animal clinics, dog bathing and clipping salons, and pet grooming shops, but exclude uses for livestock and large animals.
191. “Perimeter Landscaped Area” means any required landscaped area that adjoins the exterior boundary of a lot, site, or common development.
192. “Pedestrian Style or Scale” or “Human Scale” means the establishment of appropriate proportions for building mass and features in relation to pedestrians and the surrounding context.

193. "Permitted Use" means a land use type allowed as a matter of right in a zoning district, subject only to special requirements of this Zoning Code.
194. "Photoelectric Switch" means a control device employing a photocell or photodiode to detect daylight and automatically switch lights off when sufficient daylight is available.
195. "Planning Commission" means the Planning and Zoning Commission of the City, as authorized pursuant to Chapter 414 of the Code of Iowa.
196. "Planned Unit Development" means a development of land which is under unified control and is planned and developed as a whole in a single development operation or programmed series of development stages. The development may include streets, circulation ways, utilities, buildings, open spaces, and other site features and improvements.
197. "Plaza" means a public square or an open space.
198. "Porch, Unenclosed" means a roofed or unroofed open structure projecting from an exterior wall of a building and having no enclosed features more than 30 inches above its floor other than wire screening and a roof with supporting structure.
199. "Postal Facilities" means postal services, including post offices, bulk mail processing, or sorting centers operated by the United States Postal Service.
200. "Premises" means a lot, parcel, tract, or plot of land, contiguous and under common ownership or control, together with the buildings and structure thereon.
201. "Primary Educational Facilities" means a public, private, or parochial school offering instruction at the elementary school level in the branches of learning study required to be taught in schools within the State of Iowa.
202. "Private Garage" means a building for the storage of motor vehicles where no repair service facilities are maintained and where no motor vehicles are kept for rental or sale.
203. "Property Line" see "lot line."
204. "Public Assembly" means facilities owned and operated by a public agency or a charitable nonprofit organization accommodating the public for recreation, sports, amusement, religious worship, religious education, or entertainment purposes. Typical uses include civic or community auditoriums, sports stadiums, convention facilities, fairgrounds, incidental sales, and exhibition facilities.
205. "Recreational Vehicle" means a vehicle towed or self-propelled on its own chassis or attached to the chassis of another vehicle and designed or used for temporary dwelling, recreational, or sporting purposes. Recreational vehicles include (but are not limited to) travel trailers; campers; motor coach homes; converted buses and trucks, snowmobiles, boats, and boat trailers.
206. "Regulation" means a specific requirement set forth by this Zoning Code which must be followed.
207. "Relative Photometry" means photometric measurements made of the lamp plus luminaire, adjusted to allow for light loss due to reflection or absorption within the luminaire. Reference standard: IES LM-63.
208. "Research Services" means establishments primarily engaged in research of an industrial or scientific nature. Typical uses include electronics research laboratories, space research and development firms, testing laboratories, or pharmaceutical research labs.

209. “Restaurant, Drive-In or Fast-Food” means an establishment whose principal business is cooking and preparation of food to sell for consumption within a motor vehicle parked on the premises or within the restaurant building, or any combination thereof, and whose principal method of operation includes the following characteristics as contrasted to a standard restaurant; designed to attract and depend upon a large volume of customers; limited, relatively low-cost menu items; quick-order service at a window or counter, from where the customer generally carries the food to another counter or table for consumption; and most food is served in or on paper, plastic or other disposable containers; and any other restaurant not defined as a standard restaurant.
210. “Restaurant, General” means an establishment whose principal business is cooking and preparation of food to sell for consumption within the restaurant building and whose principal method of operation is characterized by customers being seated by a restaurant employee and provided with an individual menu, and who are served by a restaurant employee at the same table or counter at which food and beverages are consumed; also including cafeteria line service offering a wide selection of main courses and other menu items, including restaurants with limited drive-thru service to customers in a motor vehicle. Delicatessens, establishments whose principal business is the sale of pizza or of ice cream, yogurt, coffee, or milk products are specifically included in the definition.
211. “Residential” means the use of a site for one or more dwelling units.
- a. “Residential, Single-Family Detached” means a single-family residential use in which one dwelling unit is located on a single lot, with no physical or structural connection to any other dwelling unit.
 - b. “Residential, Townhomes” means a townhome residential use with six or more units, in which the dwelling units have a common wall with or abutting one or more adjacent dwelling units in a townhouse structure, with its own front and rear access to the outside, and neither above nor below any other dwelling unit.
 - c. “Residential, Accessory Dwelling Unit” means a non-principal dwelling unit that is separate from the principal dwelling.
 - d. “Residential, Duplex” means a residential use with two dwelling units contained within the same structure. Units do not have to contain a common wall and may be above or below each other.
 - e. “Residential, Multi-Family” means a residential use with more than three units on a single lot in which all units do not contain at least one common wall with another unit. Units do not have to contain a common wall and may be above or below each other. Also known as Residential, Multiple-Family.
 - f. “Residential, Downtown” means the use of upper levels above the street level of a building within the Urban Center District of the City for single- or multiple-family residential uses.
212. “Retirement Residence” means a building or group of buildings which provide residential facilities for four or more residents of at least 50 years of age, or households headed by a householder of at least 50 years of age. A retirement residence may provide a range of residential building types and may also provide support services to residents, including (but not limited to) food service, general health supervision, medication services, housekeeping services, personal services, recreation facilities, and transportation services. The retirement residence may accommodate food preparation in independent

units or meal service in one or more common areas. Retirement residences with more than 50 living units may include additional health care supervision or nursing care, provided that the number of beds for such residences shall not exceed 25% of the total number of individual living units. Typical uses include continuing care retirement centers.

- 213. “Recycling Collection” means any site which is used in whole or part for the receiving or collection of any post-consumer, non-durable goods including (but not limited to) glass, plastic, paper, cardboard, aluminum, tin, or other recyclable commodities.
- 214. “Recycling Processing” means any site which is used for the processing of any post-consumer, non-durable goods including (but not limited to) glass, plastic, paper, cardboard, aluminum, tin, or other recyclable commodities.
- 215. “Resource Extraction” means a use involving on-site extraction of surface or subsurface mineral products or natural resources, excluding the grading and removal of dirt. Typical uses are quarries, borrow pits, sand and gravel operations, and mining.
- 216. “Right-of-Way” means an area dedicated for public use or contained in an easement or other conveyance or grant to the City, including (but not limited to) streets, alleys, boulevards, sidewalks, public greenways, and other public property between the lateral property lines in which a roadway lies.
- 217. “Roof Line” means the top of the exterior wall on buildings without a pitched roof. On pitched roof buildings, it means the ridgeline of the roof.
- 218. “Safety Services” means facilities for the conduct of public safety and emergency services including police and fire protection services and emergency medical and ambulance services.
- 219. “Salvage Services” means places of business primarily engaged in the storage, sale, dismantling, or other processing of used or waste materials which are not intended for reuse in their original forms. Typical uses include automotive wrecking yards, junk yards, or paper salvage yards.
- 220. “Screening” means the method by which a view of one site from another adjacent site is shielded, concealed, or hidden. Screening techniques include fences, walls, hedges, berms, or other features as may be permitted by the landscape provisions of this Code.
- 221. “Seasonal Lighting” means temporary lighting installed and operated in connection with holidays or traditions.
- 222. “Secondary Educational Facilities” means a public, private, or parochial school offering instruction at the junior high or high school level in the branches of learning and study required to be taught in the schools of the State of Iowa.
- 223. “Setback” means the distance, as required by the minimum setback, which establishes the horizontal component of the building envelope.
- 224. “Shielded Directional Luminaire” means a luminaire that includes an adjustable mounting device allowing aiming in any direction and contains a shield, louver, or baffle to reduce direct view of the lamp.
- 225. “Short Term Vacation Rental (STVR)” means a lodging service that provides overnight or short-term accommodations to guests and visitors. For the purpose of this definition, STVRs are always owned and operated by the resident owner of the structure and accommodate each guest or visitor for no more than 14 consecutive days during any one-month period. For the purpose of this definition, the lodging service must be approved

by a national accommodation service such as Airbnb, VRBO, or other similar service. To be used as an STVR, property owners shall reside at the residence a minimum of 180 calendar days per year.

226. “Shrub” means a small woody plant generally less than 12 feet in height that is either deciduous or evergreen.
227. “Sign” is any device, display, or structure that is visible from a public place and that has words, letters, figures, designs, symbols, logos, illumination, or projected images. This definition does not include architectural elements incorporated into the structure or façade of a building. For the purposes of this sign code, “signs” do not include those only visible from the inside of a building or athletic field/stadium; nor do “signs” include those held by or attached to a person. Sign regulations are set forth in Chapter 175 of this Zoning Code.
- a. “Sign, Abandoned” means a sign, including sign face and supporting structure, which refers to a discontinued business, profession, commodity, service, or other activity or use formerly occupying the site; or which contains no sign copy on all sign faces for a continuous period of six months.
 - b. “Sign, Attached” means a sign which is structurally connected to a building or depends upon that building for support.
 - c. “Sign, Auxiliary Design Elements” means terms which describe secondary characteristics of a sign, including its method of illumination and other features within the bounds of its basic shape.
 - d. “Sign, Awning” means a temporary or movable shelter supported entirely from the exterior wall of a building and composed of non-rigid materials, except for a supporting framework. An awning sign is a message printed on such a shelter.
 - e. “Sign, Banner” means material with a printed message or graphic secured or mounted from a structure in such a way as to allow wind movement under which pedestrian or vehicle traffic passes but does not include signs or materials under which peoples or traffic do not pass, such as that tied or secured within or to a window or porch opening, or tied or secured flush against a building.
 - f. “Sign, Billboard” means a freestanding sign that is at least 14 feet by 30 feet.
 - g. “Sign, Detached” means a sign which is self-supporting and structurally independent from any building.
 - h. “Sign, Directional” means a sign which serves only to designate the location or direction of any area or place.
 - i. “Sign, Double-Faced” means a sign consisting of no more than two parallel faces supported by a single structure.
 - j. “Sign, Electronic Changeable Copy” means a sign or portion thereof with characters, letters, or illustrations that can be changed or rearranged manually without altering the face or surface of the sign.
 - k. “Sign, Ground” means a detached on-premises sign built on a freestanding frame, mast, or pole with a clearance no greater than 3 feet.
 - l. “Sign, Marquee” means a permanent roofed structure attached to and supported by a building and extending over the public right-of-way.
 - m. “Sign, Maximum Permitted Area” means the maximum permitted combined area of all signs allowed on a specific property.

- n. “Sign, Monument” means an on-premises freestanding sign with the appearance of a solid base. The base shall be at least 75% of the sign.
 - o. “Sign, Moving” means a sign which conveys its message through rotating, changing, or animated elements.
 - p. “Sign, Nonconforming” means a sign that was legally erected prior to the adoption, revision, or amendment of this Zoning Code but that fails by reason of such adoption, revision, or amendment to conform to the present requirements of this Zoning Code. No action can be taken which would increase the nonconforming characteristics of the sign.
 - q. “Sign, Pole” means an on-premises sign, including any flag, built on a freestanding frame, mast, or pole with a clearance greater than 3 feet, and where the support encompasses less than 75% of the width of the sign.
 - r. “Sign, Portable” means any sign supported by frames or posts rigidly attached to bases not permanently attached to the ground or a building and capable of being moved from place to place.
 - s. “Sign, Roof” means any sign or part of a sign erected upon, against, or directly above a roof or on top of or above the parapet or cornice of a building.
 - i. “Integral roof sign” means a roof sign positioned between an eave line and the peak or highest point on a roof, substantially parallel to the face of a building.
 - ii. “Above-peak roof sign” means a roof sign positioned above the peak of a roof or above a parapet or cornice.
 - t. “Sign, Sidewalk” means a portable sign that is placed on the sidewalk close to an establishment. These are traditionally in the shape of an “A” or an inverted “T.”
 - u. “Sign, Temporary” means a sign constructed of cloth, canvas, vinyl, paper, plywood, fabric, plastic, or other lightweight material that is neither permanently installed in the ground nor permanently affixed to a building or structure that is permanently installed in the ground, and which is intended to be displayed less 60 than days. The term “temporary sign” includes, but is not limited to, A-frame signs, lawn signs, banners, and inflatable signs. The term “temporary sign” does not include flags and signs that are intended to regularly move, such as a moving sign.
 - v. “Sign, Wall” means a sign attached to and parallel with the side of a building, including works of graphic art painted or applied to building walls.
 - w. “Sign, Window” means a sign painted on or installed inside a window for the purpose of viewing from outside the premises. Window signs do not include messages, signs, or speech hung from or exercised in the interior of the home which are visible from the exterior of the home. Residents may elect for window signs to count towards residential signs or temporary signs.
228. “Sign Area” means the area of the surface of the sign to be measured.
- a. “Signs on a background” require the entire area of the framework or background of the sign.
 - b. “Sign with a base” require the background not including the base.

- c. “Individually mounted letters or features” requires a rectangle that would encompass each word or feature.
 - d. “Signs with two faces” requires the larger of two faces to be measured.
 - e. “3-D signs” requires 50% of a rectangular prism that encompasses the object.
- 229. “Site” means the parcel of land to be developed or built upon. A site may encompass a single lot or a group of lots developed as a common development under the special and overlay districts provisions of this Zoning Code.
- 230. “Site Plan” means a plan, prepared to scale, showing accurately and with complete dimensioning, the boundaries of a site and the location of all buildings, structures, uses, and principal site development features proposed for a specific parcel of land, and which includes any other information that may reasonably be requested by the City in order that an informed decision can be made on the associated request.
- 231. “Small Wind Energy System” means a wind energy conversion system consisting of a wind turbine, a tower, and associated control or conversion electronics, which has a rated capacity of not more than 100 kilowatts (kW), and which is intended to primarily reduce on-site consumption of utility-supplied electricity.
- 232. “Surplus Sales” means businesses engaged in the sale of used or new items, involving regular, periodic outdoor display of merchandise for sale. Typical uses include flea markets and factory outlets or discount businesses with outdoor displays.
- 233. “Story” means the portion of a building included between the surface of any floor and the surface of the next floor above it or, if there is no floor above it, the space between such floor and the next ceiling above it. A half story is a story under a sloped roof, the wall heights of which on at least two opposite exterior walls are less than four feet.
- 234. “Street” means a right-of-way dedicated to public use, which affords a primary means of access to the abutting property. This definition is intended to be inclusive of the term as defined in Iowa statutes.
 - a. In regard to a site, the principal street shall be the street to which the majority of lots on a blockface are oriented;
 - b. The intersecting street shall be a street other than a principal street.
- 235. “Street, Local” means a street which is used primarily for access to the abutting properties.
- 236. “Street, Major” means a street carrying traffic between neighborhoods, connecting neighborhoods with major activity centers, or accommodating major through traffic. Major streets are designated as collectors, arterials, or expressways by the Comprehensive Plan.
- 237. “Street Façade” means any separate external face of a building, including parapet walls and omitted wall lines, oriented to and facing a public street, private way, or court. Separate faces oriented in the same direction or within 45 degrees of one another are considered part of the same street façade.
- 238. “Streetscape” means a combination of vegetation, amenities such as bike racks, and special visual features along either side of vehicular travel lanes for the purpose of aesthetics or shade.
- 239. “Structure” means any object constructed or built, the use of which requires location on the ground or attachment to something located on the ground.

240. “Temporary Use” means a conduct of an activity or the performance of a function or operation on a site or in a building or facility that is not intended to be permanent.
- a. “Temporary Use (Short-term)” means a short-term use with a maximum duration of four consecutive days or less.
 - b. “Temporary Use (Long-term)” means a long-term use in duration of more than four consecutive days but less than six months.
241. “Temporary Structure” means any shed, structure, building, trailer, tent, or enclosure of any kind used for storage, commercial, business, or residential purposes which any person or business intends to place on the same lot with or on any lot immediately adjacent to, any permanent structure used for business or commercial or residential purposes. This term includes “Temporary Portable Storage Container,” which is defined as a large container designed and rented or leased for the temporary storage of commercial, industrial, or residential household goods and that does not contain a foundation or wheels for movement. All other words or phrases shall have the same meaning assigned to them in Chapter 166 of this Code of Ordinances.
242. “Time Switch” means an automatic lighting control device that switches lights according to the time of day.
243. “Tower Height” means the height above grade of the fixed portion of the tower, excluding the wind turbine itself.
244. “Total Extended Height” means the height above grade to a blade tip at its highest point.
245. “Trade Services” means establishments or places of business primarily engaged in the provision of services that are not retail or primarily dedicated to walk-in clientele. These services often involve services to construction or building trades and may involve a small amount of screened, outdoor storage in appropriate zoning districts. Typical uses include shops or operating bases for plumbers, electricians, or HVAC (heating, ventilating, and air conditioning) contractors.
246. “Translucent” means allowing light to pass through, diffusing it so that objects beyond cannot be seen clearly (not transparent or clear).
247. “Travel Way” means a pedestrian or automotive path.
248. “Transportation Terminal” means a facility for loading, unloading, and interchange of passengers, baggage, and incidental freight or package express, including bus terminals, railroad stations, and public transit facilities.
249. “Truck Terminal” means a facility for the receipt, transfer, short term storage, and dispatching of goods transported by truck.
250. “Turf Grass” means a surface layer of earth containing mowed grass with its roots.
251. “Unshielded Luminaire” means a luminaire capable of emitting light in any direction including downwards.
252. “Uplight” means for an exterior luminaire, flux radiated in the hemisphere at or above the horizontal plane.
253. “Use” means the conduct of an activity or the performance of a function or operation on a site or in a building or facility.
254. “Utilities” means any above-ground structure or facilities other than lines, poles, and other incidental facilities or installations, either above or below ground, necessary for the production, generation, transmission, delivery, collection, treatment, or storage of water,

- solid or fluid wastes, storm water, energy media, gas, electronic or electromagnetic signals, or other services which are precedent to development and use of land.
255. “Vehicle Use Area” means the area of a development subject to vehicle traffic, including access ways, loading and service areas, areas used for parking or storage of vehicles, boats, or portable construction equipment, and all land which vehicles cross over as a function of the primary use.
256. “Vertical Illuminance” means illuminance measured or calculated in a plane perpendicular to the site boundary or property line.
257. “Veterinary Services” means veterinary services and hospitals for animals. Typical uses include pet clinics, dog and cat hospitals, pet cemeteries, and veterinary hospitals for livestock and large animals.
258. “Vision Clearance Triangle” means a triangle with legs of 15 feet from the point at which the curbs or edges of two intersecting streets, private ways, or courts or an intersecting street, private way, or court and driveway, meet at grade.
259. “Warehousing” means uses including open-air storage, distribution, and handling of goods and materials, but not including storage of hazardous materials. Typical uses include monument yards or open storage.
260. “Yard, Required” means that portion of a lot which lies between a lot line and the corresponding building setback line or the required landscape area. This area shall be unoccupied and unobstructed from the ground upward except as may be specifically provided for or required by this Zoning Code.
- a. “Front Yard” means the space extending the full width of a lot, lying between the front lot line and the front setback line. For a corner lot, the front yard shall normally be defined as that yard along a street which meets one of the following two criteria:
 - i. The yard along the blockface to which a greater number of structures are oriented; or
 - ii. The yard along a street that has the smaller horizontal dimension.
 - b. “Rear Yard” means the space extending the full width of a lot, lying between the rear lot line and the rear setback line.
 - c. “Interior Side Yard” means the space extending the depth of a lot from the front to rear lot lines, lying between the side yard setback line and the interior lot line.
 - d. “Street Side Yard” means, on a corner lot, the space extending from the front yard to the rear yard, between the street side yard setback line and the street side lot line.
261. “Zoned Lot” means a parcel of land in single ownership that is large enough to meet the minimum zoning requirements of its zoning district and can provide such yards and other open spaces that are required by the site development regulations.
262. “Zoning District” means a designated specified land classification, within which all sites are subject to a unified group of use and site development regulations set forth in this Zoning Code.

(Ch. 166 – Ord. 17-12 – Dec. 17 Supp.)

CHAPTER 168

ZONING CODE – ZONING DISTRICT REGULATIONS

168.01 Purpose	168.06 Interpretation of District Boundaries
168.02 Establishment of Districts	168.07 Vacation of Streets and Alleys
168.03 Application of Districts	168.08 Permitted Uses
168.04 Development Regulations	
168.05 Zoning Map	

168.01 PURPOSE.

This chapter presents the Zoning District Regulations. Zoning Districts are established in this Zoning Code to promote compatible land use patterns and to establish site development regulations appropriate to the purposes and specific nature of each district.

168.02 ESTABLISHMENT OF DISTRICTS.

The following base districts and overlay districts are hereby established. Table 168-1 displays the purposes of these districts.

<u>BASE ZONING DISTRICT</u>	<u>DISTRICT NAME</u>
R-1	Low Intensity Residential District
R-2	Urban Family Residential District
R-3	Multiple-Family Residential District
MH	Mobile Home Residential District
CC	Community Commercial District
UC	Urban Center District
LI	Limited Industrial District

<u>OVERLAY DISTRICT</u>	<u>DISTRICT NAME</u>
PUD	Planned Unit Development Overlay District
F	Floodplain/Floodway Overlay District

168.03 APPLICATION OF DISTRICTS.

A base district designation shall apply to each lot or site within the City and its planning jurisdiction. Each site must be in one base district. The Planned Unit Development and Floodplain/Floodway Overlay Districts may be applied to any lot or site or any portion thereof, in addition to any base district designation.

168.04 DEVELOPMENT REGULATIONS.

For each Zoning District: Purposes are set forth in Table 168-1; uses permitted are set forth in Table 168-2; and site development regulations are presented in Table 168-3. Supplemental regulations may affect specific land uses or development regulations in each zoning district. The applicable supplemental regulations are noted in Table 168-2.

168.05 ZONING MAP.

1. Adoption of Zoning Map. Boundaries of zoning districts established by this Zoning Code shall be shown on the Zoning Map maintained by the City Clerk. This map, together with all legends, references, symbols, boundaries, and other information, shall be adopted as a part of and concurrent with this Code. The Zoning Map shall be prominently displayed in the Council Chambers and/or an area accessible to the public at City Hall.

2. Changes to the Zoning Map. The Zoning Map may be changed by ordinance, following the procedure set forth by Chapter 177. Such changes shall be reflected on the Zoning Map. The Zoning Administrator shall keep a complete record of all changes to the Zoning Map. †

†See EDITOR'S NOTE at the end of this chapter for ordinances amending the zoning map.

168.06 INTERPRETATION OF DISTRICT BOUNDARIES.

The following rules shall apply in determining the boundaries of any zoning district shown on the Zoning Map.

1. Where district boundaries are indicated as approximately following lot lines, such lot lines shall be considered the district boundaries.

2. Where district boundaries are indicated as within street or alley, railroad, or other identifiable rights-of-way, the centerline of such rights-of-way shall be deemed the district boundary.

3. Where a district boundary divides a property, the location of the boundary shall be determined by the use of the scale appearing on the Zoning Map.

4. The City Council shall determine any other uncertainty regarding district boundaries not covered in this section.

168.07 VACATION OF STREETS AND ALLEYS.

Whenever a public street or alley is vacated, the zoning district adjoining each side of such right-of-way shall be extended out to the former centerline.

168.08 PERMITTED USES

Table 168-1 – Purposes of Zoning Districts

Symbol	Title	Purpose
R-1	Low Intensity Density Residential	This district is intended to provide for low to medium-density residential neighborhoods, characterized by single-family and two-family dwellings on moderately sized lots with supporting community facilities and urban services. Its regulations apply to established parts of Windsor Heights and to new areas which are developed to higher residential densities. Regulations are intended to minimize traffic congestion and to assure that density is consistent with the carrying capacity of infrastructure.

R-2	Urban Family Residential	This district is intended to provide for medium-density residential neighborhoods, characterized by single-family dwellings on small to moderately sized lots and low-density, multiple-family development. It provides special regulations to encourage innovative forms of housing development. It adapts to both established and newer neighborhoods, as well as transitional areas between single-family and multi-family neighborhoods. Its regulations are intended to minimize traffic congestion and to assure that density is consistent with the carrying capacity of infrastructure.
R-3	Multiple-Family Residential	This district is intended to provide locations primarily for residential multiple-family housing, with supporting and appropriate community facilities. It also permits some nonresidential uses such as offices through a special permit procedure, to permit the development of mixed-use neighborhoods.
MH	Mobile Home Residential	This district recognizes that mobile home development, properly planned, can provide important opportunities for affordable housing. It provides opportunities for mobile home development within planned parks or subdivisions, along with the supporting services necessary to create quality residential neighborhoods.
CC	Community Commercial	This district is intended for commercial facilities which serve the needs of markets ranging from several neighborhoods to the overall region. CC Districts are appropriate at major intersections, at the junction of several neighborhoods, or at substantial commercial sub-centers.
UC	Urban Center	This district recognizes the mixed-use character primarily along the University Avenue corridor, which is the principal route through central Windsor Heights. This district contains a combination of residential, commercial, and office uses and is known for its walkability and main street feel.
LI	Limited Industrial	This district is intended to reserve sites appropriate for the location of industrial uses with relatively limited environmental effects. The district is designed to provide appropriate space and regulations to encourage good quality industrial development while assuring that facilities are served with adequate parking and loading facilities.
Special and Overlay Districts: These districts may be applied to a parcel in combination with a Base Zoning District. Overlay Districts are intended to help the City manage development in areas that exhibit special characteristics or features that warrant a greater differentiation of standards. Special and Overlay Districts include:		
Planned Unit Development District		
Floodplain/Floodway District		
Specific purposes and standards for each Overlay District are detailed in Chapter 169: Special and Overlay Districts.		

Table 168-2 – Permitted Uses by Zoning District

Use Types	R-1	R-2	R-3	MH	CC	UC	LI
Administration	C	C	C	C	P	P	P
Adult Entertainment							C
Agricultural Sales/Service					C		P
Alternative Energy Production Devices	C	C	C	C	C		P
Amateur Radio Tower	P	P	P	P	P	P	P
Animal Production							C
Auto Rental/Sales					P		P
Auto Services					P	C	P
Bars					P	P	P
Bed and Breakfast	C	C	C		P	P	
Body Repair					C		P
Broadcasting Tower					C		C
Business Support					P	P	P
Business/Trade School					P	P	P
Cemetery	C	C	C				
Civic Organizations	C	C	C	C	P	P	
College/University	C	C	C	C	P	C	
Commercial Breeders							P
Commercial Recreation (General)					C	C	P
Commercial Recreation (Limited)					P	P	P
Communications Services					P	P	P
Construction Batch Plant							P
Construction Sales/Service					P		P
Construction Yards							C
Consumer Services					P	P	P
In-Patient Services	C	C	C	C	P	C	
Convenience Storage					C		P
Crop Production							
Cultural Services	C	C	P	P	P	P	P
Custom Manufacturing					C	C	P
Day Care (General)	C	C	P	C	P	P	C
Day Care (Limited)	P	P	P	P	P	P	C

Use Types	R-1	R-2	R-3	MH	CC	UC	LI
Pawn Shop							C
Detention Facilities							C
Emergency Residential	C	C	C	C	P	P	C
Equipment Rental/Sales							P
Equipment Repair							P
Family Home	C	C	P	C		P	
Financial Services			C		P	P	P
Firework Sales							P
Food Sales (Convenience)					P	C	
Food Sales (General)					P	C	
Food Sales (Limited)					P	P	
Funeral Services		C	C		P	P	
Gaming Facility					C	C	
General Industry							C
General Offices			C		P	P	P
General Retail (Large-Scale)					P	C	
General Retail (Small-Scale)					P	P	
Group Care Facility	C	C	P	C	P	P	C
Group Home	C	C	P	P	P	P	
Guidance Services			C		P	P	P
Health Care (Large-Scale)			C		C	C	C
Health Care (Small-Scale)		C	C		P	P	P
Heavy Industry							C
Horticulture					C		
Landfill (Putrescible)							C
Landfill (Non-Putrescible)							C
Laundry Services					P	C	P
Liquor Sales					P	P	
Light Industry							P
Lodging					P	P	
Maintenance Facility							P
Manufactured Housing Residential	P	P	P	P			

Use Types	R-1	R-2	R-3	MH	CC	UC	LI
Medical Offices			C		P	P	P
Mobile Home Park				C			
Off-Street Parking					C	C	P
Parking Structure					C	P	P
Parks/Recreation	P	P	P	P	P	P	P
Pet Services					P	C	P
Postal Facilities					P	P	P
Primary Education	P	P	P	P	P	P	
Public Assembly	P	P	P	P	P	P	
Railroad Facilities							P
Recycling Collection					C		P
Recycling Processing							C
Repair Services							P
Research Services					P	P	P
Residential, Accessory Dwelling Unit	C	P	P				
Residential, Downtown						P	
Residential, Duplex	C	P	P			P	
Residential, Multi-Family		C	P		C	P	
Residential, Single-Family Detached	P	P	P	P		P	
Residential, Townhouse		C	P		C	P	
Resource Extraction							C
Restaurants (Drive-In)					P	C	P
Restaurants (General)					P	P	C
Retirement Residential	C	C	P	C		C	
Safety Services	C	C	P	P	P	P	P
Salvage Services							C
Secondary Education	C	C	C	C	P	P	
Surplus Sales					C	C	P
STVR (Short Term Vacation Rental)	P	P	P	P	P	P	
Trade Services					P	C	P
Transportation Terminal					P	C	P
Truck Terminal							C

Use Types	R-1	R-2	R-3	MH	CC	UC	LI
Utilities	C	C	C	C	P	P	P
Vehicle Storage (Short-term)							P
Vehicle Storage (Long-term)							C
Veterinary Services					P	P	P
Warehousing							C

Note:

P = Uses Permitted by Right

C = Uses Permitted by Conditional Use permit approval according to Sec. 177.03.

Blank = Use Not Permitted

Table 168-3 – Summary of Site Development Regulations

Regulator	R-1	R-2	R-3	MH
Minimum Lot Area (square feet)	7,200	7,200	7,200	See Section 171.02
Minimum Lot Width (feet)	50	50	50	See Section 171.02
Minimum Yards (feet)				
Front Yard	25	25	25	See Section 171.02
Street Side Yard	25	25	25	See Section 171.02
Interior Side Yard	5	5	5	See Section 171.02
Rear Yard	15	15	15	See Section 171.02
Maximum Height (feet)				
Main Building	35	35	35	See

				Section 171.02
Accessory Building	25	25	25	See Section 171.02
Maximum Building Coverage	40%	50%	50%	See Section 171.02
Maximum Impervious Coverage	65%	65%	65%	50%
Maximum Residential Units Per Acre (du/ac)	7.5	10	20	20
Lighting Zone	LZ-1	LZ-1	LZ-2	LZ-2

Regulator	CC	UC	LI
Minimum Lot Area (square feet)	10,000	5,000	10,000
Minimum Lot Width (feet)	50	25	50
Minimum Yards (feet)			
Front Yard	15	0	25
Street Side Yard	15	0	25
Interior Side Yard	10	0	25
Rear Yard	20	10	25
Maximum Height (feet)			
Main Building	60	60	45
Maximum Building Coverage	60%	60%	70%
Maximum Impervious Coverage	80%	N/A	80%
Maximum Residential Units per Acre (du/ac)	20	50	0
Lighting Zone	LZ-3	LZ-3	LZ-2

EDITOR'S NOTE

The following ordinances have been adopted amending the Official Zoning Map described in Section 168.06 of this chapter and have not been codified herein, but have been specifically saved from repeal and are in full force and effect.

ORDINANCE NO.	DATE ADOPTED	ORDINANCE NO.	DATE ADOPTED
98-1	2-Feb-98		
99-2	5-Apr-99		
2-Jul	16-Jul-07		
3-Sep	6-Apr-09		
19-07	21-Oct-19		

(Ch. 168 – Ord. 17-11 – Dec. 17 Supp.)

CHAPTER 169

ZONING CODE – OVERLAY DISTRICTS

169.01 General Purpose 169.02 Planned Unit Development District

169.01 GENERAL PURPOSE.

Overlay Districts provide for base districts that allow multiple land uses and flexible development, with the requirement that a specific plan for the area be submitted by applicants. Overlay Districts are used in combination with base districts to modify or expand base district regulations. Overlay Districts are adapted to the special needs of different parts of the City. The Overlay Districts are designed to achieve the following objectives:

1. To recognize special conditions in specific parts of the City which require specific regulation.
2. To provide flexibility in development and to encourage innovative design through comprehensively planned projects.

169.02 PLANNED UNIT DEVELOPMENT DISTRICT.

The Planned Unit Development (PUD) Overlay District is intended to provide flexibility in the design of planned projects, to permit innovation in project design that incorporates open space and other amenities, and to ensure compatibility of developments with the surrounding urban environment. The PUD District may be used in combination with any base district specified in this Zoning Code. The PUD District, which is adopted by the City Council with the recommendation of the Planning and Zoning Commission, assures specific development standards for each designated project. All projects in the PUD District shall follow the procedures set forth in Chapter 170 of this Zoning Code.

1. Permitted Uses. Uses permitted in a PUD Overlay District are those permitted in the underlying base district.
2. Site Development Regulations. Site development regulations are developed individually for each Planned Unit Development District but must comply with minimum or maximum standards established for the base district, with the following exceptions:
 - A. Lot area and lot width are not restricted, provided that the maximum density allowed for each base district is not exceeded.
 - B. Maximum building coverage shall be the smaller of the allowed building coverage in the base district, or 60%.
3. Access to Public Streets. Each PUD District must abut a public street for at least 50 feet and gain access from that street.
4. Adoption of District.
 - A. The Planning and Zoning Commission and City Council shall review and evaluate each Planned Unit Development application. The City may impose reasonable conditions, as deemed necessary to ensure that a PUD shall be compatible with adjacent land uses, will not overburden public services and facilities, and will not be detrimental to public health, safety, and welfare.
 - B. The Planning and Zoning Commission, after proper notice, shall hold a public hearing and act upon each application.

C. The Planning and Zoning Commission may recommend amendments to PUD district applications.

D. The recommendation of the Planning and Zoning Commission shall be transmitted to the City Council for final action.

E. The City Council, after proper notice, shall hold a public hearing and act upon any ordinance establishing a Planned Unit Development Overlay District. Proper notice shall mean the same notice established for any other zoning amendment.

F. An ordinance adopting a Planned Unit Development Overlay Zoning District shall require a favorable simple majority of the City Council for approval.

G. Upon approval by the City Council, the Development Plan shall become a part of the ordinance creating or amending the PUD District. All approved plans shall be filed with the City Clerk.

5. Amendment Procedure. Major amendments to the Development Plan must be approved according to the same procedure set forth in Subsection 4 of this section.

6. Building Permits. The City shall not issue a building permit, certificate of occupancy, or other permit for a building, structure, or use within a PUD District unless it is in compliance with the approved Development Plan and any approved amendments.

7. Termination of PUD District. If no substantial development has taken place in a Planned Unit Development District for 18 months following approval of the District, the Planning Commission shall reconsider the zoning of the property and may, on its own motion, initiate an application for rezoning the property.

(Ch. 169 – Ord. 18-19 – Mar. 19 Supp.)

CHAPTER 170

ZONING CODE – DEVELOPMENT AND DESIGN STANDARDS

170.01 Purpose and Scope	170.05 Amendment
170.02 Development and Design Standards	170.06 Site Review Process
170.03 Jurisdiction	170.07 Site Plan Review Requirements
170.04 Validity of Approval	

170.01 PURPOSE AND SCOPE.

The purpose of this Ordinance is to provide guidance and standards for development within the City in order to guide development in a manner which is conducive to protecting the health, safety, and general welfare of residents and property owners within the City. All development and redevelopment of land or property within the City shall minimize adverse effects upon adjacent properties by maintaining or improving upon the aesthetic quality of a surrounding area, and by providing adequate pedestrian and traffic safety, emergency access, water supply, sewage disposal, management of stormwater, and erosion and sediment control. Site Plan review and approval by City Council shall be required for all principal structures other than individual single family detached, duplex, and parking lot as a primary use in any zoning district.

170.02 DEVELOPMENT AND DESIGN STANDARDS.

This section provides for the administration and enforcement of site plans, establishes standards for site and building design, and shall be known, referred to, and cited as the “Development and Design Standards” of the City of Windsor Heights, Iowa.

170.03 JURISDICTION.

No permit shall be issued for any lot or development requiring the approval of a Site Plan after the effective date unless it is in compliance with the provisions of the regulations of the Code of Ordinances. No development, except where specified within the Code of Ordinances, may be created, substantially improved, converted, enlarged, or otherwise altered without conforming to the provisions of this section, all applicable provisions of the Code of Iowa, as amended, and all applicable provisions of the Windsor Heights City Code, as amended.

170.04 VALIDITY OF APPROVAL.

A Site Plan shall become effective upon certification of approval by the City Council. The City Council’s approval of any Site Plan required by this Code of Ordinances shall remain valid for 1 year. A 1) year extension may be granted with the approval of the City Council. If development has not been established or construction commenced within 1 year, or 2 years in case of a received extension, the Site Plan shall be deemed null and void.

For the purpose of this chapter, “actual construction” shall mean that the permanent placement of construction materials and utility work has started and is proceeding without undue delay with an approved building permit. Preparation of plans, securing financial arrangements, issuance of building permits, letting of contracts, grading of property, or stockpiling of materials on the site shall not constitute actual construction. At the time of Site Plan approval, the City Council may

grant an exemption on the time construction shall begin after their approval is given for a utility service structure.

170.05 AMENDMENT.

Any Site Plan may be amended in accordance with the standards and procedures established herein, including payment of fees, provided that the Administrative Official may waive such procedures for those minor changes hereinafter listed. Such minor changes shall not be made unless the prior written approval for such changes is obtained from the Administrative Official. No fees shall be required for such minor changes.

Minor changes include, but are not limited to the following:

1. Moving building walls within the confines of the smallest rectangle that would have enclosed each original approved building(s);
2. Relocation of building entrances or exits;
3. Shortening of building canopies;
4. Changing to a more restrictive commercial or industrial use, provided the number of off-street parking spaces meets the requirement of the Windsor Heights Zoning Ordinance. This does not apply to residential uses;
5. The changing of the angle of parking or aisle provided there is no reduction in the amount of off-street parking as originally approved;
6. Substituting plant species provided a landscape architect, engineer or architect certifies the substituted species is similar in nature and screening effect.

170.06 SITE REVIEW PROCESS.

The Administrative Official is responsible for the established Site Plan and Site Review Process. The Administrative Official will serve as the Administrator of the Ordinance and the liaison between the applicant and reviewing bodies to ensure compliance with the Ordinance is met.

1. Notice and Hearings.
 - a. Public Hearing. Before submitting its recommendation on a Site Plan to the City Council, the Planning and Zoning Commission shall hold at least one public hearing thereon, notice of which will be given to all property owners within 200 feet whenever possible. Notice shall be published of said hearing in a newspaper of general circulation, as required by, and in conformance with, Iowa law. The notice shall state the place and time at which the proposed amendment to the Ordinance will be held as well as the legal description or address of said property.
2. Submission Requirements. The applicant shall submit a Site Review application and all associated fees with preliminary plans to the Planning Department. The Planning and Zoning Commission is required to review site plans and make a recommendation to the city council. Additionally, the applicant will provide:
 - a. Full name, address, and contact information of the applicant in a reproducible electronic format.
 - b. Full legal description of the property in a reproducible electronic format.
 - c. Name and address of all property owners within 200' of the proposed development in a reproducible electronic format.

3. Applicability. A Site Plan Review shall be required for the following:
 - a. New construction;
 - b. Major reconstruction (more than 30% of the exterior structure is affected);
 - c. Major renovation (more than 30% of the interior structure is affected);
 - d. Changes to parking (more than 30% of the existing area);
 - e. Any Development the Zoning Administrator deems is substantial enough to require oversight by the Planning Commission with Site Plan Review.
4. Pre-application Meeting. The applicant is required to attend a scheduled predevelopment meeting with City staff to review a conceptual Site Plan prior to the submittal of a full Site Plan. Following the predevelopment meeting, the applicant shall submit a complete Site Plan in accordance with the requirements of the Site Plan and any other information determined to be necessary for review at the Planning and Zoning Commission meeting.
5. Elevations. As part of the review process, an applicant shall provide colored architectural elevation drawings for each elevation of the building or buildings proposed for new construction, addition, alteration, or the like.
 - a. The elevation drawings should be provided in 11" by 17" format unless otherwise approved by the Administrative Official.
 - b. Each elevation drawing should include massing dimensions and callouts of the proposed materials indicated on the elevation.
 - c. In the event that accessory structures are proposed as a part of the site plan review process, the Administrative Official shall have the ability to request elevation drawings or colored details of said accessory structures to ensure compliance with the provisions of this ordinance.

170.07 SITE PLAN REVIEW REQUIREMENTS.

Site Plans shall be submitted in electronic format with the ability to provide physical copies sized 24" by 36" upon request by the Zoning Administer. A Site Plan will not be submitted to the Planning and Zoning Commission for action until it is deemed complete. The Administrative Official has the authority to deem the submittal complete. Review and comment by the Fire Inspector, Public Works, Engineer, and other Administrative Officials will be obtained before Planning and Zoning Commission review. It is permissible and encouraged to introduce large and potentially controversial projects to City staff as far in advance as possible.

The applicant shall provide City staff with information determined to be applicable to the project by the Administrative Official. The proposal shall then be brought before the Planning and Zoning Commission in order to receive a recommendation before being presented to the City Council. Action of the Planning and Zoning Commission and City Council shall be approval, approval subject to conditions, denial, or table for further review. A site plan may be presented for consideration by the City Council in the event of a recommendation of denial by the Planning and Zoning Commission. In the event of denial of a Site Plan by the City Council, the applicant would be required to resubmit and begin the review process anew to have another proposal considered by the Planning and Zoning Commission and City Council. Resubmittal will not be accepted until one (1) year after a denial from the Planning and Zoning Commission or City Council. Resubmittal of a Site Plan shall be subject to all applicable costs associated with a review of the documentation unless an exception is made by City staff. Site Plan review shall

exist as a measurement determined by the City to meet the objectives outlined by the Windsor Heights Comprehensive Plan.

The following information shall be clearly provided on the site plan:

1. Narrative Information to be provided:

- A. Name and address of property owner; including telephone and email.
- B. Name and address of applicant; provide if different than the property owner.
- C. Name and address of plan preparer; including telephone and email.
- D. Following City Council or administrative approval, the certification of the Architect and Civil Engineer licensed in the State of Iowa. Include seal, date, and signature on all applicable drawings prior to City Council approval of the Site Plan. Other certification may be requested when appropriate by the Administrative Official.
- E. Certification of a Registered Land Surveyor licensed in the State of Iowa. Include seal, date, and signature on applicable drawings prior to City Council Approval.
- F. Current Zoning of Property. List the property's existing zoning consistent with the City of Windsor Heights' Official Zoning Map. Include any overlay districts the property may be within and the land use identified in the current City of Windsor Heights Comprehensive Plan where the property is located.
- G. Legal Description of Site. Include the plat name and lot number for all new Site Plans.
- H. Total Area of Site. The total area of the site should be indicated in acres and square feet.
- I. Open Space.
 - (1) Indicate the total area of the proposed site in square feet, the area of open space within the site, and its percentage of the total site. The calculation should include all open space pervious areas and permitted pedestrian plazas.
 - (2) The total area of the site reserved for parking facilities, the open space within the defined parking area, and its percentages of the total parking area should be calculated and indicated in square feet.
- J. Pervious and Impervious Surface. Indicate the total area of the proposed site in square feet, the area of pervious surface, and the area of impervious surface including all structures.
- K. Proposed Use of Site. Indicate all proposed uses for the site and building(s) as known at the time of application.
- L. Parking Stalls. The total number of parking stalls required based on the proposed building use(s) of the site should be indicated. If more than one building use is proposed for the site, each individual parking stall requirement should be indicated separately of the total.
- M. Loading Areas. If applicable to the proposed building uses of the site, the number of required and provided loading stalls should be indicated.
- N. Setback Requirements. All setback requirements of the applicable zoning district within which the proposed site is located should be provided.
- O. Special Flood Hazard Area. The 100-year flood elevation should be indicated based on the most recent FEMA FIRM Map.

2. Plan Information.

- A. General and Survey Information.

- (1) North Arrow. Include on Site Plan and all other applicable sketches, drawings, and details.
- (2) Scale of Drawing. A minimum scale of 1" = 30' shall be required.
- (3) Vicinity Sketch. A minimum scale of 1" = 800' shall be used to indicate the properties within 300 feet of the proposed site location. The boundary of the proposed site location should be clearly defined in relation to other properties shown within the vicinity sketch.
- (4) Site Boundary. All property lines shall be delineated with a heavy line.
- (5) Bearing and Distances or Curve Data along Boundary. Information shall be indicated as platted. Any measured information different than platted should be identified.
- (6) Name and address of all Adjoining Property Owners. All property lines adjacent to the proposed site, or across street right-of-way, shall be indicated with the owner and/or subdivision name(s) in addition to any adjoining lot numbers, as appropriate.
- (7) Existing Features. All existing physical features shall be indicated on the Site Plan including but not limited to plant materials, drainage ways, structures, fences, and any encroachments. Projects involving numerous existing features may be requested to submit a demolition, removal, or relocation plan as determined to be most beneficial.
- (8) Soil Tests and Similar Information. Soil tests and similar information may be required to determine the feasibility of the proposed development in relation to the design standards set forth herein.
- (9) Topography. The existing and proposed topography shall be indicated with a maximum of two (2) foot intervals. Spot elevations may also be required at the request of the Administrative Official.
- (10) Limits of Phased Construction. If the site is to be developed in more than one phase, the limits of each proposed construction/development phase shall be indicated, including all facets of the phasing proposed.
- (11) Additional Information. Drawings or other materials necessary to describe a proposed project may be requested by the Planning and Zoning Commission or Administrative Official. The applicant may include additional information or materials such as sketches, videos, models, or photos if they help explain the proposal.

B. Building Footprint.

- (1) Footprint. An accurate representation of the proposed building(s) footprint(s), including exterior structures incorporated into the building mass and proposed internal demising walls known at the time of application.
- (2) Size. Include the total square footage of each proposed floor, the number of floors, and the amount of finished area on each floor including any proposed basement area. For all multi-family and townhome proposals, the total number of units proposed for each building footprint should be indicated.
- (3) Entryways. The location of all proposed entries, service doors, and overhead doors.
- (4) Mechanical Units. Indicate the proposed location and type of all proposed ground mechanical units including air conditioning units, telephone pedestals, transformers, coolers, or other similar units.
- (5) Trash Enclosures. Indicate the proposed location of all trash enclosures for the site and provide a detail of the structure for review.

C. Building Façade

- (1) Façade Material. Indicate the proposed materials on each building.
- (2) Façade Coverage. The percentage of the façade that each material covers will be indicated on the site plan and conform to design standards within the respective zoning district.

D. Pedestrian Circulation.

(1) Paths. All proposed sidewalks, trails, and pathways should be indicated as appropriate on the Site Plan including the width, thickness, and type of pavement. All sidewalks, trails, and pathways shall be constructed to Windsor Heights Standard Specifications as applicable to the project. Wherever possible, bike racks should be provided.

(2) Connectivity. Pedestrian corridors should be indicated from any public street to all proposed principal buildings.

(3) Stoops. All proposed emergency exits where a sidewalk is not indicated shall provide a stoop of an approved dimension determined to be adequate in providing a safe exit from the building.

E. Streets and Access.

(1) Access. All existing and proposed access drives to the site from a public street shall be indicated on the Site Plan and shall include appropriate spacing as determined by the City's Engineer.

(2) Public Improvements. All public improvements required of the developer shall be indicated on the site plan. The number of improvements required shall be determined by the Windsor Heights Comprehensive Plan, streetscape plan, a traffic impact analysis, or any other approved documentation identifying the amount and type of improvements necessary to accommodate increased activity to the site or to facilitate future development as it relates to the development of said site.

(3) Private Streets. The use of private streets may be allowed if the proposed private streets meet the following criteria:

a. Proposed private streets are built to Windsor Heights Standard Specifications for public streets.

b. They are maintained by the property owners requiring the private street(s) through a Homeowners Association or through an approved development agreement between the developer(s) and the City.

c. The width and thickness of the private street(s) are appropriate as determined by the City Engineer or a traffic impact study in accordance with the city specifications.

d. Sidewalks should be installed on both sides of the private street(s) unless additional landscaping or open space is incorporated into the site in an amount approved by the City Council in relief of one sidewalk per street.

e. A public ingress/egress easement is provided over the private street(s) location.

(4) Shared Access.

a. Any project where the development of townhomes provides access to garages from a public street shall provide a shared access drive between two or more units in order to minimize the amount of obstruction to the flow of traffic along said public street.

b. Any development of commercial property, where shared access is anticipated, shall provide an easement and conceptual building footprint(s) for all proposed lots which are proposed to share the access drive(s).

F. Parking and Loading Areas.

(1) All proposed parking and loading areas incorporated in the Site Plan shall meet the requirements in the Zoning Ordinance and all other applicable State and Federal regulations.

(2) A complete traffic circulation and parking plan should indicate the location and dimensions of all existing and proposed parking stalls, loading areas, entrance and exit drives, sidewalks, dividers, planters, and other similar permanent improvements in addition to traffic movements within access drives in order to better identify any potential traffic impediments based upon the proposed parking configuration and access drives.

(3) Individual parking stalls should be indicated as appropriate and differentiated from parking aisles. Stalls intended to accommodate handicapped accessibility should be indicated appropriately.

(4) Proposed loading areas and loading docks should indicate traffic movements where applicable to determine maneuverability within the site.

G. Lighting.

(1) A lighting plan should be provided with all site plans indicating the location, type, height, power rating, and any shielding methods required of all existing and/or proposed lighting fixtures. The lighting shall follow all applicable City ordinances including Dark-Sky standards. See Chapter 172.13 Lighting.

(2) A manufacturer's cut-sheet shall be provided for each type of lighting fixture incorporated into the site layout including its material(s) and color. Information required from the cut-sheet shall include the description of lamps, supports, reflectors, and any other components of a particular lighting fixture. The Site Plan shall indicate all proposed lighting as depicted by the manufacturer.

(3) A photometric plan shall also be required, identifying the horizontal illumination of the site and the vertical light trespass along the perimeter of the site. The photometric plan shall show a point-by-point foot-candle reading for the entire site at a minimum spacing of 10 feet between each point, including 2 feet past the property line. The vertical photometric plan shall only be required along the property line with a maximum spacing of 10 feet.

H. Lighting Standards.

(1) Definitions. Unless the context clearly indicates otherwise, the words and phrases used in this Ordinance shall have the following meaning:

a. Exterior lighting. Temporary or permanent lighting that is installed, located, or used in such a manner to cause light rays to shine outdoors.

b. Exterior lighting fixture. The complete exterior lighting unit, including the artificial source of light, the parts required to distribute the light, elements for light output control such as the reflector (mirror), or refractor (lens), the housing that protects and holds the light in place, the connection to the power supply, and the component that anchors the lighting unit to the ground or onto a structure.

c. Floodlight. A lamp that incorporates a reflector or a refractor to concentrate the light output into a directed beam in a particular direction.

d. Foot-candle. The illuminance measured one (1) foot from a one (1) candle source.

e. Full cut-off. A shielded light fixture that emits no light above a horizontal plane touching the lowest point of the fixture.

f. Glare. The light in a direction near one's line of sight that either causes discomfort to the eye or impairs visibility.

g. Horizontal and vertical foot-candles. The illuminance, measured by a light meter, striking a vertical or horizontal plane.

h. Illuminance. The intensity of light in a specified direction measured at a specified point.

i. Light. A form of radiant energy acting on the retina of the eye to make sight possible.

j. Light trespass. Unwanted light falling on public or private property from an external location.

k. Recreational Facility. Football fields, soccer fields, baseball fields, tennis courts, swimming pools, or any other special event or show area.

I. Lighting Design.

(1) Required Lamps – Generally, all lamps shall be halogen, metal halide, LED, or others with similar qualities to reduce glare and provide for improved color correct vision. Full cut-off high pressure sodium lamps, not exceeding a maximum lumen rating of 16,000 lumens, may be used in outdoor storage areas where the need for good color rendering capabilities for safety and security is not necessary. Such areas shall not be accessible to the general public or adjacent to R-1, R-2, & R-3 zoned property.

(2) Required Exterior Lighting Fixtures – All exterior lighting fixtures shall be full cut-offs. No portion of the lamp, lens, or diffuser shall be visible from the side or top of any shield, or otherwise protrude from the bottom of the shield. No exterior lighting fixture shall emit light at or above a horizontal plane that runs through the lowest point of the shield.

(3) Commercial and Industrial Architectural and Decorative Lighting.

a. Limited building-mounted lighting may be used to highlight specific architectural features or primary customer or building entrances. Floodlights are only permitted provided all light emitted is contained by the building or by an eave or protruding structure.

b. Lighting fixtures shall be located, aimed, and shielded to minimize the glare that is emitted on objects other than a building's façade or landscape walls.

c. Building-mounted neon lighting may only be used when the lighting is recessed or contained inside a cap or architectural reveal.

d. An exterior lighting fixture that emits less than 1800 lumens shall not be required to be a full cut-off fixture, provided that the lamp itself creates no glare or has an opaque covering.

(4) Site and Parking Lot Lighting.

a. The mounting height for lighting fixtures shall not exceed twenty-five feet (25') from grade to the top of the lighting fixture.

b. The maximum average-maintained foot-candles for a parking lot lighting fixture shall be three (3) foot-candles. The maximum lighting level for a parking lot lighting fixture shall be ten (10) foot-candles.

c. The maximum horizontal foot-candle measurement at any property line shall be two (2) foot-candles. The maximum maintained vertical foot-candle at an adjoining property line shall be two (2) foot-candles, as measured at five feet (5') above grade. If the adjacent property is the same owner, the light trespass limits may be waived by the City Council.

(5) Canopy Lighting. The maximum maintained foot-candles under a canopy shall be thirty-five (35) foot-candles. Areas outside the canopy shall be regulated by the guidelines and standards outlined above. Permissible fixtures for canopy lighting include:

a. Recessed fixtures that incorporate a lens cover that is either recessed or flush with the bottom surface of the canopy.

b. Indirect lighting where light is emitted upward and then reflected down from the underside of the canopy. Such fixtures shall be shielded to ensure that no light is emitted at or above a horizontal plane that runs through the lowest point of the canopy.

(6) Street Lighting. All private street light fixtures shall measure no more than thirty feet (30') from grade to the top of the lighting fixture and shall be cobra-style unless the Commission and Council permit the installation of an alternative fixture. The Commission and Council may approve an alternative lighting fixture only after a determination has been made that the alternative fixture has been designed to avoid glare and trespass. The use of lighting fixtures that direct light upward into the air is strictly prohibited. Public lighting along University Avenue shall conform to the specifications of lighting already in place. All other lighting on public streets shall conform to any adopted Streetscape Plans.

(7) Pedestrian Walkway Lighting. All pedestrian walkways shall be lit by pedestrian-level, bollard-type lighting (4 ft. height max.), ground mounted lighting, pole lighting (12 ft. height max.), or other low, glare-controlled fixtures that are mounted on building or landscape walls. University Avenue lighting should be followed as above.

(8) Recreational Facilities. The lighting fixtures at all public or private outdoor recreational facilities shall be designed to minimize the amount of light that is directed upward into the air, glare, and light trespass. The illumination of any public or private outdoor recreational facility after 11:00 p.m. is prohibited, except in order to conclude a specific activity, previously scheduled, which is in progress under such illumination prior to 11:00 p.m.

(9) Exemptions. This Ordinance shall not apply to the following exterior lighting sources:

- a. Airport lighting required by law.
- b. Temporary emergency lighting.
- c. Temporary lighting, other than security lighting, at construction projects.
- d. Governmental facilities where a compelling need for safety and security has been demonstrated.
- e. Lighting for flag poles, church steeples, or other similar non-commercial items provided they do not cause distraction within public rights-of-way.

J. Signage.

(1) The location and type of all existing and proposed signage shall be indicated on the site plan.

(2) All signage shall meet the requirements identified within the Zoning Ordinance.

K. Landscaping.

(1) Common and scientific names for all proposed plant material.

(2) Quantity, height/caliper/gallon size (as applicable) of all proposed plant material.

(3) Location of all proposed plant materials.

(4) Number of ground cover plants per square foot to be planted, and/or pounds of seed per 1,000 square feet and species/characteristics of grass in all areas to be seeded.

(5) Location, size, and species of all existing plant material to remain. This includes a diagram and/or tree survey noting the location, size, and species of existing trees and shrubs.

(6) Location of retaining walls, fences, utility easements, existing and proposed structures, and parking areas.

(7) Plant installation details.

(8) Drainage areas.

(9) All proposed trees and plantings of any existing trees larger than six inches in diameter to be removed.

(10) All landscaping necessary for the fulfillment of all City Ordinances shall be indicated on the Site Plan and will conform to Chapter 173 of this Ordinance.

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CHAPTER 171

TEMPORARY USES AND STRUCTURES

171.01 Purpose	171.06 General Regulations
171.02 Temporary Uses and Structures	171.07 Specific Requirements for Related Areas
171.03 Compliance with Chapter Provisions	171.09 Conditions of Approval
171.04 Permit Required	171.10 Fees
171.05 Prior Determination for Temporary Use Permit Approved	171.11 Violations and Penalties

171.01 PURPOSE.

The Supplemental Use Regulations set forth additional standards for certain uses located within the various zoning districts. These regulations recognize that certain use types have characteristics that require additional controls in order to protect public health, safety, and welfare. These regulations complement the use regulations contained in Chapter 168 of this Code of Ordinances.

171.02 TEMPORARY USES AND STRUCTURES.

These regulations are intended to prescribe the conditions under which limited duration activities (e.g., Christmas tree sales, pumpkin sales, landscape material sales, grand openings, special events, etc.) may be conducted. The intent is to allow for the temporary storage, display, and marketing of merchandise on a seasonal basis in an attractive manner to serve the desires of the general public but prevent the creation of any nuisance or annoyance to the occupants of adjacent buildings, premises or property, and the general public. It is also the intent to establish minimum standards for the operation of temporary uses in a manner that will provide for the health, safety, and welfare of the patrons, employees, the general public, etc. that may utilize or be affected by the establishment of the temporary use.

1. Exemptions.
 - a. Garage sales. The casual and occasional sales of used household goods by the owner thereof to the public, on a non-receiving basis, if the seller, at the time of the sale, is not engaged for profit in the business of selling goods of that or a similar nature, so long as such sales are not conducted in excess of three consecutive days and no more than two times annually.

171.03 COMPLIANCE WITH CHAPTER PROVISIONS.

No temporary use or structure permit shall be issued except for when hereinafter provided.

171.04 PERMIT REQUIRED.

The following uses are eligible for a temporary permit, provided they meet the following criteria and obtain prior approval from the Zoning Administrator. No temporary use shall occur, and no temporary structures shall be erected, without first obtaining a permit from the Zoning Administrator. All permits are subject to approval by the Zoning Administrator. Further, the

Zoning Administrator may impose certain reasonable requirements as may be required to prevent any negative impact to surrounding properties. City sponsored events are exempt from these requirements.

1. Construction Office. If a building permit has been issued for the construction of a new building on the same property or if a contractor has another non-building related construction project, the applicant may also apply for a temporary use permit for the purpose of installing any temporary structures used as temporary office, shop, or storage on the property provided they directly relate to the new construction activity and the temporary structure is removed upon completion of the construction project. Specific uses under this category may include the following:
 - a. Real estate offices and model homes;
 - b. Any structure used for construction offices, workshops, and storage;
2. Any other construction-related uses not specified in this section which, in the opinion of the Zoning Administrator, are similar to the uses listed in this section.
 - a. Special Events. These uses are intended to serve special events such as grand openings, parking lot sales, group assembly activities, etc. These uses typically involve the use of a tent, outdoor shelter, or any other enclosure and temporary structure. Garage sales are exempt from these provisions, provided they do not occur any more frequently than one 3-day event per 180-day period. Garage sales occurring more frequently shall be considered a commercial retail sales business in a residential zone, which is prohibited. Specific uses under this category may include the following:
 - i. Parking lot sales, sidewalk sales (private sidewalks only), clearance sales, or other temporary uses which, in the opinion of the Zoning Administrator, are similar to the uses listed in this section. (For purposes of this section, the term “sidewalks” does not apply to outside areas adjacent to sidewalks that were specifically built for outside sales.)
 - ii. Grand openings and special events, and grand openings which are not sponsored by the City or Chamber.
 - iii. Group assembly activities not sponsored or endorsed by the City (e.g. carnivals, fairs, rodeos, sports events, concerts, and shows).
 - b. Temporary food and beverage uses must meet the requirements of Chapter 183. (Subsection D – Ord. 18-03 – Apr. 18 Supp.)
 - c. Any other event related uses not specified in this section which, in the opinion of the Zoning Administrator, are similar to the uses listed in this section.
3. Seasonal Related. These uses typically involve the erection or setup of a temporary structure in order to display seasonal goods and wares. This does not include the sale of fireworks. These permitted uses and any related structures expire upon the completion of the season or at another specified date. Specific uses under this category may include the following:
 - a. Retail sales of Christmas trees and pumpkins.
 - b. Retail sale of agricultural products and landscape nursery material, unless the establishment sells and is zoned for sales of similar materials.
 - c. Nurseries and greenhouses.

- d. Any other seasonal related uses not specified in this section which, in the opinion of the Zoning Administrator, are similar to the uses listed in this section.

171.05 TEMPORARY USE PERMIT APPROVAL.

The Zoning Administrator shall only approve an application for a temporary use permit if all of the following findings can be made:

1. The proposed temporary use will be compatible with adjacent uses and will not adversely affect the surrounding neighborhood by means of odor, noise, dust, or other nuisance.
2. The additional parking required by the temporary use will be provided on site, if applicable, or adequate street parking is available in the immediate area.
3. Increased traffic caused by the temporary use will not adversely affect the surrounding neighborhood or City at large.
4. The proposed temporary use is consistent with the comprehensive plan, this Code of Ordinances, and all City and State regulations.

171.06 GENERAL REGULATIONS.

Each temporary use shall be described in a permit issued by the Zoning Administrator prior to commencement of the use. This permit shall be in addition to all other licenses, permits, or approvals otherwise required by any governmental entity. Each temporary use shall adhere to the following regulations.

1. Length. The temporary use shall be defined as either short-term or long-term.
 - a. "Temporary Use (Short-term)" means a short-term use is a use with a maximum duration of four consecutive days or less.
 - b. "Temporary Use (Long-term)" means a long-term use in duration of more than four consecutive days but less than six months.
2. Parking Spaces.
 - a. The number of additional parking spaces required, if any, and the location of such additional parking spaces, for the temporary activity shall be determined by the Zoning Administrator. The number of permanent parking spaces allowed to be used under the short-term temporary use permit shall be reviewed and determined by the Zoning Administrator.
 - b. The maximum number of permanent parking spaces allowed to be used for the operation of a long-term temporary use shall not exceed 20% of the parking on a site plan that was approved by the City to be counted toward the allowable size of the long-term temporary use or 20% of the site area, whichever is more restrictive.
3. Signs.
 - a. Non-illuminated detached signs.
 - A. Amount.
 1. A maximum of two detached signs.
 - B. Size.
 1. The total size area much be below 60 square feet.

2. Each sign may have a maximum size area of 30 square feet.
4. Cleanliness.
 - a. All sites shall be completely cleaned of debris and temporary structures including (but not limited to) trash receptacles, signs, stands, poles, electric wiring, or any other fixtures and appurtenances or equipment connected therewith, within five days after the termination of the sale or special event.
 - b. A bond or cash deposit in the amount of five hundred dollars (\$500.00) shall be deposited with the City to assure adequate cleanup of activities that occur on vacant or undeveloped lots, and/or involving the construction or placement of temporary structures. The bond for long-term temporary food and beverage uses shall be in the amount of seven hundred fifty dollars (\$750.00). Activities located in fully developed shopping centers will be exempt from bonding, with the exception of uses that involve the construction or placement of a temporary structure, and any long-term temporary food and beverage facilities shall be required to post a bond or cash deposit. The Zoning Administrator may waive this requirement for normal and customary uses incidental complementary to the principal use.
5. Sanitary facilities.
 - a. Sanitary facilities, either portable or permanent, shall be made available to all employees, attendants, and participants of the activity during its operational hours, as approved by the Zoning Administrator in concurrence with the City Engineer and County Health Department unless stipulated otherwise in this chapter. If the restroom facilities are located within an adjacent building, the written authorization of the owner of the adjacent building shall be required specifically stating that the restroom facilities will be made available to the employees, attendants, and participants at all times during the hours of operation of the temporary use activity.
6. General Regulations.
 - a. No area of public right-of-way may be used without obtaining approval from the Zoning Administrator, who will confer with the Chief of Police, Fire Chief, Public Works Director, and the City Administrator.
 - b. Proof of ownership or a signed letter, either from the property owner or an authorized representative for the property on which the activity is to take place, shall be presented at the time the temporary permit is requested.
 - c. All temporary structures including, but not limited to, greenhouses, trailers, mobile homes, signs, etc., shall conform to the zoning setback requirements unless stated otherwise in this chapter. Temporary structures are also subject to permit requirements as set forth in Chapter 152 of this Code of Ordinances.
7. Application Requirements. Applications for the temporary use shall be accompanied by the prescribed number of copies of a project plan and such other detailed elevations, plans, and other information as may be required to adequately evaluate the proposed use. A plan of the layout of the proposed use shall be submitted to the City with the application on a base plan prepared in accordance with the site plan requirements of the City. The proposed layout of the garden center area may be drawn onto a copy of a

previously approved site plan for the temporary use permit submittal. The layout plan shall identify the following:

- a. Area. The area on the site proposed to be utilized as part of the temporary use and associated sales areas.
 - A. Delineate how different areas will be used.
- b. Traffic.
 - A. Proposed modifications to the traffic patterns and methods proposed to notify patrons and identify the temporary traffic pattern changes, i.e., signage, traffic cones, fencing and barriers, etc.
 - B. Proposed vehicle loading zone.
 - C. Proposed temporary barriers or corrals with an architectural elevation, photo, or sketch of the barriers' proposed construction.
- c. Location of Facilities.
 - A. Electrical connection
 - 1. Overhead power connection with a minimum clearance above a grade of 14 feet;
 - 2. Installation of an underground conduit; or
 - 3. Other method acceptable to the City. The use of an overhead connection shall only be allowed in those areas where overhead electrical service currently exists in the area. Use of extension cords, cables, or wires, whether lying on the ground or otherwise connected to a power source, is expressly prohibited for long-term garden center uses. An electrical permit shall be obtained prior to any electrical installation or connection.
 - B. Water connection
 - C. The applicant shall provide, as determined by the Zoning Administrator, adequate facilities for the disposal of trash, waste, pallets, and display racks.
 - D. Restroom facilities shall be provided at all times during the temporary use activity.
- d. Indemnification and Proof of Insurance.
 - A. The owner or operator of any long term temporary use shall provide evidence of comprehensive general liability coverage and contractual liability insurance by an insurance company licensed to do business in the State of Iowa in the limits of at least \$1,000,000.00 for each personal injury accident and/or death; \$1,000,000.00 for each aggregate personal injury and/or death; and \$1,000,000.00 for each property damage accident. The evidence shall name the City as a coinsured and shall state that it cannot be canceled or materially altered without giving the City at least 30 days written notice by registered mail, return receipt requested. The owner or operator of a temporary garden center or the property owner shall execute an agreement, acceptable to the City, which indemnifies and holds harmless the City from any and all liability, damages, claims, costs, expenses, interest, and reasonable

attorney fees relating to the temporary use and associated facilities on the property.

- e. Removal. At the expiration of the temporary use permit, any structures, barricades, shelving, pallets, leftover merchandise, or other facilities associated with the temporary use shall be removed from the site.
- f. Safety Standards. In order to promote the safety of the patrons of these facilities, the following shall be required:
 - A. Bulk material shall be neatly and safely stacked.
 - B. All sales areas shall be separated from vehicular uses by the placement of a fence or barrier acceptable to the Zoning Administrator to prevent pedestrian and vehicular conflicts. If a barrier is of an open nature where patrons can reach through and obtain access to the merchandise, a four foot walkway shall be located adjacent to the barrier to prevent patrons from standing outside the barrier in traffic ways to shop.
 - C. The door openings for any greenhouses, shade structures, or similar enclosures shall have a minimum ten-foot setback from drive aisles where an opening in the barrier is provided aligned with the door of the structure.
- 8. Where openings in the barriers occur for pedestrian access, sight visibility shall be maintained so that vehicles can clearly see pedestrians approaching the opening from a distance of no less than 50 feet.
- 9. Temporary drive aisles shall be maintained at a minimum 24-foot width for two-way traffic and shall be delineated by the placement of traffic barriers, fencing, or some other physical marker that clearly informs drivers of the end of the parking area and the start of the drive aisle. A clear line of sight shall be maintained at the entrance and exit of the temporary drive aisles.
- 10. Vehicle loading areas shall be located in an area that minimizes pedestrian and vehicle conflict and provides for the safe loading of merchandise and vehicle access to and from the traffic lanes to the loading area, preferably without backing movements.

171.07 SPECIFIC REQUIREMENTS FOR RELATED AREAS.

- 1. Construction Office
 - a. Construction Offices and Related Structures.
 - A. Zoning.
 - 1. The use and structure are allowed in any zoning district. All requirements such as, but not limited to, setbacks, landscaping, parking, etc. are required to be complied with.
 - B. Maximum Duration.
 - 1. 24 months.
 - C. Amount.
 - 1. Limited to one per property and located entirely within the property boundaries.
- 2. Special Event.
 - a. Zoning.

- A. The use is allowed in any zoning district.
 - B. Events occurring in an R-1, R-2, or R-3 District shall occur between 7:00 a.m. to 10:00 p.m. except with the approval of the Chief of Police; all other zones as determined by the Zoning Administrator.
 - b. Maximum Duration.
 - A. Four consecutive days, not to exceed four events in a 12-month period.
- 3. Seasonal Related.
 - a. Retail Sales of Christmas Trees and Pumpkins.
 - A. Zoning.
 - 1. The use is allowed in any zoning district.
 - B. Maximum Duration.
 - 1. Forty (40) calendar days prior to December 25 for Christmas tree sales; October 1 through November 1 for pumpkin sales.
 - b. Agricultural Produce Stands.
 - A. Zoning.
 - 1. The use is allowed in any zoning district.
 - B. Termination.
 - 1. Stands and displays shall be removed when not used for a period of 30 consecutive days.
 - c. Retail Sales of Landscape Nursery Materials.
 - A. Zoning.
 - 1. The use is allowed in the CC, UC, and LI Zoning Districts.
 - B. Termination.
 - 1. Stands and displays shall be removed when not used for a period of 30 consecutive days.
- 4. Other structures or uses determined to be consistent with the intent of this subsection, with the approval of the Zoning Administrator.

171.08 CONDITIONS OF APPROVAL.

The Zoning Administrator may impose such conditions on a temporary use permit as is necessary to meet the purposes of this section and protect the public health, safety, and welfare and adjacent uses.

171.09 FEES.

The application fee for a temporary use permit shall be in the amount as established from time to time by resolution of the Council, payable each year of operation.

171.10 VIOLATIONS AND PENALTIES.

The operation of a temporary use is a privilege allowed by this section. Failure to maintain a temporary use in compliance with the conditions of approval and the regulations of this section shall constitute a nuisance and may be punished as set forth in Chapter 50 of this Code of Ordinances. A written notice of a violation of the temporary use permit shall be sent to the operator of the temporary use and the property owner, if different than the operator, and the

operator shall have a maximum of five (5) days, as determined by the Zoning Administrator, to bring the site into compliance. If the operator fails to correct the violation in the prescribed time, the City may revoke the temporary use permit and issue a cease and desist order for the temporary use. There shall also be a one-year moratorium from that date on the issuance of any other temporary use permits on the property and a one-year probationary period for the second year following the violation. During the probationary period, if the operator of a temporary use fails to maintain the premises and the use in conformance with the conditions of approval and this Code, after the notification procedures noted above, the City may revoke the temporary use permit and no other temporary use permits shall be issued on the property for a period of two (2) years.

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**CHAPTER 172
ZONING CODE –
SUPPLEMENTAL SITE DEVELOPMENT REGULATIONS**

172.01 Purpose	172.07 Accessory Structure
172.02 Mobile Home Parks	172.08 Outdoor Storage
172.03 Commercial Uses	172.9 Setback Adjustments
172.04 Performance Standards for Industrial Uses	172.10 Height Exceptions
172.05 Maximum Permitted Sound Levels Adjacent to Residential Zoning Districts	172.11 Fence Regulations
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172.06 Accessory Uses	172.13 Outdoor Lighting

172.01 PURPOSE.

The Supplemental Site Development Regulations recognize the existence of special conditions that cannot comply literally with the site development regulations set out for each zoning district. Therefore, these regulations qualify or modify the district regulations of this Zoning Code and provide for specific areas of exception.

172.02 MOBILE HOME PARKS.

Mobile Home Parks in the MH District. Mobile home parks are permitted in the MH District as conditional uses, subject to approval by the Board of Adjustment. Following the effective date of this Zoning Code, no mobile home shall be located outside of a mobile home park. A mobile home park is subject to the approval of a special use permit and compliance with the following regulations:

1. Certification. A certification of compliance with all ordinances and regulations regarding mobile home licensing, zoning, health, plumbing, electrical, building, fire protection, and any other applicable requirements shall be required of all mobile home parks.
2. Minimum and Maximum Area. A mobile home park shall be considered to be one zoned lot. The minimum contiguous area of a mobile home park shall be 100,000 square feet.
3. Density Requirements.
 - a. The maximum gross density of a mobile home park shall be 10 units per acre.
 - b. The minimum size of an individual mobile home space shall be 3,500 square feet for singlewide mobile home units and 5,000 square feet for doublewide mobile home units.
 - c. Each mobile home space shall have a width of at least 40 feet wide and a length of at least 75 feet.
4. Site Development Standards.
 - a. Setbacks. Each mobile home park shall have a minimum perimeter setback of 35 feet from adjacent nonresidential uses and 50 feet from adjacent residential uses. No space for a dwelling unit or any other structure shall be permitted in the required setback.

- b. **Setback Landscaping.** All area contained within the required setbacks except sidewalks and private drives shall be landscaped and screened in conformance with Chapter 173 of this Zoning Code. Screening shall be provided in conformance with Chapter 173 for any common property line with another nonresidential use.
 - c. **Impervious Coverage.** Impervious coverage for a mobile home park shall not exceed 50% of the total site area.
 - d. **Open Space.** Each mobile home park shall provide a minimum of 400 square feet of open recreational space per unit. Such space shall be provided at a central location accessible from all parts of the park by pedestrians. Required perimeter setbacks or buffers shall not be credited toward the fulfillment of this requirement.
 - e. **Separation Between Mobile Home Units.** The minimum separation between a mobile home unit and attached accessory structure and any other mobile home units and/or accessory structure shall be 20 feet.
 - f. **Separation and Setbacks for Accessory Buildings.** An accessory building on a mobile home space shall maintain a minimum rear and side yard setback of five feet. A minimum distance of ten feet shall be provided between any mobile home and an unattached accessory building.
5. **Street Access and Circulation Requirements.**
- a. **Access to Public Street.** Each mobile home park must abut and have access to a dedicated public street with a right-of-way of at least 60 feet. Direct access to a mobile home space from a public street is prohibited.
 - b. **Vehicular Circulation.** The mobile home park must provide interior vehicular circulation on a private internal street system. The minimum interior street width shall be 27 feet. The street system shall be continuous and connected with other internal and public streets or shall have a cul-de-sac with a minimum diameter of 90 feet. No such cul-de-sacs may exceed 300 feet in length.
 - c. **Separation between Units and Circulation Areas.** The minimum distance between a mobile home unit and any attached accessory structure and the pavement of an internal street or parking area shall be ten feet.
 - d. **Sidewalks.** Each mobile home park shall provide a sidewalk system to connect each mobile home space to common buildings or community facilities constructed for the use of its residents; and to the fronting public right of way. Sidewalk width shall be at least five feet.
 - e. **Street and Sidewalk Standards.** All internal streets and sidewalks shall be hard-surfaced. Electric street lighting is required along all internal streets.
 - f. **Parking Requirements.** Each mobile home park must provide at least one off-street parking stall for each mobile home space.
6. **Tornado Shelters.** Underground or other approved tornado shelters shall be provided in the mobile home park. Such shelter or shelters shall be built according to the recommendations of the Civil Defense Authority and be large enough to meet the specific needs of the park and its residents.
7. **Utilities.**

- a. All mobile home parks shall provide individual units and common facilities with an adequate, piped supply of hot and cold water for both drinking and domestic purposes; and standard electrical service, providing at least one 120-volt and one 240-volt electrical service outlet to each mobile home space.
 - b. Complete sanitary and sewer service shall be provided within each mobile home park in accordance with this Code of Ordinances.
 - c. Properly spaced and operating fire hydrants shall be provided for proper fire protection within each mobile home park in accordance with this Code of Ordinances.
 - d. All electric, telephone, gas, and other utility lines shall be installed underground.
- 8. Financial Responsibility. Each application for a mobile home park shall include a demonstration by the developer of financial capability to complete the project, and a construction schedule.
 - a. Completion Schedule. Construction must begin on any approved mobile home park within one year of the date of approval by the Planning and Zoning Commission. Such construction shall be completed within two years of approval unless otherwise extended by the Planning Commission.

172.03 COMMERCIAL USES.

- 1. Auto Service, Repair, Equipment Repair, Body Repair, Convenience Stores, and Gas Stations.
 - a. Where permitted in commercial districts, all repair activities, including oil drainage, lifts, and other equipment, must take place within a completely enclosed building. Outdoor storage is permitted only where incidental to auto repair and body repair, provided that such storage is completely screened so as not to be visible from residential areas or public rights-of-way. Screening is subject to provisions of Chapter 173 of this Zoning Code.
 - b. Any spray painting must take place within structures designed for that purpose and approved by the Building Official.
 - c. All gasoline pumps shall be set back at least 15 feet from any right-of-way line.
- 2. Automobile and Equipment Rental and Sales.
 - a. All outdoor display areas for rental and sales facilities shall be hard-surfaced.
 - b. Body repair services are permitted as an accessory use to automobile rental and sales facilities, provided that such repair services shall not exceed 25% of the gross floor area of the building.
- 3. Convenience Storage. When permitted in the CC and LI Districts, convenience storage facilities shall be subject to the following additional requirements:
 - a. The minimum size of a convenience storage facility shall be two acres.
 - b. Activities within the facility shall be limited to the rental of storage cubicles and the administration and maintenance of the facility.
 - c. All driveways within the facility shall provide a paved surface with a minimum width of 25 feet.
 - d. All storage must be within enclosed buildings and shall not include the storage of hazardous materials.

- e. No storage buildings may open into required front yards.
- f. Facilities must maintain landscaped buffer yards of 35 feet adjacent to any public right-of-way and 20 feet adjacent to other property lines unless greater setbacks are required by Chapter 173.

172.04 PERFORMANCE STANDARDS FOR INDUSTRIAL USES.

The following performance standards apply to all industrial uses permitted within an LI Limited Industrial zoning district:

1. **Physical Appearance.** All operations shall be carried on within an enclosed building except that new materials or equipment in operable condition may be stored outside. Normal daily inorganic wastes may be stored outside in containers, provided that such containers are not visible from the street.
2. **Fire Hazard.** No operation shall involve the use of highly flammable gases, acids, liquids, or other inherent fire hazards. This prohibition shall not apply to the normal use of heating or motor fuels and welding gases when handled in accordance with the regulations of Polk County and the City of Windsor Heights.
3. **Maximum Permitted Sound Levels Adjacent to Residential Zoning Districts.** No operation in the LI District shall generate sound levels in excess of those specified in Table 172.06-1 at the boundary of a residential district. All noises shall be muffled so as not to be objectionable because of intermittence, beat frequency, or shrillness.
4. **Sewage and Wastes.** No operation shall discharge into a sewer, drainage way, or the ground any material which is radioactive, poisonous, detrimental to normal sewer plant operation, or corrosive to sewer pipes and installations.
5. **Air Contaminants.** No material may be discharged into the air from any source in such quantity as to cause injury, detriment, nuisance, or annoyance to any considerable number of people or to the public in general; or to endanger the health, comfort, or safety of any considerable number of people or to the public in general; or to damage other businesses, vegetation, or property.
6. **Odor.** The emission of odors determined by the Planning and Zoning Commission to be obnoxious to most people shall be prohibited. Such odors shall be measured at the property line of the operation.
7. **Gases.** No release of noxious or poisonous gases shall be permitted except as provided in this section. Measurements of sulfur dioxide, hydrogen sulfide, or carbon monoxide shall not exceed 5 parts per million taken at the property line of the operation.
8. **Vibration.** All machines shall be mounted to minimize vibration. No measurable vibration shall occur at the property line of the operation which exceeds a displacement of 0.003 inch.
9. **Glare and Heat.** All glare generated by a use shall be shielded or directed so as not to be visible at the property line of the operation. No heat may be generated from an operation that raises the air temperature at the property line of the operation by more than five degrees Fahrenheit above the ambient air temperature.
10. **Storage of Chemical Products.** If allowed by special use permit, any above or below ground storage of liquid petroleum products or chemicals of a flammable or noxious nature shall not exceed 150,000 gallons when stored on one lot less than one acre. Such storage shall not exceed 25,000 gallons in any one tank. Storage of liquid petroleum products or chemicals of a flammable or noxious nature in excess of 25,000 gallons shall be located at least 50 feet from

any structure intended for human habitation and at least 200 feet from any Residential, Office, or Commercial zoning district.

172.05 MAXIMUM PERMITTED SOUND LEVELS ADJACENT TO RESIDENTIAL ZONING DISTRICTS.

Table 171.06-1 displays the maximum permitted sound levels that may be generated by uses in the CC, UC, or LI zoning districts where adjacent to residential zoning districts. All measurements shall be taken at or within the boundary between the originating district and the adjacent residential zoning district with a sound level meter meeting American National Standards Institute (ANSI) specifications for a Type II or better general purpose sound level meter. The A-weighted response shall be used.

Table 172.05-1 – Maximum Permitted Sound Levels At Residential Boundaries

Originating Zoning District	Time	Maximum One Hour LEQ* (dBa)
CC, UC	7:00 a.m. – 10:00 p.m.	60
	10:00 p.m. – 7:00 a.m.	50
LI	7:00 a.m. – 10:00 p.m.	65
	10:00 p.m. – 7:00 a.m.	50
*LEQ (or equivalent continuous sound level) is the constant sound level that, in a given situation and time period, conveys the same sound energy as the actual time-varying A-weighted sound. It is the average sound level and accurately portrays the sound the human ear actually hears.		

172.06 ACCESSORY USES.

1. Home-Based Businesses; Home Occupations. Each home-based business shall register with the City, on a form established by the Zoning Administrator. Home-based businesses and home occupations are permitted as an accessory use in residential units subject to the following conditions:

- a. External Effects.
 - A. There shall be no change in the exterior appearance of the building or premises housing the home occupation other than signage permitted within this section.
 - B. No noise, odors, bright lights, electronic interference, storage, or other external effects attributable to the home occupation shall be noticeable from any adjacent property or public right-of-way.
 - C. A home occupation that is run within a detached accessory building shall be approved by the Board of Adjustment in accordance with these zoning regulations. All

“external effects” criteria in subparagraphs (1), (2), (4), (5), and (6) of this paragraph A are applicable for the detached accessory building. Signage is not allowed upon the detached accessory building.

- D. Mechanical or electrical equipment supporting the home occupation shall be limited to that which is self-contained within the structure and normally used for office, domestic or household purposes.
- E. No outdoor storage of materials or equipment used in the home occupation shall be permitted, other than motor vehicles used by the owner to conduct the occupation. Parking or storage of heavy commercial vehicles to conduct the home occupation is prohibited.
- F. No home occupation shall discharge into any sewer, drainage way, or the ground any material which is radioactive, poisonous, detrimental to normal sewer plant operation, or corrosive to sewer pipes and installations.
- b. Employees. The home occupation shall employ no more than one full time or part time employee on site other than the residents of the dwelling unit.
- c. Extent of Use. For all residential zoning districts, a maximum of 30% of the floor area of the dwelling may be devoted or used for a home based business/home occupation, inclusive of any attached garage or detached accessory buildings used for the home occupation.
- d. Signage. Signage designating the home occupation shall be consistent with regulations for zoning districts set forth in Chapter 175 of this Zoning Code.
- e. Traffic Generation.
 - a. Delivery or service by commercial vehicles or trucks over ten tons gross empty weight is prohibited for any home-based business located on a local street.
- f. Nuisance. No home occupation shall be noxious, offensive, or hazardous due to vehicular traffic generation or emission of noise, vibration, smoke, dust or other particulate matter, odorous matter, heat, humidity, glare, refuse, radiation, or other objectionable emissions that would cause an adverse impact on the neighborhood, as determined by the zoning administrator.

172.07 ACCESSORY STRUCTURE.

- 1. Accessory structures are enclosed, covered, or walled structures that are customarily incidental and subordinate to the principal use or structure. The accessory buildings and structures include free standing garages, trash enclosures, sheds, play structures, underground shelters, and above-ground and in-ground pools and hot tubs.
- 2. Standards.
 - a. Construction. No accessory structure shall be constructed upon a lot until the construction of the principal building has been commenced, and no accessory structure shall be used if the principal building has not completed construction within a 2 year period.
 - b. Setback. Structures shall maintain a minimum distance of five feet from any lot lines, alley lines, and adjoining lots.
 - A. Must have a greater front yard setback than the primary structure.
 - c. Height. All structures shall have a maximum height of 25 feet.
 - d. Zoning. Must comply with all underlying standards set forth in Chapter 168.

e. Exempt Structures.

A. Unwalled structures under 120 square feet in size and under 15 feet in height.

1. This does not include carports or concrete slabs.

172.08 OUTDOOR STORAGE.

Outdoor storage is prohibited in all zoning districts except the LI Limited Industrial zoning district, except as provided in this section.

1. Outdoor storage is permitted where incidental to auto services, equipment repair, and body repair, provided that such storage is completely screened at property lines by an opaque barrier, as set forth in Chapter 173 Landscaping and Screening Standards. This provision shall apply to any auto services, equipment repair, or body repair use established after the effective date of this Zoning Code.

172.09 SETBACK ADJUSTMENTS.

1. Allowable Encroachments Into Setback

- a. Architectural projections, including roofs which cover porches, enclosed porches, windowsills, belt courses, cornices, eaves, flues, and chimneys, and ornamental features may project three feet into a required yard.
- b. Terraces, patios, and attached features must be set back at least five feet from an adjacent side lot line, ten feet from the rear lot line, or 20 feet from any street property.
- c. Fire escapes, fireproof outside stairways, and balconies opening to fire towers may project a maximum of 4.5 feet into a required rear or interior side yard, provided that they do not obstruct the light and ventilation of adjacent buildings.
- d. In commercial districts, a canopy may extend into a required front yard, provided that the canopy is set back at least five feet from the front property line, covers less than 15% of the area of the required front yard, and has a vertical clearance of at least 8 feet, 6 inches.

2. Setback Adjustments.

- a. Setbacks on Built-Up Blockfaces. These provisions apply if 40% or more of the buildings on that blockface have front yard setbacks different from those required for the specific district.
 - A. If a building is to be built on a parcel of land within 100 feet of existing buildings on both sides, the minimum front yard shall be the mean setbacks of the adjacent buildings.
 - B. If a building is to be built on a parcel of land within 100 feet of an existing building on one side only, the minimum front yard shall be the setback of the adjacent building.
 - C. If a building is to be built on a parcel of land not within 100 feet of an existing building on either side, then the minimum front yard shall be the mean setback of all existing buildings on the blockface.
 - D. No setback adjustment pursuant to this section shall create a required front yard setback more than five feet greater than that otherwise required by the applicable zoning district.

- b. Corner Lots. Required setbacks shall not reduce the buildable width of any corner lot to less than 24 feet. Appropriate setback adjustments shall be allowed to maintain this minimum width.
- 3. Rear Yard Exceptions – Residential Uses. When an irregular lot is used for residential purposes, the rear yard may be measured as the average horizontal distance between the building and rear lot line, provided that the minimum setback shall not be less than 60% of the rear yard required by the zoning district.
- 4. Double Frontage Lots. Residentially zoned double frontage lots on a major street, and with no access to that street, may have a 25-foot minimum front yard setback along said street. All other double frontage lots must provide full front yard setbacks from each adjacent street.
- 5. Satellite Antennas.
 - a. Antennas with a surface area over 6.3 square feet which are accessory to a primary use and are designed to receive and transmit electromagnetic signals, or to receive signals from satellites, shall not be located within any front yard of the primary use.
 - b. Such antennas shall be located no less than 15 feet from the property line of an adjacent property within a residential zoning district.
- 6. Vision Clearance Triangle. No structure, including a fence, shall be built to a height of more than three feet above the established curb grade on the part of the lot bounded by the street lines of the streets which intersect and a line connecting a point on each of such lines 30 feet from their point of intersection. No landscaping shall be planted in such area which will materially obstruct the view of drivers approaching the street intersection. However, in no case shall there be any interference with the required sight distance as determined by the Department of Engineering.

172.10 HEIGHT EXCEPTIONS.

These provisions allow exceptions to the height limit of any zoning district in certain situations.

- 1. Vertical Projections. Chimneys, cooling towers, building mechanical equipment, elevator bulkheads, fire towers, grain elevators, non-parabolic receiving antennas, tanks, solariums, steeples, penthouses not exceeding 25% of total roof area, flag poles, stage towers or scenery lofts, and water towers may be built to any height in accordance with existing and future ordinances. Such structures shall not extend into the approach zones, clear zones, or other restricted air space required for the protection of any public airport.
- 2. Amateur Radio Towers and FCC Pronouncements.
 - a. Radio towers, antennas, and other appurtenances operated by licensed amateur radio operators, where and when permitted, may not exceed 75 feet in height. This height has been determined by the City to reasonably accommodate amateur service communications and further represents the minimum practicable regulation to accomplish legitimate municipal land use regulation purpose, as recognized under published guidelines of the Federal Communications Commission.
 - b. Special instances may require that amateur radio tower heights exceed 75 feet to achieve effective and reliable communications. In such cases, the Council may grant a special use permit to a licensed amateur radio operator for a specific tower height that exceeds 75

feet. In determining whether to grant such permission, the Council shall consider the federal guidelines contained in PRB-1 (Amateur Radio Preemption, 101 FCC 2d (1985), codified at C.F.R. Section 97.15(e).

c. Such radio towers shall not be located within any front yard of the primary use.

3. Broadcast Towers. Broadcast towers, when operated by a federally licensed commercial or nonprofit organization, may be built to any height in accordance with existing and future ordinances, subject to the approval of a conditional use permit. This exception does not apply to radio towers, antennas, and other appurtenances operated by licensed amateur radio operators.

4. Small Wind Energy Systems. Small wind energy systems as outlined in 172.11.

172.11 SMALL WIND INNOVATION ZONE ORDINANCE

The purpose of this regulation is to promote the safe, effective, and efficient use of small wind energy systems installed to reduce the on-site consumption of utility-supplied electricity.

1. Findings. The City of Windsor Heights finds that wind energy is an abundant, renewable, and nonpolluting energy resource and that its conversion to electricity will reduce our dependence on nonrenewable energy resources and decrease the air and water pollution that results from the use of nonrenewable energy sources. Distributed small wind energy systems will help diversify the state's energy portfolio. Small wind energy systems also make the electricity supply market more competitive by promoting customer choice. The State of Iowa has enacted a number of laws and programs to encourage the use of small-scale renewable energy systems, including net metering, sales tax exemptions, property tax exemptions, production tax credits, and the Small Wind Innovation Zone program.
2. Permitted Use. Small wind energy systems shall be a permitted use in all zoning classifications where structures of any sort are allowed, subject to certain requirements as set forth below. The City of Windsor Heights may require the installer of the small wind energy system, or the owner of the property upon which the system will be installed, to obtain a building permit for the system, if required by City of Windsor Heights code.
 - a. Tower height and setback. The base of the small wind energy system tower shall be set back from all property lines, public right of ways, and above ground public utility lines at a distance no less than 115% of the total extended height of the tower. Towers shall be allowed closer to a property line than its total extended height if the abutting property owner(s) grants written permission, provided that the tower installation complies with the other applicable setbacks herein provided. As long as the total extended height meets the setback requirements in this section, there shall be no specific height limitation, except as imposed by Federal Aviation Administration regulations as stated in section 4.3.
 - b. Requirement for engineered drawings/approval and soil studies.

A small wind energy system of greater than 20 kW, or a small wind energy system mounted on a structure other than a free-standing tower, shall not be erected in the City of Windsor Heights unless the plans and specifications for the system have received the stamped approval of an Iowa registered engineer. In lieu of obtaining the

stamped approval of an Iowa registered engineer for each small wind energy system of 20 kW or less mounted on a free-standing tower, a manufacturer may submit its standard plans and specifications for a 20 kW system on a free-standing tower, including its soils study and foundation plans for such system, for a one-time review and stamped approval by an Iowa registered engineer as suitable for construction in any soil condition that exists in the State of Iowa. If such one-time stamped approval is obtained, that manufacturer may thereafter construct such small wind energy systems of 20 kW or less in the City of Windsor Heights, utilizing the approved soils study and foundation plans for the 20 kW small wind energy system, without obtaining and presenting the stamped approval of an Iowa registered engineer for each such installation.

c. Compliance with Federal Aviation Administration Regulations (FAA). No small wind energy system shall be constructed, altered, or maintained so as to project above any of the imaginary airspace surfaces described in FAR Part 77 of the FAA guidance on airspace protection.

d. Safety. Any climbing foot pegs or rungs below 12 feet of a freestanding tower shall be removed to prevent unauthorized climbing. For lattice or guyed towers, sheets of metal or wood may be fastened to the bottom tower section such that it cannot readily be climbed.

e. Sound. Sound produced by the small wind energy system under normal operating conditions, as measured at the property line, shall: a) not produce sound at a level that would constitute a nuisance; and b) comply with any local ordinance regulating the volume of sound as a nuisance, if applicable. Sound levels, however, may be exceeded during short-term events out of anyone's control, such as utility outages and/or severe wind storms.

f. Compliance with National Electric Code. Building permit applications for small wind energy systems shall be accompanied by a line drawing of the electrical components, as supplied by the manufacturer, in sufficient detail to allow for a determination that the design and manner of installation conforms to the state National Electric Code.

g. Utility Notification. No small wind energy system shall be installed until evidence has been given that the utility company has authorized interconnection of the small wind energy system to its electric distribution or transmission, under an agreement approved by and subject to regulation adopted by the Iowa Utilities Board. Properties not connected the public utility system shall be exempt from this requirement.

h. Insurance. A person seeking a building permit to erect a small wind energy system shall provide evidence, in the form of a certificate of insurance satisfactory to the City of Windsor Heights showing general liability insurance coverage for the installation and

operation of the system under a standard homeowner's or standard business owner's insurance policy, separate and distinct from any insurance requirements of a public utility.

i. Abandonment. If a wind turbine is inoperable for six consecutive months, the owner shall be notified that they must, within six months of receiving the notice, restore the small wind energy system to operating condition. If the owner fails to restore the system to operating condition within the six-month time frame, it shall be considered abandoned and the owner shall be required, at the owner's expense, to remove the small wind energy system. A small wind energy system that has been abandoned may be abated as a public nuisance.

j. Signage. No signs, other than appropriate warning signs or standard manufacturer's or installer's identification signage, shall be displayed on a wind generator, tower, building, or other structure associated with a small wind energy system, subject to local sign regulation if any.

k. Lighting. No illumination of the turbine or tower shall be allowed unless required by the FAA or unless allowed by applicable City of Windsor Heights ordinance.

172.12 FENCE REGULATIONS.

1. General Requirements

a. Location Restriction. No fence shall be built on any lot or tract outside of the property owner's surveyed lot lines. If a fence is erected along the property lines the owner installing the fence must ensure there is a permanent means for maintaining both sides of the fence subject to state and local ordinances.

A. No landscape retaining wall shall be installed within two feet of the lot line of another property that is in excess of 24" without first conducting a consultation meeting with the City's stormwater coordinator and the adjoining property owner.

b. Vision Clearance Triangle. No fence permitted or required by this Zoning Code or other sections of this Code of Ordinances shall be built within the vision clearance triangle, formed by the adjacent curb lines of two intersecting streets and a line connecting points 30' on each leg from their point of intersection; or otherwise in any manner create a traffic hazard or obstruction to visibility.

c. Facing. The finished surfaces or decorative side of any fence shall face toward adjacent properties and street frontage. If no finished side can be determined, the support side shall face the interior.

d. Prohibited Materials. A fence or wall may not be designed to cause pain or injury to humans or animals. Therefore, the use of spikes, broken glass, barbed wire, electric, razor wire, nails, electrical charge, or other similar materials shall be prohibited.

e. Sidewalk. Fences may not be constructed within two feet of a public sidewalk.

f. Easements. No fence may be allowed to be constructed, built, or located over a public easement unless otherwise noted in this ordinance or approved by the zoning administrator.

g. Overland flowage easements.

- A. Fences may encroach into an overland flowage easement providing measures are taken to make certain that the fence does not restrict the water flow, cause siltation buildup, etc.
 - B. Permitted fence material includes chain link, wrought iron fencing, picket style fencing that is at least 30% open, or other fencing styles that are at least 30% open.
 - C. Solid fencing shall be elevated a minimum of 6" through the swale part of the easement to allow water flowage.
- h. Miscellaneous. Fences which enclose public or institutional parks, playgrounds, or schoolyards in residential areas shall be of open type not exceeding 6' in height except as required for recreational purposes such as baseball backstop when a limited section(s) of open fence up to 10' in height is allowed, where necessary to provide for such backstop or similar purposes.
- 2. Temporary Construction and Maintenance Fences. Unless otherwise approved by the City or zoning administrator, any temporary fences shall be removed if construction ceases for a period of six months or upon the issuance of an occupancy permit, including temporary occupancy.
 - a. Height. The maximum height of a fence for any construction shall be 8' feet.
- 3. Residential Fences. Fences constructed within residential districts or on land used for residential purposes are subject to the following provisions:
 - a. Height. The maximum height of a fence within a front yard or street side yard setback shall be 4'. The maximum height for any fence outside of a required front yard shall be 6' and is measured from the property grade.
 - A. Exception for Street Side Yards. On corner lots, a fence built parallel to the street side yard line but set back in conformance with the street yard setback may have a maximum height of six feet.
 - b. Materials. Fences shall be constructed of wood, PVC/ resin, stone, wrought iron, masonry, or chain link materials only. Wood fences shall utilize standard building lumber only.
 - c. Location restrictions. Fences may not be constructed on lots unless a primary building is in place.
- 4. Nonresidential fences.
 - a. Height. The maximum height of a fence for any permitted use in a nonresidential district shall be 8'.

(Ord. 15-06 – Nov. 15 Supp.)

172.13 OUTDOOR LIGHTING

- 1. General Requirements
 - a. Location Restriction.
- 2. Applicability. Except as described below, all outdoor lighting installed after the date of effect of this Ordinance shall comply with these requirements. This includes, but is not limited to, new lighting, replacement lighting, or any other lighting whether attached to

structures, poles, the earth, or any other location, including lighting installed by any third party.

a. Exceptions.

- A. Lighting within public right-of-way or easement for the principal purpose of illuminating streets or roads. No exemption shall apply to any lighting within the public right of way or easement when the purpose of the luminaire is to illuminate areas outside the public right of way or easement.
- B. Lighting for public monuments and statues.
- C. Underwater lighting for pools or water features.
- D. Low voltage landscape lighting controlled by an automatic device that is set to turn the lights off at one hour after the site is closed to the public or at a time established by the Zoning Administrator.
- E. Lighting solely for signs. See Chapter 175 Sign Regulations
- F. Repairs to existing luminaires not exceeding 50% of total installed luminaires.
- G. Temporary lighting.
- H. Lighting for emergency conditions.
- I. Lighting specified or identified in a conditional use permit.
- J. Lighting required by federal or state law.

3. Lighting Control Requirement

a. Automatic Switching Requirements

- A. Controls shall be provided that automatically extinguish all outdoor lighting when sufficient daylight is available using a control device or system such as a photoelectric switch, astronomic time switch or equivalent functions from a programmable lighting controller, building automation system or lighting energy management system, all with battery or similar backup power or device.

b. Automatic Lighting Reduction Requirements

- A. Outdoor lights shall be set to be reduced by at least 30% or extinguished by 12:00 am.
 - 1. Exceptions. Lighting reductions are not required for any of the following:
 - a. With the exception of landscape lighting, lighting for residential properties including multiple residential properties not having common areas.
 - b. When the outdoor lighting consists of one luminaire.
 - c. Code required lighting for steps, stairs, walkways, and building entrances.
 - d. When in the opinion of the Authority, lighting levels must be maintained.
 - e. Motion activated lighting.

- f. Lighting governed by special use permit in which times of operation are specifically identified.
- g. Businesses that operate on a 24 hour basis.

4. Residential properties

- a. For residential properties including multiple residential properties not having common areas, all outdoor luminaires shall be fully shielded and shall not exceed the allowed lumen output in Table 172.14-03.
- b. Low voltage landscaping lighting shall be aimed away from adjacent properties.
- c. Shielding directional flood lighting aimed so that direct glare is not visible from adjacent properties.
- d. Exceptions.
 - A. Lighting installed with a vacancy sensor, where the sensor extinguishes the lights no more than 15 minutes after the area is vacated.
 - B. Open flame gas lamps.

Table 172.13-01 Purposes of Lighting Zones

Zone	Overview
LZ-0: Limited lighting	Areas where lighting might adversely affect flora and fauna or disturb the character of the area. Lighting may be used for safety and convenience but it is not necessarily uniform or continuous.
LZ-1: Low ambient lighting	Areas of human activity where the vision of human residents and users is adapted to low light levels. Lighting may be used for safety and convenience, but it is not necessarily uniform or continuous.
LZ-2: Moderate ambient lighting	Areas of human activity where the vision of human residents and users is adapted to moderate light levels. Lighting may typically be used for safety and convenience, but it is not necessarily uniform or continuous.
LZ-3: Moderately high ambient lighting	Areas of human activity where the vision of human residents and users is adapted to moderately high light levels. Lighting is generally desired for safety, security, and/or convenience and it is often uniform and/or continuous.
LZ-4: High ambient lighting	Areas of human activity where the vision of human residents and users is adapted to high light levels. Lighting is generally considered necessary for safety, security and/or convenience and it is mostly uniform and/or continuous.

Table 172.13-02 Lighting Zones for Districts

Zoning District	Lighting Zone
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R-1, R-2	LZ-1
R-3, MH, LI	LZ-2
CC, UC	LZ-3

Table 172.13-03 Maximum Allowed Luminaire Lumens

Lighting Application by Maximum Allowed Luminaire Lumens	LZ-0	LZ-1	LZ-2	LZ-3	LZ-4
Unshielded luminaires at one entry	N/A	420 lumens	630 lumens	630 lumens	630 lumens
Fully shielded luminaire lumens	N/A	630 lumens	1,260 lumens	1,260 lumens	1,260 lumens
Unshielded luminaire excluding main entry	N/A	315 lumens	315 lumens	315 lumens	315 lumens
Landscape lighting	N/A	630 lumens	1,050 lumens	2,100 lumens	2,100 lumens
Shielded directional flood lighting	N/A	630 lumens	1,260 lumens	2,100 lumens	2,100 lumens
Low voltage landscape lighting	N/A	N/A	525 lumens	525 lumens	525 lumens

5. Non-residential properties. Non-residential may follow either the Prescriptive Method or the Performance Method listed below

- a. Prescriptive Method

- A. Total Site Lumen Limit

1. The total installed initial luminaire lumens of all outdoor lighting shall not exceed the total site lumen limit. The total site lumen limit shall be determined using either the Parking Space Method 174.14-04 or the Hardscape Area Method 174.14-05. Only one method shall be used per permit application, and for sites with existing lighting, existing lighting shall be included in the calculation of total installed lumens. The total installed initial luminaire lumens is calculated as the sum of the initial luminaire lumens for all luminaires.

- B. Limits to Off Site Impacts

1. All luminaires shall be rated and installed according to Table 174.14-06.
 - a. Less than 2 mounting heights shall be mounted with the backlight portion of the light output oriented perpendicular and towards the property line of concern.

C. Light Shielding for Parking Lot Illumination

1. All parking lot lighting shall have no light emitted above 90 degrees.

Table 172.13-04 Allowed Total Initial Luminaire Lumens per Site for Non-residential Outdoor Lighting, Per Parking Space Method

LZ-0	LZ-1	LZ-2	LZ-3	LZ-4
350 lms/space	490 lms/space	630 lms/space	840 lms/space	1,050 lms/space

Table 172.13-05 Allowed Total Initial Luminaire Lumens per Site for Non-residential Outdoor Lighting, Hardscape Area Method

LZ-0	LZ-1	LZ-2	LZ-3	LZ-4
0.5 lumens per SF of Hardscape	1.25 lumens per SF of Hardscape	2.5 lumens per SF of Hardscape	5.0 lumens per SF of Hardscape	7.5 lumens per SF of Hardscape

Table 172.13-06 Maximum Allowable Backlight, Uplight, and Glare (BUG) Rating

	LZ-0	LZ-1	LZ-2	LZ-3	LZ-4
Allowable Backlight Rating					
Greater than 2 mounting heights from property line	B1	B3	B4	B5	B5
1 to less than 2 mounting heights from property line	B1	B2	B3	B4	B4
0.5 to 1 mounting heights from property line	B0	B1	B2	B3	B3
Less than 0.5 mounting height to property line	B0	B0	B0	B1	B2
Allowable Uplight Rating	U0	U1	U2	U3	U4
Allowed % light emission above 90° for street or Area lighting	0%	0%	0%	0%	0%
Allowable Glare Rating	G0	G1	G2	G3	G4
Any luminaire not properly oriented with 1 to less than 2 mounting heights to any property line of concern	G0	G0	G1	G1	G2
Any luminaire not properly oriented with 0.5 to less than 1 mounting heights to any property line of concern	G0	G0	G0	G1	G1
Any luminaire not properly oriented with less than 0.5 mounting heights to any property line of concern	G0	G0	G0	G0	G1

b. Performance Method

A. Total Site Lumen Limit

1. The total installed initial luminaire lumens of all lighting systems on the site shall not exceed the allowed total initial site lumens. The allowed total initial site lumens shall be determined using Table 172.13-07. For sites with existing lighting, existing lighting shall be included in the calculation of total installed lumens. The total installed initial luminaire lumens of all is calculated as the sum of the initial luminaire lumens for all luminaires.
- B. Limits to Off Site Impacts
1. All luminaries shall be rated and installed according to 172.13-06
OR
 2. The entire outdoor lighting design shall be analyzed using industry standard lighting software including inter-reflections in the following manner:
 - a. Input data shall describe the lighting system including luminaire locations, mounting heights, aiming directions, and employing photometric data tested in accordance with IES guidelines. Buildings or other physical objects on the site within three object heights of the property line must be included in the calculations.
 - b. Analysis shall utilize an enclosure comprised of calculation planes with zero reflectance values around the perimeter of the site. The top of the enclosure shall be no less than 33 feet (10 meters) above the tallest luminaire. Calculations shall include total lumens upon the inside surfaces of the box top and vertical sides and maximum vertical illuminance (footcandles and/or lux) on the sides of the enclosure.
 - c. The design complies if
 - i. The total lumens on the inside surfaces of the virtual enclosure are less than 15% of the total site lumen limit; and
 - ii. The maximum vertical illuminance on any vertical surface is less than the allowed maximum illuminance per 172.13-08.

Table 172.13-07 Allowed Total Initial Site Lumens

Lighting Zone	LZ-0	LZ-1	LZ-2	LZ-3	LZ-4
Allowed Lumens Per SF	0.5	1.25	2.5	5.0	7.5
Allowed Base Lumens Per Site	0	3,500	7,000	14,000	21,000

Table 172.13-08 Allowed Total Initial Site Lumens

LZ-0	LZ-1	LZ-2	LZ-3	LZ-4
0.05 FC or 0.5 LUX	0.1 FC or 1.0 LUX	0.3 FC or 3.0 LUX	0.8 FC or 8.0 LUX	1.5 FC or 15.0 LUX

172.14 BUILDING FAÇADE

1. Applicability. Except as described below, all façade requirements and materials are to be subject to their respective zoning requirements and complement currently existing buildings and structures within the district.
2. Façade Material. All building façade materials that face the primary street will complement the surrounding buildings and parcels around the proposed building. These materials will be deemed appropriate by the City's Zoning Administrator.
3. Façade Coverage. The percentage of the façade that each material covers will conform to design standards within the respective zoning district and any additional condition listed further within this section.
 - a. In the UC – University Ave Mixed Use District, the primary street-facing façade of all buildings, excluding windows and doorways, must consist of a minimum of 50% brick.
4. The Zoning Administrator will be responsible for determining compliance with this criterion.

CHAPTER 173 ZONING CODE – LANDSCAPING AND SCREENING STANDARDS

173.01 Purpose

173.06 Screening Standards

173.02 Applicability	173.07 Screening Standards of
173.03 Landscaping Requirements	Dumpsters and Recycling Areas
173.04 Planting requirements	173.08 Landscaping Materials and Installation Standards
173.05 Buffer Yard Provisions	

173.01 PURPOSE.

The Landscaping and Screening Regulations provide guidance on the development of sites within the City by addressing landscaping and screening requirements. They are designed to improve the appearance of the community, buffer potentially incompatible land uses from one another, and conserve the value of properties within the City.

173.02 APPLICABILITY.

The provisions of this chapter apply to all new development or redevelopment of land on each lot or site upon application for a building permit, except for the following:

1. Reconstruction or replacement of a lawfully existing use or structure following a casualty loss of less than 50% of the total value.
2. Remodeling, rehabilitation, or improvements to existing uses or structures which do not substantially change the location of structures, parking, or other site improvements.
3. Additions or enlargements of existing uses or structures which increase floor area or impervious coverage area by less than 20%. Where such additions or enlargements are 20% or greater, these provisions apply only to that portion where the new development occurs.

173.03 LANDSCAPING REQUIREMENTS.

1. Landscaping shall be required adjacent to each street property line and within street yards as set forth in Table 173-3 Screened Buffer Yard Requirements.
2. Ground Cover. All areas without buildings, paving, or hard surfaces shall be landscaped with grass or continuous plant beds containing shrubs and flowering perennials.
 - a. No mow and low maintenance yards may be utilized in all areas except within parking lots, and street rights-of-way.
 - A. No mow and low maintenance yards shall: Not contain any noxious weeds outlined in Chapter 317 of the Iowa Code.
 - B. Have a 5 foot buffer of maintained grass with a maintained edge along all property lines and sidewalks.
3. Obstruction of View. Landscaping or screening installed in any landscaped area shall not obstruct the view from or to any driveway approach, street, alley, or sidewalk, and must maintain the Vision Clearance Triangle.
4. Earth Berm Locations. All earth berm locations shall be reviewed by the Public Works Director to determine how the berms shall relate to drainage and public utilities.
5. Exceptions. A development may continue to comply with the buffer yard and screening requirements in effect at the time of issuance of its original permit, regardless of whether an adjacent lot or site is subsequently rezoned to a less intensive district which would otherwise require compliance with buffer yard or screening provisions.

6. Supplements to the Official List of Plant Materials. The list of Official List of Plant Materials has been compiled using the latest research data available. Plants other than those listed may be used to fulfill minimum landscaping requirements as approved by the Zoning Administrator. To be considered for approval, a proposed plant material must be submitted for review with the following information or additional information as requested:
 - a. Common name and scientific name of plant material;
 - b. Habitat, geographic climate range, and original native region;
 - c. Growing characteristics, including evergreen or deciduous, height and spread at maturity;
 - d. Suitability for different landscape uses and applications;
 - e. Susceptibility to disease and tolerance of environment: heat, drought, pollution stress;
 - f. Fruit bearing characteristics which may be hazardous in pedestrian and parking areas.
7. Encouragement of Native Landscaping Materials. The use of suitable native plant materials is encouraged to fulfill landscaping requirements. Native plants, or those plants which occur naturally in this region, have shown greater adaptability to the seasonal and periodic climate changes which occur in this region.
8. Standards for Required Landscaping.
 - a. Plants shall be from the approved plant lists in 173.09 Landscaping Materials. Substitutions will be reviewed by the Zoning Administrator on a case-by-case basis.
 - b. Plants shall *not* be from the “Windsor Heights Restricted Tree/Plant List” as defined in said table.
 - c. All other specifications shall conform with the latest version of the American Standards for Nursery Stock, published by the American Association of Nurserymen for that type of tree or shrub at the time of installation.
 - d. All plant material shall be installed free of disease and in a manner that ensures the availability of sufficient soil and water to sustain healthy growth.
9. Minimum Spacing of Plant Materials.
 - a. Spacing of trees: spacing consistent with generally accepted species spread dimension at maturity defined by American Standards for Nursery Stock, or a minimum of one tree for every 30 feet, whichever is less.
 - b. Groundcover turf: immediate and complete coverage of an area within the season.
 - c. Groundcover, creeping: spacing adequate to provide complete coverage in three years.
 - d. Groundcover: maximum spacing upon installation of 18 inches on center, should have immediate and complete coverage of area within the season, and with spacing adequate to provide complete coverage in three years.
10. Supplemental Installation Requirements for Shrubs.
 - a. Shrubs shall be installed in a manner that promotes ease of maintenance and quality appearance.

- b. All shrubs shall be installed in continuous beds or naturalized settings containing a minimum of 3 inches of organic mulch contained by a properly maintained spade edge or other manufactured edging material as approved by the Zoning Administrator.
 - c. Shrub installations shall contain groundcovers, native perennials, or seasonal annuals. Other shrub installations without these features will need approval of the Zoning Administrator, upon demonstration of quality design and a maintenance contract/commitment.
11. Use of Inorganic Landscaping Materials.
- a. No artificial trees, shrubs, plants, or turf shall be used to fulfill the minimum requirements for landscaping.
 - b. Inorganic materials, such as stone or decorative pavers, may be used provided that such material does not comprise more than 35% of the minimum required landscaped area.
 - c. Concrete and/or asphalt pavement surfaces may not be used within the minimum required landscaped area, except for walkways less than 5 feet in width.
 - d. Buffer yards may not include any paving, regardless of use.

173.04 PLANTING REQUIREMENTS

Table 173.04-01 – Minimum Amount Plantings Required

Planting requirements	R-1, R-2	R-3, CC, UC, LI
Trees	1 per dwelling unit	1 per 2,000 sq.ft. of pervious area
Shrubs	N/A	5 per 2,000 sq.ft. of pervious area

Table 173.04-02 – Minimum Size at Time of Planting

Plant Type	Trunk Minimum	Height Minimum	Other Requirements
Deciduous Overstory Tree	2" (Measured 6" above root collar)	3.5'	N/A
Deciduous Understory Trees	1.5" (Measured 6" above root collar)	3.5'	N/A
Deciduous Scrubs 5' or Greater Mature Height	N/A	3'	N/A
Deciduous Scrubs 3' to 5' Mature Height	N/A	2'	N/A
Deciduous Scrubs 3' or Shorter Mature Height	N/A	15"	N/A
Evergreen Trees	N/A	6'	N/A
Evergreen Shrubs	N/A	2'	N/A

Ground Covers or Perennials	N/A	N/A	Minimum of a 4" container
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173.05 BUFFER YARD PROVISIONS.

These provisions apply when use is established in a more intensive zoning district (District A) which is adjacent to a less intensive zoning district (District B). The owner, developer, or operator of the use within District A shall install and maintain a screened buffer yard on his/her lot or site, as set forth in this section. Buffer yard requirements apply only to those districts indicated in Table 173-3. Buffer yards are not required for single-family, two-family, or townhouse use types in the more intensive zoning district.

1. The buffer yard dimensions set forth in Table 173-3 apply to zoning districts which share a common lot line or are adjacent but separated by an intervening alley.
2. When a street separates adjacent zoning districts requiring a buffer yard, the size of the buffer yard shall be one-half the required buffer yard set forth in Table 173-2.
3. Each required buffer yard must be entirely landscaped and free of paved areas, accessways, storage, or other disturbances.
 - a. Buffer areas shall follow Section 173.06 Screening Standards.

Table 173.05-03 – Screened Buffer Yard Requirements

		Less Intensive Adjacent District
		R-1*, R-2*, & R-3
More Intensive District	UC, CC, O	10 Feet
	LI	20 Feet
*Applies to residential uses only.		

173.06 SCREENING STANDARDS.

1. Application. Screening is required between adjacent zoning districts indicated in Table 173-3 when one or more of the following conditions in the more intensive zoning district is directly visible from and faces toward the boundary of the less intensive zoning district.

- a. The rear elevation of buildings.
- b. Outdoor storage areas or storage tanks, unless otherwise screened.
- c. Loading docks, refuse collection points, and other service areas.
- d. Machinery or areas housing a manufacturing process.
- e. Major on-site traffic circulation areas or truck and/or trailer parking.
- f. Sources of glare, noise, or other environmental effects.
- g. Mechanical equipment and utility appurtenances.

2. Opaque Barrier. An opaque barrier shall be provided which visually screens the conditions listed in subsection 1 from less intensive uses as follows:

- a. A solid wood and/or masonry fence or wall at least six feet in height.

- b. A landscaped screen, using a minimum of 50% evergreen plant material, capable of providing a substantially opaque, hedge-like barrier and attaining a minimum height of six feet within three years of planting. (Note: All planting materials shall conform to the minimum caliper/size requirements set in Table 173-02)
 - c. A landscaped earth berm with a maximum slope of three to one, rising no less than six feet above the existing grade of the lot line separating the zoning districts.
 - d. Any combination of these methods that achieves a cumulative height of six feet.
 - e. Machinery or equipment that raise above the six feet may need additional screening at the Zoning Administrator's discretion.
 - f. Utility equipment and appurtenances and screenings shall be consistent with the building design, colors, and materials.
3. Location of Screening Wall. A screening wall or fence shall be installed no closer to the less intensive zoning district than one-half the width of the required buffer yard.
4. Effect on Drainage. Screening shall not adversely affect surface water drainage.

173.07 SCREENING STANDARDS OF DUMPSTERS AND RECYCLING AREAS

- 1. Application. Screening is required to reduce the visibility of dumpster enclosures and recycling areas in R-3, MH, CC, UC, & LI.
- 2. Opaque Barrier. A six-foot opaque barrier shall be provided which visually screens the area.
 - a. A solid wood and/or masonry fence or wall at least six feet in height.
 - b. Must enclose the area around at least three sides.
 - c. Contain a pedestrian entrance.
 - d. Have an access gate that meets Metro Waste Authority standards.
- 3. Landscaping. If the area is located within a larger paved area, such as a parking lot, the following applies:
 - a. A landscape buffer of at least 5 feet shall be located along all sides of the non-gated sides.
 - b. One tree shall be provided in the landscape buffer.
 - c. Ornamental grasses, shrubs, or similar landscape materials shall cover a minimum of 50% of the buffer area.

173.08 LANDSCAPING MATERIALS AND INSTALLATION STANDARDS.

1. Restricted List of Plant Material. No plant material contained on the Restricted List of Plant Material shall be used to fulfill landscape requirements. This list is provided through the office of the Zoning Administrator. These plants are restricted from use because of problems with disease, maintenance, or suitability.

2. Official List of Plant Materials. All plant material installed in landscaped areas or buffer yards shall be consistent with the Official List of Plant Materials provided below or approved as a substitute by the office of the Zoning Administrator. All plant materials shall conform in size, species, and spacing with this section of the Zoning Code. The following materials are permitted, encouraged, or prohibited, based on categories. See the Iowa Urban Tree Council website for the ash tree replacement list.

3. Delay in Planting. All planting shall be installed prior to occupancy or commencement of a use. If the plantings cannot be installed prior to occupancy or commencement of a use due to seasonal conditions that may reduce survivability, the Zoning Administrator may issue a temporary certificate of occupancy and grant a delay of installation until the seasonal calendar dates of June 1 or November 1, whichever occurs first, and the property owner must place in an escrow account, established with the city, an amount which will cover 110% of the estimated cost of plants and installation.

Windsor Heights Tree/Plant List		
Partial Listing of Large Shade Trees for Planting on Public and Private Property		
Common Name	Botanical or Latin Name	Typical Mature Width/Height/Rate
Blackgum	<i>Nyssa sylvatica</i>	
Yellowwood	<i>Cladrastis kentuckea</i>	
Tuliptree	<i>Liriodendron tulipifera</i>	
Bald Cypress	<i>Taxodium distichum</i>	
River Birch	<i>Betula nigra</i>	
Hackberry	<i>Celtis occidentalis</i>	
Honeylocust varieties (thornless)	<i>Gleditsia triacanthos</i> var. <i>inermis</i>	72-100ft
Kentucky Coffetree – Male Only	<i>Gymnocladus dioicus</i>	
Ginkgo, Maidenhair Tree – Male Only	<i>Ginkgo biloba</i>	
Oaks	<i>Quercus</i> sp.	
Lindens	<i>Tilia</i> sp.	
American Elm (Dutch Elm Disease resistant cultivars)	<i>Ulmus americana</i> cultivars	

Windsor Heights Tree/Plant List		
Evergreens for Planting on Public and Private Property		
Common Name	Botanical or Latin Name	Typical Mature Width/Height/Rate

Densiformis Yews	Taxus x media 'Densiformis'	
Eastern Red Cedar	Juniperus virginiana	
Norway Spruce	Picea abies	
Blackhills Spruce	Picea glauca densata	
Colorado Blue Spruce	Picea pungens glauca	
Jack Pine	Pinus banksiana	
Ponderosa Pine	Pinus ponderosa	
Swiss Mountain Pine	Pinus mugho mughus	
Eastern White Pine	Pinus strobus	
White Fir	Abies concolor	
Arborvitae	Thuja occidentalis	
Colorado Blue Spruce (Fat Albert)	Picea pungens	

Windsor Heights Restricted Tree/Plant List		
Tree Planting Prohibited on Street Right-of-Way and Not Recommended for Private Property		
Common Name	Botanical or Latin Name	Typical Mature Width/Height/Rate
Amur Maple	Acer ginnala	
Box Elder	Acer negundo	
Silver Maples	Acer saccharinum	
Norway Maples	Acer platanoides	
Tree of Heaven	Ailanthus altissima	
White Birch*	Betula papyrifera	
Catalpa*	Catalpa species	
Ash	Fraxinus species	
Thorny Honeylocust	Gleditsia tricanthos	
Honeysuckle	Lonicera species	
Mulberry	Morus species	
Pin Oak*	Quercus palustris	
Black Locust	Robinia pseudoacacia	
White Poplar	Populus alba	
Lobardy Poplar	Populus nigra	
Cherries*	Prunus species	
Willows*	Salix species	
All evergreen trees*		
All “weeping” plants*		
Trees bearing fruits and nuts over one foot diameter*		
* - denotes allowable for private property		

Windsor Heights Tree/Plant List		
Dense Deciduous Shrub List for Screening		
Common Name	Botanical or Latin Name	Typical Mature Width/Height/Rate
Large		
Hedge Cotoneaster	Cotoneaster lucida	8-10¢ x 4-5¢
Ninebark	Physocarpus opulifolius 'Diablo'	8-10¢ x 8-10¢
Nanking Cherry	Prunus tomentosa	8-10¢
Preston Lilac	Syringa x prestoniae	
Arrowwood Viburnum	Viburnum dentatum	8¢ x 8¢
European Cranberry Viburnum	Viburnum opulus	8-12¢ x 10-12¢
American Cranberrybush Viburnum	Viburnum trilobum	10¢ x 8¢
Arbovitae – any species not prone to splitting		
Medium:		
Fragrant Sumac	Rhus aromatica	6¢ x 5¢
Alpine Current	Ribes alpinum	5¢ x 8¢
Bridal Wreath Spirea	Spirea x vanhouttei	6¢ x 6¢
Dwarf Korean Lilac	Syringa meyeri palibin	6¢ x 10¢
Compact American Cranberry Viburnum	Viburnum trilobum Compact cv.	6¢ x 6¢
Small:		
Dwarf Ninebark	Physocarpus opulifolius nanus	3¢ x 3¢
Potentilla varieties	Potentilla fruticosa cv.	3¢ x 3¢
Gro-Low Sumac	Rhus aromatica Gro-Low	2 x 4-5¢
Green Mound Alpine Current	Ribes alpinum Green Mound	3-4¢ x 2-3¢
Dwarf Blue Leaf Arctic Willow	Salix purpurea nana	4 x 4
Spirea varieties	Spirea bumalda cv.	2¢ x 2¢ – 4¢ x 4¢ – varies with cultivar
Japanese Spirea varieties	Spirea japonica cv.	2¢ x 2¢ – 4¢ x 4¢ – varies with cultivar
Dwarf European Cranberry Bush Viburnum	Viburnum opulus nanum	3¢ x 3¢
Densiformus Yews		
Hardy shrub roses		

Windsor Heights Tree/Plant List		
Evergreen Shrubs		
Common Name	Botanical or Latin Name	Typical Mature Width/Height/Rate
Chinese Junipers	<i>Juniperus chinensis</i>	
Blue Holly	<i>Ilex x meserveae</i>	
Sea Green Juniper	<i>Juniperus chinensis</i> 'Sea Green'	
Dwarf Creeping Juniper	<i>Juniperus horizontalis</i>	
Cross Spreading Japanese	<i>Taxus cuspidata</i>	
Hicks Yew	<i>Taxus x media</i> 'Hicksii'	
Taunton Yew	<i>Taxus media</i> 'Taunton'	
Densiformus Yews		
Green Velvet Boxwood	<i>Buxus x</i> 'Green Velvet'	
Green Mountain Boxwood	<i>Buxus x</i> 'Green Mountain'	
Rhododendron	<i>Rhododendron</i> "PJM"	

Windsor Heights Tree List		
Small Trees for Under High Wires (with upright branching to avoid pedestrians on sidewalks)		
Common Name	Botanical or Latin Name	Typical Mature Width/Height/Rate
Robin Hill Serviceberry	<i>Amelanchier x grandiflora</i> 'Robin Hill'	
Amur Maackia	<i>Maackia amurensis</i>	25¢ x 20¢
Adirondack Flowering Crabapple, white	<i>Malus Adirondack</i>	20¢ x 10¢
Centurion Flowering Crab, rose-red	<i>Malus Centurion</i>	20¢ x 12¢
Red Barron Flowering Crab, rose	<i>Malus Red Barron</i>	18¢ x 8¢
Sentinel Flowering Crab, white	<i>Malus Sentinel</i>	20¢ x 12¢
Ivory Silk Japanese Tree Lilac	<i>Syringa reticulata</i> 'Ivory Silk'	20¢ x 15¢

Windsor Heights Tree List		
Small Trees for Under High Wires (where sidewalk clearance is not an issue)		
Common Name	Botanical or Latin Name	Typical Mature Width/Height/Rate
Shadblow Serviceberry, tree form	<i>Amelanchier canadensis</i>	25¢ x 15¢
Autumn Brilliance Serviceberry	<i>Amelanchier g.</i> Autumn Brilliance	20¢ x 25¢
American Hornbeam	<i>Carpinus caroliniana</i>	25¢ x 20¢
Eastern Redbud	<i>Cercis canadensis</i>	25¢ x 20¢
Pagoda Dogwood	<i>Cornus alternifolia</i>	20¢ x 15¢
Washington Hawthorn	<i>Crataegus phaenopyrum</i>	20¢ x 20¢

Winter King Hawthorn	Crataegus v. Winter King	20¢ x 20¢
Common Witch-hazel	Hamamelis virginiana	12-15¢ x 12¢
American Hophornbeam	Ostrya virginiana	35¢ x 25¢
Cherry – Manchurian cherry	Prunus maackii	25¢ x 25¢
Chanticleer Flowering Pear	Pyrus calleryana ‘Chanticleer’	35¢ x 15¢

Windsor Heights Tree List		
Permitted Disease Resistant Flowering Crabapples (not a comprehensive list)		
Common Name	Botanical or Latin Name	Typical Mature Width/Height/Rate
Adams Crabapple (red to pink flowers, red persistent fruit)	Malus ‘Adams’	15¢ x 20¢
Baccata ‘Jackii’	Malus baccata ‘Jackii’	20¢ x 20¢
Beverly (white flowers, red fruit)	Malus (crabapple) x. ‘Beverly’	20¢ x 20¢
Candied Apple (pink flowers, red persistent fruit,)	Malus hybrida	15¢ x 15¢
Callaway	Malus x ‘Callaway’	20¢ x 20¢
Cardinal	Malus ‘Cardinal’	16¢ x 20¢
David (white flowers, red persistent fruit)	Malus ‘David’	12¢ x 12¢
Donald Wyman (white flowers, red persistent fruit)	Malus ‘Donald Wyman’	20¢ x 24¢
Golden Raindrops (white flowers, yellow persistent fruit)	Malus ‘Schmidtcutleaf’	20¢ x 15¢
Jewelberry (white flowers, red fruit)	Malus ‘Jewelberry’	8¢ x 12¢
Liset (dark red flowers, maroon fruit)	Malus x moerlandsii ‘Liset’	15¢ x 15¢
Louisa (pink flowers, yellow fruit)	Malus ‘Louisa’	15¢ x 15¢
Ormiston Roy (white flowers, amber persistent fruit)	Malus ‘Ormiston Roy’	20¢ x 25¢
Pink Princess (pink flowers, deep red fruit)	Malus ‘Parrsi’	8¢ x 12¢
Prairifire (rose-red flowers, dark red persistent fruit)	Malus ‘Prairifire’	20¢ x 20¢
Professor Sprenger (white flowers, orange-red persistent fruit)	Malus ‘Professor Sprenger’	20¢ x 20¢

Robinson (deep pink flowers, red fruit)	Malus 'Robinson'	25¢ x 20¢
Sargent (white flowers, red persistent fruit)	Malus sargentii	8¢ x 12¢
Strawberry Parfait	Malus 'Strawbery Parfait'	18¢ x 22¢
Sugar Tyme (white flowers, red fruit)	Malus 'Sutyzam'	18¢ x 15¢
Zumi Calocarpa (white flowers, red fruit)	Malus x zumi 'Calocarpa'	15¢ x 15¢

Windsor Heights Tree/Plant List		
Plants with Good to Moderate Salt Tolerance		
Common Name	Botanical or Latin Name	Typical Mature Width/Height/Rate
Deciduous Shrubs		
St. John's Wort	Hypericum prolificum	4¢ x 4¢
Lilacs (Miss Kim)	Syringa pubescens subsp. patula	
Northern Bayberry	Myrica pennsylvanica	9¢ x 6¢
Mockorange, size varies with species	Philadelphus spp. & cvs.	
Cinquefoil, 3¢ x 3¢	Potentilla spp. & cvs.	3¢ x 3¢
Smooth Sumac	Rhus glabra	10¢ x 5¢
Staghorn Sumac	Rhus typhina	24¢ x 12¢
Snowberry	Symphoricarpos albus	3¢ x 3¢
Common Lilac	Syringa vulgaris	12¢x10¢
Arrowwood Viburnum	Viburnum dentatum	6¢ x 6¢
Deciduous Trees:		
Common Horsechestnut	Aesculus hippocastanum	
Shadblow Serviceberry	Amelanchier Canadensis	
Northern Catalpa	Catalpa speciosa	
Hackberry	Celtis occidentalis	
Cockspur Hawthorn	Crataegus crus-galli	
Maidenhair/ Ginkgo	Ginkgo biloba - Male only	
Honeylocust	Gleditsia tricanthos	
Kentucky Coffeetree) – Male only	Gymnocladus dioicus	
Cottonwood	Populus deltoides	
Quaking Aspen	Populus tremuloides	

Black Cherry	<i>Prunus serotina</i>	
Choke Cherry	<i>Prunus virginiana</i>	
White Oak	<i>Quercus alba</i>	
Burr Oak	<i>Quercus macrocarpa</i>	
Red Oak	<i>Quercus rubra</i>	
Groundcovers:		
Bugleweed	<i>Ajuga reptans</i>	
Goutweed	<i>Aegopodium podagraria</i>	
Creeping Cotoneaster	<i>Cotoneaster adpressa</i>	
Bearberry Cotoneaster	<i>Cotoneaster dammeri</i>	
Rockspray Cotoneaster	<i>Cotoneaster horizontalis</i>	
Hesse Cotoneaster	<i>Cotoneaster horizontalis</i> 'Hessei'	
Wintercreeper	<i>Euonymus fortunei</i> cultivars	
English Ivy	<i>Hedera helix</i>	
Plantain Lily	Cultivars <i>Hosta</i> cultivars	
Japanese Garden Juniper	<i>Juniperus chinensis procumbens</i>	
Gro-low sumac	<i>Rhus aromatica</i> 'Gro-low'	
Periwinkle	<i>Vinca minor</i>	

CHAPTER 174

ZONING CODE – ACCESS & PARKING

174.01 Purpose

174.02 General Provisions

174.03 Pedestrian Connectivity

174.04 Schedule of Off-Street Parking Requirements

174.05 Short-Term Bike Parking

174.06 Long-Term Bike Parking

174.07 Parking Facility Location

174.08 Parking for People with Disabilities

174.09 Off-Street Parking Design Standards

174.10 Off-Street Loading

174.11 Parking for Personal Vehicles

174.12 Parking for Recreational Vehicles

174.13 Storage and Parking of Unlicensed Vehicles

174.01 PURPOSE.

The Access & Parking Regulations require that developments provide safe, direct, and convenient access for pedestrians, bicycles, automobiles, and loading in proportion to the need created by each use. The regulations further establish standards for the functional design of parking facilities. These regulations are intended to accommodate vehicles in a functionally satisfactory manner and to minimize external effects on neighboring properties.

174.02 GENERAL PROVISIONS.

1. Applicability. Off-street parking shall be provided for any new building constructed, for new uses or conversions of existing buildings, or for enlargements of existing structures.
2. Heavy commercial vehicles, including tractor cab units weighing more than 2.5 tons gross empty weight, shall not be parked on any lot within the R-1, R-2, R-3, and MH residential zoning districts. Recreational vehicles meeting the definition of heavy commercial vehicles shall only be allowed on any lot within the R-1, R-2, R-3, and MH residential zoning districts if they comply with the special provisions listed below.
3. Exemptions. Any use within the UC Urban Center District is exempt from the off-street parking requirements provided by Section 174.03. Any off-street parking facility constructed in the UC District after the effective date of this Zoning Code must comply with the design standards set forth in this chapter.

174.03 PEDESTRIAN CONNECTIVITY

1. Sites shall be designed with delineated sidewalks, walkways, and paths to provide continuous circulation throughout the site connecting principal structures, dwelling units, parking areas, parking garages, and other prominent features. Pedestrian connection(s) shall be made between the internal circulation system and the adjacent public sidewalk or trail systems. The site shall be organized so that the buildings frame and reinforce pedestrian circulation between lots.

2. Sites shall be designed to limit the number of pedestrian and motorist conflict points.
3. Sidewalks shall be a minimum of six (6) feet unless specifically exempted by the Administrative Official or other Administrative Official.
4. Developments shall have pedestrian amenities such as walkways, benches, etc.
5. Enhanced pedestrian elements at the sidewalk level including decorative lighting, seating or low sitting walls, planters, enhanced paving techniques, etc., shall be incorporated into the theme.
6. To promote a higher level of pedestrian awareness, the use of alternate paving materials to designate pedestrian traffic areas from vehicular use areas and travel lanes is required. Mere cuts in the concrete will not be sufficient to meet the requirements of this section.

174.04 SCHEDULE OF OFF-STREET PARKING REQUIREMENTS.

Parking facilities for each use shall be provided in accord with the minimum requirements set forth in Table 174-1.

1. When a computation of required parking results in a fraction of 0.5 or greater, the requirement should be rounded up to the next whole number.
2. Unless otherwise indicated, parking requirements are based on gross floor area. Gross floor areas for the purpose of this calculation exclude any interior space used for the parking or loading of vehicles.
3. When parking requirements are computed on the basis of capacity, capacity shall be determined by the Building Code in effect for the City at the time the use is established.
4. For sites with more than one use, the parking requirement shall be the sum of spaces required for each use, except as provided below.
5. The Board of Adjustment may authorize an adjustment in the total parking requirement for separate uses located on the same site or for separate uses located on adjoining sites and served by the same parking facility. The Board shall consider at least the following criteria in determining approval of such an adjustment:
 - a. The characteristics and time of operation of each use, and differences in projected peak parking demand.
 - b. Potential reduction in total expected vehicle movements afforded by multiple uses of the parking facilities.
 - c. Functional design of the development and its parking facilities.
 - d. Evidence of a written agreement that provides for the joint use of parking facilities within 300ft of the use.

Table 174.04-01 – Minimum Off-Street Parking Requirements

Use	Required Spaces
Administration	1 space for 1,000 square feet
Agricultural Sales/Service	1 space per 5,000 square feet
Landfills (All types)	No requirement
Auto Rental and Sales	1 space per 1,000 square feet

Auto Service	1 space per 500 square feet
Body Repair	1 space per 500 square feet
Broadcasting Tower	No requirement
Business Support	1 space per 500 square feet
Campground	1 space per camping unit
Cemetery	No requirement
Civic Organizations	1 space per 1,000 square feet
Bars	1 space per 500 square feet
Commercial Recreation (All types)	1 space per 500 square feet
Communications Services	1 space per 500 square feet
Community Garden	No requirement
Construction Sales	1 space per 2,000 square feet
Construction Yards	1 space per 5,000 square feet
Consumer Services	1 space per 500 square feet
In-Patient Services	1 space for 1,000 square feet
Convenience Storage	1 space per 20 storage units
Crop Production	No requirement
Cultural Services	1 space per 2,000 square feet
Custom Manufacturing	1 space per 2,000 square feet
Day Care Services	1 space per 500 square feet
Two Unit Residential	1 space per dwelling unit
Equipment Sales/Service	1 space per 1,000 square feet
Food Sales (all types)	1 space per 200 square feet
Financial Services	1 space per 1,000 square feet
Gaming Facilities	1 space per 500 square feet
General Industry	1 space per 2,000 square feet or as approved by the Zoning Administrator
General Offices	1 space per 500 square feet
General Retail Services (All types)	1 space per 500 square feet
Group Care Facility	1 space per 1,000 square feet
Group Home	1 space per 1,000 square feet
Group Residential	1 space for each two residents
Guidance Services	1 space per 1,000 square feet
Health Care (Small-scale)	1 space per 1.5 beds

Health Care (Large-scale)	1 space per 1.5 beds
Heavy Industry	1 space per 5,000 square feet or as approved by the Zoning Administrator
Horticulture	No requirement
Library/Museum/Cultural Facility	1 space per 1,000 square feet
Light Industry	1 space per 1,000 square feet or as approved by the Zoning Administrator
Liquor Sales	1 space per 500 square feet
Lodging	1 space per sleeping room
Maintenance Facilities	1 space per 1,000 square feet
Medical Offices	1 space per 500 square feet
Mobile Home Residential	1 space per dwelling unit
Multi-Family Residential	1 space per dwelling unit
Non-Putrescible Landfill	No requirement
Pawn Shop	1 space per 500 square feet
Personal Improvement Services	1 space per 250 square feet
Personal Services	1 space per 500 square feet
Pet Services	1 space per 1,000 square feet
Railroad Facilities	1 space per 1,000 square feet
Resource Extraction	1 space per 5,000 square feet
Restaurants (Drive-In)	1 space per 500 square feet
Restaurants (General)	1 space per 500 square feet
Salvage Services	1 space per 2,000 square feet or as approved by the Zoning Administrator
Single-Family Residential	2 spaces per dwelling unit
Commercial breeders	1 space per 1000 square feet
Surplus Sales	1 space per 2,000 square feet
Trade Services	1 space per 500 square feet
Veterinary Services	1 space per 500 square feet
Warehousing	1 space per 5,000 square feet or as approved by the Zoning Administrator

174.05 SHORT-TERM BIKE PARKING

1. Minimum Number of Required Off-Street Parking Spaces for Bicycles
 - a. Refer to Table 174-3 for minimum space requirements.
2. Dimensions
 - a. Each rack must be at least 3' apart from each other and 6' long. (There shall be an unimpeded rectangle of space centered on the bike rack that is 6' long and 3' wide.)

3. Location of Bicycle Parking Areas
 - a. Bicycle parking shall be placed within 100' of and clearly visible from the main entrance.
 - b. The zoning administrator may approve an alternate location provided that the location meets the intent of this section.
4. Design and Construction of Bicycle Parking Areas
 - a. All bicycle parking areas shall be hard surfaced with asphalt, concrete, pervious pavement, pavers, or other material to provide a durable, dust-free surface.
 - b. All bike racks shall be:
 - A. Securely anchored;
 - B. Able to support the bicycle frame in at least two places;
 - C. Allow the locking of a bicycle frame and at least one wheel with a U-lock.
 - c. All short-term bicycle racks shall either be an "inverted u" or "post & ring" style.
 - d. All bicycle parking spaces shall be constructed in accordance with the latest version of the Association of Pedestrian & Bicycle Professionals Bicycle Parking Guidelines.
5. Minimum Number of Required Off-Street Parking Spaces for Bicycles
 - a. Refer to Table 174-3 for minimum requirements.

174.06 LONG-TERM BIKE PARKING

1. Minimum Number of Required Off-Street Parking Spaces for Bicycles
 - a. Refer to Table 174-3 for minimum space requirements.
2. Dimensions
 - a. The total space of the bike room shall be at least 18 square feet for each required bike space with a minimum overall size of 100sq. ft.
3. Location of Bicycle Parking Areas
 - a. Bicycle parking shall be located on the same site and within the building, or within 300' of the main entrance.
 - b. The zoning administrator may approve an alternate location provided that the location meets the intent of this section.
4. Design and Construction of Bicycle Parking Areas
 - a. All bicycle parking areas shall be hard surfaced with asphalt, concrete, pervious pavement, pavers, or other material to provide a durable, dust-free surface.
 - b. All bicycle parking areas shall be within a building or provided with a permanent cover including, but not limited to, roof overhangs, awnings, or bicycle storage lockers.
 - c. All bike racks shall be:
 - A. Securely anchored;
 - B. Able to support the bicycle frame in at least two places;
 - C. Allow the locking of a bicycle frame and at least one wheel with a U-lock.
 - d. Long-term bicycle racks shall be:
 - A. "inverted u" or "post & ring" style or
 - B. "staggered wheel," "well-secure," "vertical," or "two-tier" style with no more than 75% of total long-term bicycle racks being this type.

- e. All bicycle parking spaces shall be constructed in accordance with the latest version of the Association of Pedestrian & Bicycle Professionals Bicycle Parking Guidelines.
- 5. Minimum Number of Required Off-Street Parking Spaces for Bicycles
 - a. Refer to Table 174-3 for minimum requirements.

Table 174.06-01 – Minimum Bicycle Parking Requirements

Use Type	Short Term Spaces required	Long-Term Spaces
Agricultural Use Types	None required	None required
Residential Use Types	1 per 4 dwelling units	1 per 10 dwelling units
Commercial Use Types	1 per 4,000sq.ft.	1 per 10,000sq.ft.
Civic Use Types	1 per 4,000sq.ft.	1 per 10,000sq.ft.
Office Use Types	1 per 4,000sq.ft.	1 per 10,000sq.ft.
Industrial Use Types	None required	1 per 20,000sq.ft.

174.07 PARKING FACILITY LOCATION.

- 1. Residential Parking.
 - a. Off-street parking for residential one or two-family uses shall be located on the same lot or site as the use.
 - i. Restriction. Off-street parking shall not be located in the required front yard setback.
 - ii. Continuous. The parking stalls shall be continuous with the improved drive.
 - b. Off-street parking areas for multi-family residential uses shall be at least six feet from any residential building and shall not be located within a required front yard.

174.08 OFF-STREET PARKING DESIGN STANDARDS.

- 1. Dimensions
 - a. All parking spaces shall follow Table 174-4 Minimum Parking Lot Design Requirements.
- 2. Pavement and Drainage.

- a. Off-street parking facilities shall be hard surfaced and maintained with materials sufficient to prevent mud, dust, or loose material. Acceptable hard surface materials shall include concrete, asphalt, brick, or concrete pavers.
 - A. Off-street parking facilities shall be designed and built to prevent the free flow of water onto adjacent properties or public rights-of-way.
- 3. Areas where parking lots or drive lanes are visible from the public street shall provide a significant level of screening through the use of any of the following:
 - A. Earthen berms;
 - B. Three feet or higher in conjunction with vegetation;
 - C. Landscaped walls;
 - D. Walls constructed for the retainment of soil which are greater than 4 feet in height shall be designed by an individual knowledgeable and certified in structural engineering;
 - E. Walls may be brick, individual decorative modular wall stone, natural stacked wall, or filed stone. Walls composed of landscape timbers or other wood products are not desired due to the deterioration potential of the material. Wood walls may be used, with approval by the Administrative Official or Planning and Zoning Commission and City Council, in areas where views of the wall are minimal.
 - F. Plants shall be at least every 10ft along all types of walls to soften the visual impact, visually break up long expanses of the wall, and to visually anchor it to the site. Accessory plant screening shall be of evergreen materials.
 - G. Perimeter masonry screen walls are required accessory plants at least every 10ft. Where possible, landscaping shall be provided within a minimum 4' wide planting bed and include trees, shrubs, and/or groundcovers. Landscaping shall coordinate with the streetscape landscaping. Landscaping shall be kept in a neat and orderly manner.
- 4. Landscape and Screening Requirements. Unless otherwise noted, each unenclosed parking facility of over 3,000 square feet shall comply with the following regulations:
 - a. Each unenclosed parking facility shall provide a minimum landscaped buffer of ten feet along any street property line.
 - b. Each parking facility that abuts a residential district shall provide a ten-foot landscaped buffer along its common property line with the residential district.
 - c. Any parking facility which abuts property in a residential district shall provide a fence, wall, landscape screen, or earth berm not less than four feet in height for the length of the common boundary. A grade change, terrace, or other site feature which blocks the sight line of headlights into a residential property may satisfy this requirement, subject to the determination of the Zoning Administrator.
 - d. All off-street parking areas shall include at least 1 required landscape island for every 12 parking spaces.
 - A. Each required landscape island shall measure a minimum of 190 square feet in area.

- B. Each required island shall contain a minimum of 1 deciduous shade tree or 1 deciduous ornamental tree.
 1. At least 10% of the island's land area shall have plant material other than sod or grass installed, not including the minimum required tree.
 2. The remainder of the landscape pods and islands shall be sodded or mulched. If mulched, mulch shall be replenished annually; volcano mulching around trees is not permissible. Pea gravel and lava rocks will not be allowed.
- C. Parking islands should be located at the end of parking bays so as to define vehicular and pedestrian traffic patterns.
- D. The zoning administrator may approve a design where landscape islands are aggregated into one or more larger landscape islands.
- e. Interior landscaping shall be credited toward the satisfaction of overall landscaping requirements set forth in Chapter 173 of this Zoning Code.
5. Entrances and Exits.
 - a. Adequate access to each parking facility shall be provided by means of clearly defined and limited driveways or access points. Such driveways shall be designed to direct nonresidential traffic away from residential areas.
 - b. Parking facilities other than driveways for single-family, two-family, or mobile home residential uses must permit vehicles to enter streets in a forward position.
 - c. Shared driveways between abutting properties are encouraged, provided that an access easement exists between all property owners.
6. Lighting. Lighting is required for all parking lots.
 - a. Lighting used to illuminate any off-street parking area shall be arranged to direct light away from residential uses and the right-of-way.
7. Maintenance. All parking facilities shall be maintained to assure the continued usefulness and compatibility of the facility. Acceptable maintenance includes keeping the facility free of refuse, debris, carts, and litter; maintaining parking surfaces in sound condition; maintaining aisle lines and the painted surfaces of signs; and providing proper care of landscaped areas.
8. Adjustment. For uses subject to conditional use permit approval, the Board of Adjustment may adjust the minimum requirements of this section, in order to provide design, usability, attractiveness, or protection to adjoining uses in a manner equal to or greater than the minimum requirements of this chapter.

Table 174.08-01 – Minimum Parking Lot Design Requirements

Space Angle	Space Width	Parking Row Depth	Curb Width	Drive Aisle Width: One-Way	Drive Aisle Width: Two-Way
Parallel (0°)	8'	8'	22'	12'	22'
45°	8'6"	18'	12'9"	15'	24'
60°	9'	19'	10'5"	18'	24'
Perpendicular(90°)	9'	18'	9'	24'	24'

174.09 OFF-STREET LOADING.

1. Loading Requirement. Any use which involves the receipt or distribution of freight, merchandise, supplies, vehicles, or equipment as part of its typical operation shall provide and maintain adequate space for off-street loading and circulation. Loading areas shall be designed to avoid undue interference with the public use of streets and sidewalks.

Schedule of Loading Spaces. Loading spaces for each use requiring them shall be provided in accord with the minimum requirements set forth in Table 174-5 Off-Street Loading Requirements Structures.

Table 174.09-01 – Off-Street Loading Requirements Structures

Gross Floor Area of Use (square feet)	Number of Required Loading Spaces
5,000 or less	None
5,001 – 25,000	1
25,001 – 75,000	2
Larger than 75,000	3

3. Design Standards.

A. Each loading space shall be at least 10 feet wide by 50 feet long, with a vertical clearance of at least 14 feet.

B. Paving of loading spaces and access areas shall be permanent, durable, and free of dust.

C. Off-street loading areas are subject to the landscaping and buffering requirements for parking facilities set forth in this chapter.

174.10 PARKING FOR PEOPLE WITH DISABILITIES.

Each off-street parking facility shall provide the number of parking spaces set forth in Table 174-6 designed and designated for use by people with disabilities. Design criteria and dimensions are set forth in the Off-Street Parking Design Standards and the requirements of the Americans with Disabilities Act. Please refer to sections 208 and 502 of the 2010 ADA Standards for Accessible Design for parking spaces and 209 and 503 of the 2010 ADA Standards for Accessible Design for passenger loading zones.

1. Location. In parking lots or garages, accessible parking spaces must be located on the shortest accessible route to the accessible entrance. An accessible route is the path a person with a disability takes to enter and move through a building or facility.
2. Access Aisles. Accessible parking spaces must have access aisles. Access aisles provide a designated area for people who use wheelchairs or other mobility devices to get in and out of their car or van. Mobility devices allow people with disabilities to move about independently. They include walkers, canes, crutches, braces, manual or power wheelchairs, Segways, and electric scooters. Access aisles shall be:
 - a. Marked
 - b. The same length as the space

- c. Level with the parking space.
- 3. Van Accessible.
 - a. The first space and at least one out of every six parking spaces shall be van accessible.
 - A. Van accessible spaces option 1:
 - 1. Be at least 132" inches wide.
 - 2. Have an access aisle at least 60" wide.
 - 3. Have no more than a 1.48 (2.08%) slope in all directions.
 - 4. Provide at least 98" of vertical clearance (van height) for the parking space, access aisle, and vehicular route.
 - 5. Have a surface that is firm, stable, and slip resistant.
 - 6. Have two signs, the international symbol of accessibility and another stating that the space is van accessible, mounted at least 60 inches above the ground measured to the bottom of the sign.
 - B. Van accessible spaces option 2:
 - 1. Be at least 96" inches wide.
 - 2. Have an access aisle at least 96" wide.
 - 3. Have no more than a 1.48 (2.08%) slope in all directions.
 - 4. Provide at least 98" of vertical clearance (van height) for the parking space, access aisle, and vehicular route.
 - 5. Have a surface that is firm, stable, and slip resistant.
 - 6. Have two signs, the international symbol of accessibility and another stating that the space is van accessible, mounted at least 60 inches above the ground measured to the bottom of the sign.
- 4. Car Accessible. All spaces that are not van accessible shall be car accessible as defined below.
 - a. Be at least 96" wide.
 - b. Have an access aisle at least 60 inches wide.
 - c. Have no more than a 1.48 (2.08%) slope in all directions.
 - d. Have a surface that is firm, stable, and slip resistant.
 - e. Have a sign with the international symbol of accessibility on it, mounted at least 60 inches above the ground measured to the bottom of the sign.

Table 174.10-01 – Accessible Parking Requirements

Number of Stalls	Minimum Number of Required Accessible Spaces
01-25	1
26-50	2
51-75	3
76-100	4
101-150	5
151-200	6
201-300	7

301-400	8
401-500	9
501-1,000	2% of total parking provided
1,001 and over	20, plus 1 for every 100 stalls over 1,000
*One in every six accessible spaces (but not less than one) shall be served by an access aisle with a minimum width of 96 inches and shall be designated as "Van Accessible."	

174.11 PARKING FOR PERSONAL VEHICLES.

1. Applicability. This section permits the parking of personal vehicles on a single lot in a residential district subject to specific conditions. Personal vehicles include passenger cars; vans; pickup trucks, recreational vehicles, camper shells, toppers, and other similar items intended for attachment to a personal vehicle; Trucks, tractor cab units, trailers, trailers longer than 20 feet, and vehicles over 2.5 tons gross empty weight shall be defined as heavy commercial vehicles.

2. Location of Parking for Personal Vehicles.

- a. Parking is permitted within any enclosed structure when such structure conforms to the regulations of its zoning district.
- b. Parking of personal vehicles is permitted on a paved driveway (outside of an enclosed structure) within the front yard setback, but shall in no case encroach upon the public right-of-way.
- c. Parking of personal vehicles may occur in the rear yard setback (outside of an enclosed structure and not on the front yard paved driveway) if such parking meets the following conditions:
 - A. The parking space is provided on a surface consisting of asphalt, concrete, brick, or paving stones made of one of the aforementioned substances. Parking is prohibited on gravel, regrind, crushed concrete/asphalt, sand, dirt, grass or other surfaces not mentioned in this section.
 - B. The parking surface shall be no less than the overall length and width of the vehicle parked on the surface.
 - C. The parking surface shall not exceed the maximum impervious coverage limit for the lot.
- d. In areas not zoned for commercial use, parking of vehicles on private property for the purpose of sale of such vehicles is prohibited.

174.12 PARKING FOR RECREATIONAL VEHICLES

1. Special Provisions for Recreational Vehicles and Boats. Parking and storage of recreational vehicles and boats within residential districts are subject to the following additional conditions. These conditions are in addition to those requirements for the parking of personal vehicles.

- a. Recreational vehicles and boats must be maintained in a clean, well-kept state.
- b. Recreational vehicles and boats equipped with liquefied petroleum gas containers must ensure that such containers meet the current standards of the Interstate Commerce

Commission, the United States Department of Transportation, or the American Society of Mechanical Engineers. Any valves must be closed at all times that the vehicle is not in preparation for immediate use. Leaks in containers must be repaired immediately.

- c. Recreational vehicles may be used as temporary housing by non-paying guests for a maximum of three consecutive days and no more than 14 days total during any calendar year. Cooking in the recreational vehicle is prohibited at all times.
- d. Recreational vehicles and boats may not be permanently connected to utility lines.
- e. Recreational vehicles and boats may not be used for the storage of goods, materials, or equipment other than those items which pertain to the use of the vehicle.
- f. Recreational vehicles and boats shall be parked outside of required front yard setbacks.
- g. No more than two recreational vehicles and/or boats may be parked on a single property at any one time. Any recreational vehicle or boat parked on a property must be owned in whole or in part by the resident of the property.

(Section 174.08 – Ord. 21-03 – May 21 Supp.)

174.13 STORAGE AND PARKING OF UNLICENSED OR OTHER VEHICLES.

1. The storage or keeping of motor vehicles not having a properly issued current motor vehicle registration and current motor vehicle license plate properly displayed is prohibited on any lot, parcel, or tract of land or part thereof, situated within the zoning jurisdiction of the City; provided, conformance with the following shall not constitute a violation of this section:

- a. The storage of any unlicensed and/or unregistered motor vehicle in a fully enclosed garage.
- b. Parking, storage, or keeping, other than in a fully enclosed garage of any non-operable motor vehicle is prohibited on any residential zoned lot, parcel or tract of land or part thereof, situated within the zoning jurisdiction of the City; provided, however, automobiles that are non-operable by reasons of repair work being done thereon may be parked on the residential lot of the owner of said automobile within the City's zoning jurisdiction under the following conditions:
 - A. The automobile is owned by the occupier of the premises and registered to him/her at that address.
 - B. The period of said repair work does not exceed ten days in duration.
 - C. Repair work is at all times conducted on a paved driveway.
 - D. No more than one automobile in need of repair is situated on the premises at the same time.

CHAPTER 175

ZONING CODE – SIGN REGULATIONS

175.01 Purpose	175.07 Use of Compatible Materials
175.02 General Permit Procedures	175.08 Sign Area
175.03 Exempt Signs	175.09 Permitted Signs
175.04 General Sign and Street Graphics Regulations	175.10 Nonconforming Signs
175.05 Basic Design Elements for On-Premises Signs	
175.06 Other Design Elements	

175.01 PURPOSE.

The Sign Regulations provide standards for communicating information in the environment of the City and its jurisdiction. The regulations recognize the need to protect public health, safety, and welfare; to maintain the City's attractive appearance; to provide for adequate business identification, advertising, and communication of information; all while protecting and promoting the free speech and expression rights of citizens within Windsor Heights. Any complaint received regarding a sign that comports with these regulations does not constitute a violation of this code section.

175.02 GENERAL PERMIT PROCEDURES.

Any installation, modification, or expansion of any sign which is not exempt from the provisions of this chapter shall be subject to the following permit procedure.

1. Maintenance of Valid Sign Permit. The owner of a property containing signs requiring a permit under this Zoning Code shall at all times maintain in force a sign permit for such property. Sign permits may be issued for individual zoned lots, tenants, or sign owners. A sign permit may be revoked if the sign is not maintained in good condition.
2. Any person who displays a sign in compliance with this code may substitute the message on that sign without first securing any additional approval, permitting, or notice, provided that any such substitution would not result in the sign becoming noncompliant.
3. Nothing in this code is intended or shall be construed so as to prevent the strengthening or restoration to a safe condition of a nonconforming sign for purposes of public health and safety.
4. Sign Permit Applications. All applications for sign permits shall be submitted to the Zoning Administrator in accordance with application specifications established by the ordinance.
5. Application Fees. Each application for a sign permit shall be accompanied by any applicable fees, which shall be established by the Council from time to time by resolution.
6. Permit Expiration. If a permanent sign is not constructed in accordance with an approved permit within six months of the date of approval, such permit shall lapse. Permits on non-permanent signs lapse in accordance with the timeline identified on the permit. After 60 days, permits are required to maintain temporary signs or more than a single temporary sign with a maximum of two renewals.
7. Assignment of Sign Permits. A current and valid sign permit shall be freely assignable to a successor as owner of the property or holder of a business license for the same premises.

175.03 EXEMPT SIGNS

The following signs are permitted in any zoning district and are exempt from other provisions of this chapter.

1. Up to three non-temporary signs on R-1, R-2, or R-3 that are smaller than 4 square feet in area.
2. Official signs authorized by a government or governmental subdivision, which give traffic, directional, or warning information, or other official information.
3. Temporary signs less than 8 square feet.
4. Neighborhood or subdivision identification signs under 50 square feet.
5. Street numbers or address signs that identify the address of a lot, structure, or establishment.
6. Signs which are not visible from a public right-of-way, private way, or court or from a property other than that on which the sign is installed, such as window signs.
7. Sidewalk signs which include two sided portable signs that are placed on the sidewalk outside of an establishment. 1 sign maximum per business and they must not interfere with a minimum of 5 feet of sidewalk clearance at all times.

175.04 GENERAL SIGN AND STREET GRAPHICS REGULATIONS.

1. Compliance. Each sign or part of a sign erected within the zoning jurisdiction of the City must comply with the provisions of this chapter and of other relevant provisions of this Code of Ordinances.
2. Resolution of Conflicting Regulations. This chapter is not meant to repeal or interfere with the enforcement of other sections of this Code of Ordinances. In cases of conflicts between Code sections, or State or Federal regulations, the more restrictive regulations shall apply, except where State law or the State Constitution preempts municipal law, in which case State law or the State Constitution will govern, or where Federal law of the U.S. Constitution preempts State and municipal law, in which case Federal law or the U.S. Constitution will govern.
3. Prohibited Signs. The following signs are prohibited in all zoning districts.
 - a. Any sign which is structurally unsafe, unsafely installed, or otherwise hazardous to physical safety.
 - b. Any sign that obstructs free ingress to or egress from a fire escape, door, window, or other required access way to or from a building or site.
 - c. Any sign not maintained in good condition.
 - d. Any sign that blocks the vision clearance areas or would obstruct a driver's clear line of sight of traffic or pedestrians, or which obscures official signs or signals.
 - e. Any sign that interferes with the view of, or is confused with, any traffic control sign or device, and any sign that misleads or confuses traffic flow. A sign's position, size, shape, color, and illumination, but not its content, shall be considered when making such a determination.
 - f. Abandoned signs, which must be removed within six months of the date of abandonment.
 - g. Electronic changeable copy signs which incorporate in any manner any rolling, flashing, pulsating, rotating, beacons, or moving lights.
 - h. Any sign nailed, fastened, or affixed to any tree.

- i. Any sign that otherwise violates this sign code.
 - j. Any sign displaying any obscene matter, as that term is defined by Iowa Code Chapter 728.
4. **Buffer Yards.** No sign other than on-premises directional signs shall be placed within any buffer yard required by Chapter 173, Landscaping and Screening Standards, except buffer yards adjacent to intervening major streets.
5. **Vision-Clearance Triangle.** No sign may project into or be placed within a vision-clearance area.
6. **Removal of Signs.** If a sign owner's business, profession, commodity, service, or other activity or use formerly occupying the site is discontinued, the sign must be removed within fifteen (15) days of closure. If the owner does not remove the sign, the City will remove it at the owner's expense.

175.05 BASIC DESIGN ELEMENTS FOR ON-PREMISES SIGNS.

- 1. **Professional Design and Construction.** All signs must be designed and constructed by an individual or company pre-approved by the City and familiar with the City's sign ordinance. The proposed individual or company shall be designated on the applicant's sign permit and approved by the City in advance of sign construction.
- 2. **Wall Signs and Graphics.** Wall signs and graphics are subject to the following general regulations.
 - a. A wall sign shall not extend more than 12 inches from the wall to which it is attached.
 - b. A wall sign must be parallel to the wall to which it is attached.
 - c. A wall sign may not extend beyond the corner of the wall to which it is attached, except where attached to another wall sign, it may extend to provide for the attachment.
 - d. A wall sign may not extend beyond its building's roofline.
 - e. A wall sign attached to a building on its front property line may encroach upon public right-of-way by no more than 12 inches. Such a wall sign shall provide a minimum clearance of eight feet, six inches.
 - f. For the purpose of calculating permitted sign areas pursuant to this chapter, signs painted on the walls of buildings shall be considered wall signs.
 - g. Where permitted, canopy signs are counted as wall signs when calculating the total permitted sign area.
- 3. **Projecting Signs and Graphics.** Projecting signs and graphics are subject to the following general regulations.
 - a. The maximum projection of any projecting sign shall be three feet.
 - b. A projecting sign may be no closer than two feet from the vertical plane of the inside curb line.
 - c. Each projecting sign must maintain at least the following vertical clearances:
 - A. 8 feet, 6 inches over sidewalks, except that a canopy may reduce its vertical clearance to 7 feet, 6 inches;
 - B. 14 feet over parking lots;
 - C. 18 feet over alleys or driveways;

- D. Unless noted above, no projecting sign shall be placed over a roadway.
- d. No projecting sign extending three feet from a property line may be located within 22 feet of any other projecting sign extending three feet from a property line.
- e. The support structure for projecting signs cannot be visible.
- 4. Roof Signs. Roof signs are subject to the following regulations:
 - a. Where permitted, integral roof signs may be used interchangeably with wall signs.
 - b. Above peak roof signs are prohibited.

175.06 OTHER DESIGN ELEMENTS.

- 1. Illumination. Lighting, when installed, must be positioned in such a manner that light is not directed onto an adjoining property or onto a public street or highway.
- 2. Marquees and Marquee Signs. Signs placed on, attached to, or constructed on a marquee are subject to the maximum projection and clearance regulations of projecting signs.
- 3. Banners.
 - a. A banner sign projecting from a building may not exceed the wall height of the building.
 - b. Maximum projection for any banner is three feet with a minimum vertical clearance of 8 feet, 6 inches.

175.07 USE OF COMPATIBLE MATERIALS.

All signs, excluding temporary signs, shall be constructed of materials that are similar to those used on the principal building. Such signage shall be dominated with materials of permanency and strength and shall be compatible with other structures and signs in the development.

175.08 SIGN AREA.

- 1. Maximum Permitted Sign Area. Maximum permitted sign area for a premises is set forth as a numerical limit and is the combined total of all signs on the premise.
- 2. Sign Area.
 - a. Sign area includes the entire area within the perimeter enclosing the extreme limits of the sign, excluding any structure essential for support or service of the sign, or architectural elements of the building.
 - b. The area of double-faced signs is calculated on the largest face only.
 - c. The sign area for ground signs, monument signs, and architectural sign bands is calculated as the area enclosing the extreme limits of the copy only.
 - d. In the case of individual letters mounted to a wall, the total area in a simple shape such as a rectangle around the letters will be calculated.
- 3. Height. The height of a sign is measured from the average grade level below the sign to the topmost point of the sign or sign structure.
- 4. Setback. The setback of a sign is measured from the property line to the supporting frame, mast, pole, or base of the sign.

175.09 PERMITTED SIGNS

Table 175.09-01 – Permitted Signs by Type and Zoning Districts

Sign Types	R-1	R-2	R-3	MH	CC	UC	LI
Detached Signs							
Monument	P	P	P	P	P	P	P
Ground Pole	P	P	P	P	P	P	P
Attached Signs							
Awning	N	N	N	P	P	P	P
Banner	N	N	N	N	P	P	P
Building Marker	P	P	P	P	P	P	P
Canopy	N	N	N	N	P	P	P
Marquee	N	N	N	N	P	P	P
Projecting	N	N	N	N	P	N	P
Roof, Integral	N	N	N	N	P	N	P
Wall	P	P	P	P	P	P	P
Window	N	N	N	N	P	P	P
Miscellaneous							
Portable	N	N	N	N	P	P	N

P = Permitted for All Uses; N = Not Permitted

Table 175.09-02 – Auxiliary Design Elements by Zoning District

Sign Types	R-1	R-2	R-3	MH	CC	UC	LI
Illumination							
Indirect	P	P	P	P	P	P	P
Direct	N	N	N	N	N	N	N
Internal	P	P	P	P	P	P	P
Neon	N	N	N	N	P	P	P
Flashing	N	N	N	N	N	N	N
Flame	N	N	N	N	N	N	N
Other							
Electronic Changeable Copy	N	N	N	N	P	P	P

Moving		N	N	N	N		N		N		N
Rotating		N	N	N	N		N		N		N

P = Permitted for All Uses; N = Not Permitted

Table 175.09-03 - Permitted Signs by Maximum Permitted Area and District

The Maximum Permitted Area for all signs on a premises, excluding exempt signs:

Zoning district	Maximum total square feet
R-1, R-2	8
R-3	32
MH	48
CC, UC, O	150
LI	200

Table 175.09-04 – Permitted Signs by Numbers, Dimensions, and Locations

Each individual sign shall comply with the regulations for maximum quantity, maximum size, minimum setbacks, and height limits shown in this table:

Zoning District:	R-1 R-2	R-3 MH	CC UC	LI
Detached Signs				
Number Permitted Per Premises	1	1	NA	NA
Maximum Size* (square feet)	8	32	90	90
Maximum Height (feet) of Structure Above Ground	10	10	10	10
Front Yard Setback (feet)	5	5	10	0
Side Yard Setback (feet)	10	10	5	0
Attached Signs				
Maximum Size* (square feet)	8	32	150	200
* For those uses only permitted a sufficient maximum sign area in Table 175-3				

(Ch. 175 – Ord. 18-14 – Nov. 18 Supp.)

175.10 NONCONFORMING SIGNS.

1. Any permanent sign that was in place and lawfully established on December 21, 1998, shall be considered as a legal nonconforming sign to the extent that such a sign does not comply with the provisions of this chapter. The cover of such sign may be changed from time to time, provided that the sign area shall not be enlarged or reduced beyond the sign area in existence on December 21, 1998.
2. Any nonconforming sign which presently is or becomes structurally damaged or deteriorated or is altered by more than 50% of its replacement cost, shall be either removed or altered so as to comply with this chapter.

DRAFT

CHAPTER 176

ZONING CODE – NONCONFORMING DEVELOPMENT

176.01 Purpose

176.04 Nonconforming Structures

176.02 Regulations Additive

176.05 Nonconforming Uses

176.03 Nonconforming Lots

176.01 PURPOSE.

This chapter contains the Nonconforming Development Regulations. The purposes of these regulations are:

1. To allow for reasonable use of legally created lots of record which do not meet current minimum requirements for their respective zoning districts.
2. To provide for reasonable use of legally constructed structures which do not meet current site development regulations for their respective zoning districts.
3. To allow for the reasonable continuation of legally established uses which do not meet current use regulations for their respective zoning districts.
4. To limit the continuation and provide for the gradual replacement of nonconforming uses.

176.02 EXISTING DEVELOPMENT.

Any maintenance to any structure or site feature shall not cause the site or building to become non-compliant with the regulations set forth in this Ordinance. If the site or building is already non-compliant, the change to the building or site proposed by the owner shall not cause them to become more non-compliant. In such instances, improvements shall be completed in a manner which makes the building, site, or related items more substantially compliant with the current provisions of this Ordinance than was previous to the improvements. Any improvement proposed to modify the size of a building, lot, parking area, etc. shall be submitted for review by the City. If the proposed improvement(s) modify the size of a building or lot by less than 30%, it shall be submitted for review by City staff and approved or disapproved by the Administrative Official. The Administrative Official shall have the authority to require such a project be reviewed by the Planning and Zoning Commission and City Council if they feel such review is warranted. If the proposed change is in excess of 30% in size, it shall be submitted for full review and approval or disapproval by the Planning and Zoning Commission and City Council. See 170.07 for full site plan review requirements.

176.03 LEGAL NON-CONFORMING USES.

Any site or building use permitted under a previous zoning district's regulation shall conform to the regulations of this Ordinance under the current site and building design provisions determined to be most applicable to the non-conforming use by the Administrative Official.

176.04 NONCONFORMING LOTS.

1. Pre-Existing Lots of Record. Nonconforming lots of record existing at the time of the adoption of this Zoning Code shall be exempt, unless otherwise provided, from the minimum lot

area and lot width requirements of each zoning district. Such lots may be developed with any use allowed by the regulations for the district and must comply with all other site development regulations set forth by this Zoning Code.

2. Reductions Due to Public Acquisition. If a portion of a legally existing lot in any district is acquired for public use, the remainder of this lot shall be considered a conforming lot.

176.05 NONCONFORMING STRUCTURES.

These regulations apply to buildings and structures which were constructed legally under regulations in effect before the effective date of this Zoning Code.

1. Continuation. A lawful nonconforming structure existing on the effective date of this Zoning Code may be continued, repaired, maintained, or altered, subject to the provisions of this section.

2. Additions or Enlargements to Nonconforming Structures.

a. A lawful nonconforming structure may be added to or enlarged if the addition satisfies one or more of the following conditions:

A. The enlargement or addition, when considered independently of the existing building, complies with all applicable setback, height, off-street parking, and landscaping requirements.

B. The nonconforming building and impervious surface coverages on the site are not increased and the building, after the addition, conforms to height and off-street parking regulations applicable to its zoning district.

3. Moving of Nonconforming Structures. A lawful nonconforming building or structure shall not be moved in whole or in part to another location on its lot unless every part of the structure conforms to all site development regulations applicable to its zoning district.

4. Repair of Nonconforming Structures. A lawful nonconforming building damaged by fire, explosion, storm, or other calamity, except flood damages, may be repaired and reconstructed, provided there is no increase in the degree of nonconformity. Repair and reconstruction within the designated floodplain shall be in conformance with Floodplain development regulations. Any repairs must be completed in compliance with all applicable building codes and regulations.

5. Applicability of Landscaping and Screening Regulations. A pre-existing structure, building, or development shall be exempt from Chapter 173, Landscaping and Screening Regulations. However, any expansion of such structure, building, or development or any adjacent new development onto a property that is or becomes vacant on or after the effective date of this Zoning Code shall be subject to Chapter 173.

6. Allowance for Repairs. Repairs and maintenance of a structure occupied by a nonconforming use may be made, provided that no structural alterations are made other than those required by law.

7. Damage or Destruction of Structures. Should a structure occupied by a lawful nonconforming use be damaged to the extent that the cost of restoration exceeds 50% of the replacement cost of the structure, the nonconforming use shall no longer be permitted.

176.06 NONCONFORMING USES.

1. Continuation of Nonconforming Uses. Any nonconforming use lawfully existing on the effective date of this Zoning Code may continue, subject to the limitations of this section.
2. Enlargement of Nonconforming Uses. A lawful nonconforming use may not be expanded.
3. Abandonment of Nonconforming Use. If use becomes abandoned or unused for a continuous period of six months, any subsequent use must conform to all use regulations applicable to the property's zoning district.
4. Change of Use. A lawful nonconforming use may be changed only to a use type permitted in a zoning district that is equal to or less intensive than that normally required for the previous use.
5. Nonconforming Uses and Conditional Use and Special Use Permits. A lawful pre-existing use which would require a conditional use or special use permit in its zoning district shall be presumed to have the appropriate permit and shall be considered a conforming use. The use shall be subject to the regulations governing lapses or revocation of permits, set forth in Chapter 176.

CHAPTER 177

ZONING CODE – ADMINISTRATION AND PROCEDURES

177.01 Purpose	177.04 Extension of The Extra-Territorial Jurisdiction
177.02 Site Plan Review Procedure	Table 177-1 Criteria for Site Plan Review
177.03 Amendment Procedure	

177.01 PURPOSE.

The Administration and Procedures provisions establish the methods for implementation of site plan review, rezoning, and amendments to the zoning code.

177.02 SITE PLAN REVIEW PROCEDURE.

1. Purpose. The Site Plan Review Procedure provides for special review in addition to plan review required by other sections of this Code of Ordinances of projects that have potentially significant effects on traffic circulation or a significant effect on land uses in adjacent neighborhoods. The procedure provides for the review and evaluation of site development features and possible mitigation of unfavorable effects on surrounding property.
2. Administration. The Zoning Administrator shall review, evaluate, and act on all site plans submitted pursuant to this procedure. The Planning and Zoning Commission shall review site plans and shall transmit its recommendation to the City Council for approval.
3. Uses Requiring Site Plan Review. Select uses as required by Chapter 170.
4. Application Requirements. An application for a site plan review may be filed by the owner of a property or the owner's authorized agent with the Zoning Administrator. Site plan application forms are available in the offices of the Zoning Administrator. The application shall include the criteria listed in Chapter 170.
5. Administrative Action. The Zoning Administrator shall review each site plan and provide a written recommendation to the Planning and Zoning Commission and City Council. The Planning and Zoning Commission shall transmit its recommendation to the City Council, which will then act on the application.
6. Review and Evaluation.
 - a. The Planning and Zoning Commission and City Council shall review and approve the site plan based on the criteria established in Chapter 170 and conformance with applicable regulations in this Zoning Code and the vision of the comprehensive plan.
 - b. The Planning and Zoning Commission shall make the following findings before recommending approval of the site plan to the City Council:
 - A. The proposed development, together with any necessary modifications, is compatible with the criteria established in Chapter 170.
 - B. Any required modifications to the site plan are reasonable and are the minimum necessary to minimize potentially unfavorable effects.
 - C. The site plan conforms to this Zoning Code and to the vision of the comprehensive plan.

7. **Modification of Site Plan.** The Zoning Administrator, Planning and Zoning Commission, and City Council may require modification of a site plan as a prerequisite for approval. Required modifications may be more restrictive than base district regulations and may include (but are not limited to) additional landscaping or screening; installation of erosion control measures; improvement of access or circulation; rearrangement of structures on the site; or other modifications deemed necessary to protect the public health, safety, welfare, community character, property values, and/or aesthetics.

8. **Term and Modification of Approval.**

- a. A site plan approval shall become void one year after the date of approval unless the applicant receives a building permit and diligently carries out development prior to the expiration of this period.
- b. The Zoning Administrator may approve an application to modify a previously approved site plan if he/she determines that the modification does not affect findings related to the criteria set forth in Table 177-1.
- c. The Zoning Administrator may revoke a site plan approval if said official determines that the development is not complying with the terms and conditions of the approval. Such revocation may be appealed to the Board of Adjustment.

177.03 AMENDMENT PROCEDURE.

The amendment procedures describe the methods by which changes may be made in the text of this Zoning Code (text amendment) and/or the official boundaries of zoning districts (rezoning).

1. **Initiation of Amendments.**

- a. Text amendments may be initiated by the Planning and Zoning Commission or City Council.
- b. Rezoning may be initiated by a property owner or authorized agent, the Planning and Zoning Commission, or the City Council.

2. **Rezoning Application Requirements.** An application for a rezoning may be filed with the Zoning Administrator. The application shall include the following information:

- a. Name and address of the applicant.
- b. Owner, address, and legal description of the property.
- c. A description of the reason for the rezoning application and the nature and operating characteristics of the proposed use.
- d. Any graphic information, including site plans, elevations, other drawings, or other materials determined by the Zoning Administrator to be necessary to describe the proposed use to approving agencies.

3. **Amendment Process.**

- a. The Planning Commission, following not less than 4 days notice and publication shall hold a public hearing on each proposed text or rezoning and shall recommend action to the City Council.
- b. The City Council, after publication and public hearing, shall act on the proposed amendment. A majority vote of those members either elected or appointed to the City Council is required for approval. If the proposed amendment is recommended for

disapproval by the Planning Commission, a majority vote plus one of the City Council shall be required for approval.

- c. Protest. If a valid protest petition opposing an amendment is filed with the City Clerk by eligible property owners, a majority vote plus one of those members either elected or appointed to the City Council is required for approval. A valid protest petition must meet the following criteria:
 - A. Submission of the petition in the office of the City Clerk within 14 days after the conclusion of the public hearing on the amendment by the Planning Commission.
 - B. Notarized signatures by at least one of the following:
 - 1. The owner or owners of at least 20% of the property proposed for rezoning.
 - 2. The owners of 20% of the total area, excluding public rights-of-way and public property, within the zoning jurisdiction of the City and within 200 feet of the proposed rezoning.
- 4. Required Notice and Publication. Prior to consideration of amending, supplementing, changing, modifying, or repealing this Zoning Code by the governing body, notice of public hearings shall be provided by two of the three following methods, as determined by the City:
 - a. Publication. Not less than 4 days before the date of hearing, the City Clerk shall have published in a newspaper published at least once weekly and having a general circulation in the City a notice of the time, place, and subject matter of such hearing.
 - b. Notification by Mail. At least ten days prior to the date of hearing, the party initiating the rezoning request shall present the City Clerk a certified address list of those persons who own property within 500 feet of the subject site. The City Clerk shall mail notice of the time, place, and subject matter of the hearing to such property owners at least ten days prior to the date of the hearing.

177.04 EXTENSION -OF THE EXTRA-TERRITORIAL JURISDICTION.

Upon the automatic extension of the two-mile extra-territorial jurisdiction due to annexation, the City Council with the recommendation of the Planning Commission shall zone properties within the newly established jurisdiction concurrent with adoption of the annexation ordinance. The zoning shall consider the Comprehensive Development Plan of the City and the present use of the land.

UNIVERSITY AVENUE'S EASTERN GATEWAY

The gateway into the heart of Windsor Heights from the east begins at University Avenue and 63rd Street.

During this planning process, the Windsor Presbyterian Church indicated its interest in seeing their property to the south redevelop for a more productive use. Planners and private developers discussed several options for the site, including residential, retail, office and mixed-use development. The preferred option was creating a multi-family project that could be built in stages and connect to the neighborhood to the west in the event that those properties were redeveloped, as well. Figures 2.3 and 2.4 show how designers tested the redevelopment concept by sketching a possible layout of the project for senior housing or mixed age/income.

- *Multi-family Development.* The concept shows two multi-family buildings. Both scenarios consider placing a structure that is perched on a hill, overlooking the metro to the east. The project could, and probably should, be taller to increase the development yield. Development should target 18 to 24 units per acre.
- *Office Development.* The configuration of the concepts show a possible office (low-intensity).

- *Transitional Residential.* The comprehensive plan recognizes that the homes along University Avenue have a limited market for resale as residential, and the current zoning allows for redevelopment of individual properties for commercial use. The Transitional Residential designation provides for these properties to remain as single-family uses until such time that a redevelopment plan can be proposed for a minimum one-half acre assembled site. Redevelopment may consist of multi-family housing or mixed use.
- *University Avenue and 63rd Street Enhancements.* The crossroads of University Avenue at 63rd Street marks the arrival to the city, much like at Hickman Road and 63rd Street. The southwest corner provides an opportunity to create welcome signage built into the hill. The design should reinforce the character and quality of the community, while acting as a gateway to downtown Windsor Heights by calming traffic through street design changes.



UNIVERSITY AVENUE'S EASTERN GATEWAY



FIGURE 2.3: EAST GATEWAY REDEVELOPMENT SCENARIO 1
The concept shows a tiered, multi-story building with a tower as the main project. An attached structure to the south conveys how the project could be developed in phases and connect to the larger building. Townhouses near the rear of the site offer an additional development opportunity. Both scenarios show the entrance drive at the western edge to allow for a possible connection to the "transitional residential."



FIGURE 2.4: EAST GATEWAY REDEVELOPMENT SCENARIO 2
The concept shows two multi-family buildings and an office building. A four-story multi-family building, perched on the hill, and looking over the neighborhood to the east, could have 20 units per floor or a total of ~80 units. A three-story building, tucked into the site, is surrounded by green space and could have 14 units per floor or a total of ~42 units. Combined, the project includes 110 to 120 development units with parking available on the lower level. The project could, and probably should, be taller to increase the development yield.

UNIVERSITY AVENUE'S EASTERN GATEWAY

- *Neighborhood Park and Pathways.* At the terminus of 64th Street is a proposed park that can be accessed from the neighborhood to the south and the proposed multi-family project at 63rd Street and University Avenue. The park could later be redeveloped as part of a larger redevelopment plan for the homes fronting University Avenue.

Transitional Residential

Transitional Residential allows for single-family dwellings, yet recognizes the market demand for these properties to redevelop for commercial use under current zoning (University Avenue Mixed-Use). Transitional Residential intends to protect the integrity of the neighborhood block by preventing unmanaged encroachment of non-residential uses and limiting negative effects.

- The “transitional” component allows for dwellings to become professional and low-intensity businesses, while retaining the building’s residential character. However, if the entire block of properties is controlled by a single developer, then the entire block can be redeveloped. In other words, the intent of the

district is to prevent four of the five contiguous homes to be redeveloped, leaving a single home isolated and surrounded by unlike uses and character. Redevelopment plans should be a minimum of one-half acre.

- Once all properties are available for redevelopment, a master plan should be developed to show mixed use, relationship of uses and buffering, setbacks, site access, and shared parking.

Zoning is the tool that makes the future land use map a reality. The future land use map calls for a variety of uses, ranging from commercial to transitional residential to the town center. The University Avenue Corridor Mixed-Use (UC) zoning district is meant to allow a range of land uses while recognizing the mixed-use character of University Avenue. Amendments to the zoning code can help enhance the character of the UC district, particularly the areas from 69th Street to 67th Street, and 65th Street to 63rd Street identified as Transitional Residential.

Development along the University Avenue should not be piecemealed together one property at a time. Block-

size commercial development is preferred with limited front yard parking and driveway access on University Avenue. Large-scale development often provides opportunities for more land use types and adequate site area to buffer adjacent residential uses. In addition, there are many quality single-family homes contributing to the character of the corridor that should be allowed to remain until the market for large-scale commercial development emerges.

The zoning code currently allows bulk regulations in the UC zoning district to be changed by the Planning Commission based on recommendations from the Comprehensive Plan. The Comprehensive Plan provides details on the preferred type of development. A recommended additional step is to add explicit standards for the UC district in the zoning code reflecting the goals of the Plan. This makes the objectives clear to developers and property owners and also does not subject the Planning Commission to inconsistent interpretation of the Plan.

Implementing Transitional Residential

Revise the zoning code for compliance with the Comprehensive Plan and Future Land Use map.

UNIVERSITY AVENUE'S EASTERN GATEWAY

ACTION GOALS:

Encourage block-size commercial development along University Avenue, while preserving the character of existing residential uses. Steps to action:

- In Transitional Residential, increase the minimum lot area for commercial uses in the UC district from 5,000 square feet to 25,000 square feet. Development can be phased. Parking, access and circulation, setbacks, and overall character should be defined in the redevelopment plan.
- Allow the minimum lot area for residential uses in the UC district to remain at 5,000 square feet to prevent creating non-conforming lots for current residential uses.

Encourage quality development that reflects the mixed-use character envisioned for the University Avenue Corridor. Steps to action:

- Allow the downtown residential land use in the UC district as a permitted or conditional use to allow development of upper floor for residential uses.



FIGURE 2.5: EAST GATEWAY — TRANSITIONAL RESIDENTIAL

Transitional Residential protects the current use of the property, yet recognizes the potential demand for redevelopment as an alternative use. The intent of the district is to give security to homeowners that their neighboring property is not redeveloped for a use that would influence the enjoyment of their property.

- Require parking lots fronting University Avenue to not be larger than two rows and/or one drive aisle. Additional parking areas shall be located in the rear or side yard.

Create a welcome feature on the southwest corner of University Avenue and 63rd Street. Steps to action:

- Allow setback reductions for

parcels with steep slopes that impede quality development on the lot. For example, for slopes greater than 25% on any side of the parcel, the setback on the opposing side can be reduced up to five feet, provided all bufferyard landscaping and/or screening required adjacent to residential uses is still met.

PROJECT GOALS**INTRODUCTION:**

University Avenue is similar to many urban retailing corridors of today. The area is under pressure to change from a quaint pedestrian oriented community center to an auto-oriented convenience "strip". The widening of University Avenue will help move additional traffic, but at the same time begin to break down the original feel of the town.

However, the community leaders of Windsor Heights are different than most other communities. They understand that University Avenue represents the image of their community. They understand that University Avenue is the "front door" to their community and creates an image of their city. Windsor Heights is a close knit community that desires to preserve its character and unique image. They understand that preserving this identity will continue to create a desirable place to do business and raise a family.

As a result, the City of Windsor Heights desires to create a set of Design Guidelines to proactively guide the future development of the Town Center of Windsor Heights. The guidelines are divided into five categories as follows: Goals, Façade, Parking, Signage and Retail/Management. Each addresses a specific element of the urban corridor that together create the "look and feel" of the district.

The following GOALS form the basis for this document:

GOALS

- Guide future redevelopment of the University Avenue corridor area to be unique in appearance and present a welcoming environment.
- Attract new business and enhance property values.
- All design shall be "classical" of the area and of high quality for permanence and durability.
- Construct the University Avenue area with quality materials, providing a feeling of permanence.
- Allow a diversity of design in the University Avenue area yet harmonious in appearance.
- Allow development to incrementally occur over time in a planned fashioned per the Streetscape Plan and these Design Guidelines.
- Establish a district and/or means to apply the guidelines included herein to achieve the project goals.

SUMMARY:

To maintain creativity and encourage a vibrant unique mix of development and interesting architecture, these guidelines establish parameters to maintain a "planned look" to the Town Center area. As a result, these guidelines are not all-inclusive, but instead establish the vision for the development of the area (as defined by the zoning map). Subjective review decisions will have to be made and each new development will have to be reviewed independently, but in the context of the whole. The Town Center area should always be reviewed as a single development area as it incrementally changes. The creation of a formalized reviewing process and entity should be established with the adoption of these guidelines.

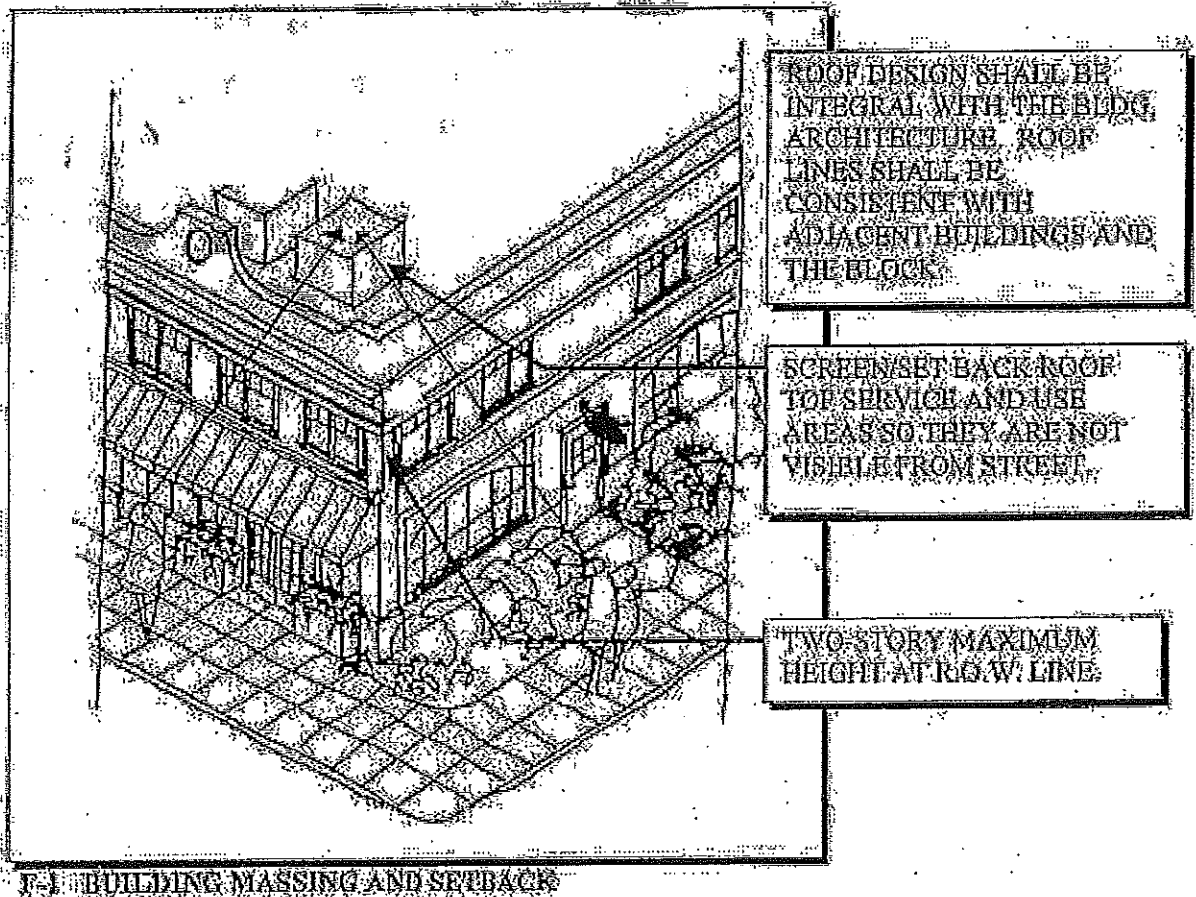
Town Center
BUILDING FAÇADE

GOAL

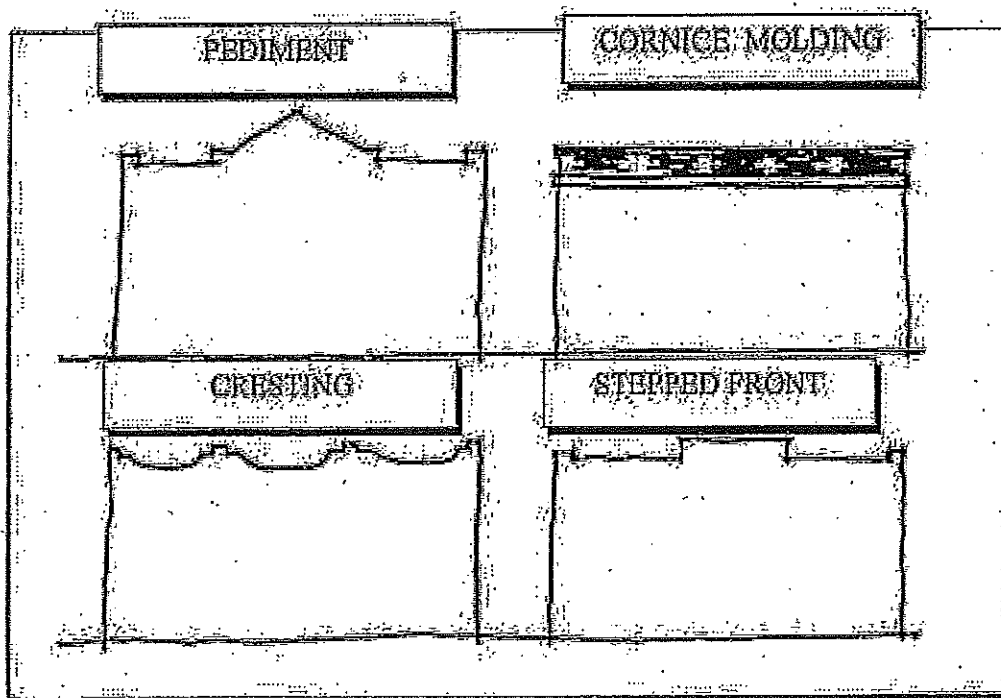
Building proportions shall be compatible with the prevailing proportional relationships within the Town Center area, as defined by the City Zoning Code. Buildings shall be designed to have a comfortable relationship with pedestrians. Close attention should be paid to volume, massing and rooflines. New buildings shall characterize high quality architecture of the community. Renovations/additions shall maintain trueness to the form and materials of the existing building, where appropriate. Inclined roofs are preferred.

GUIDELINES

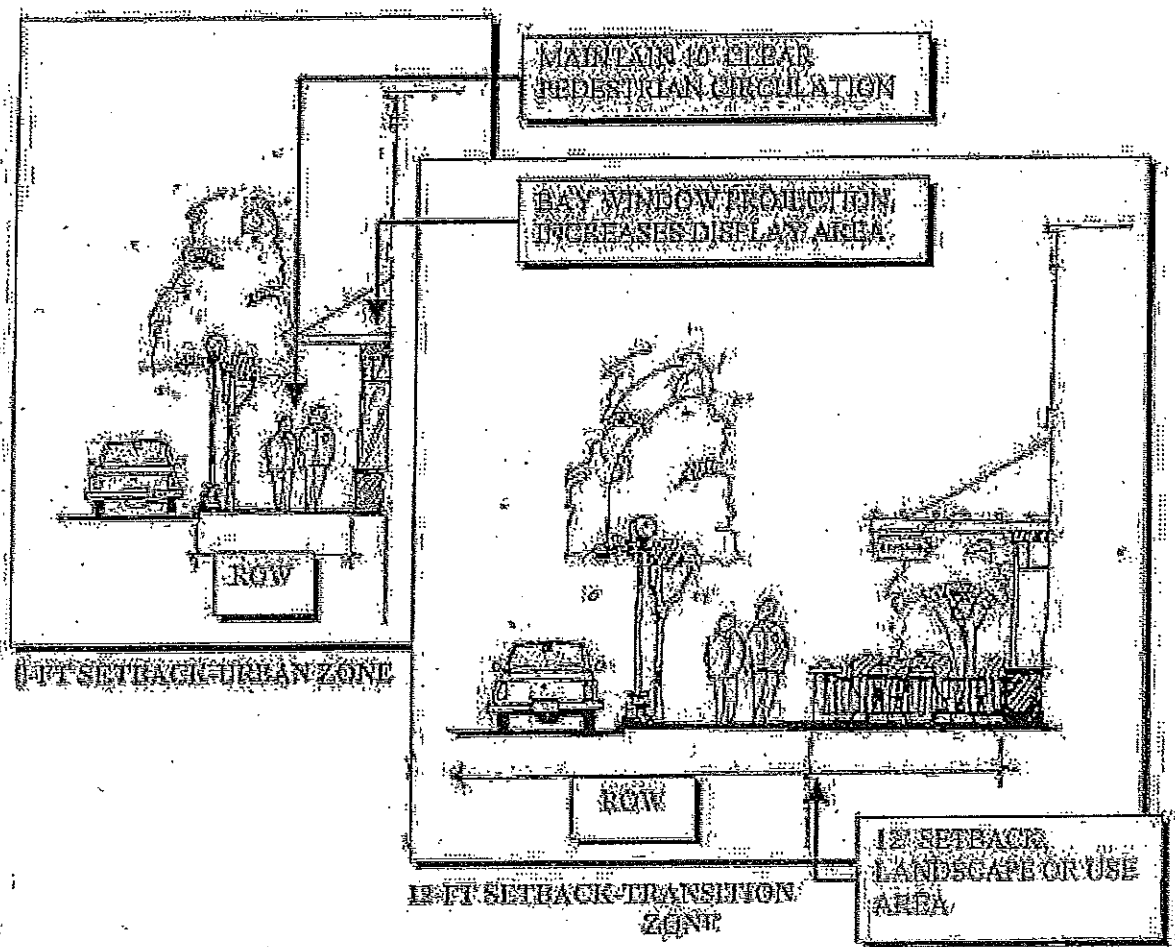
Massing, Scale and Site Planning



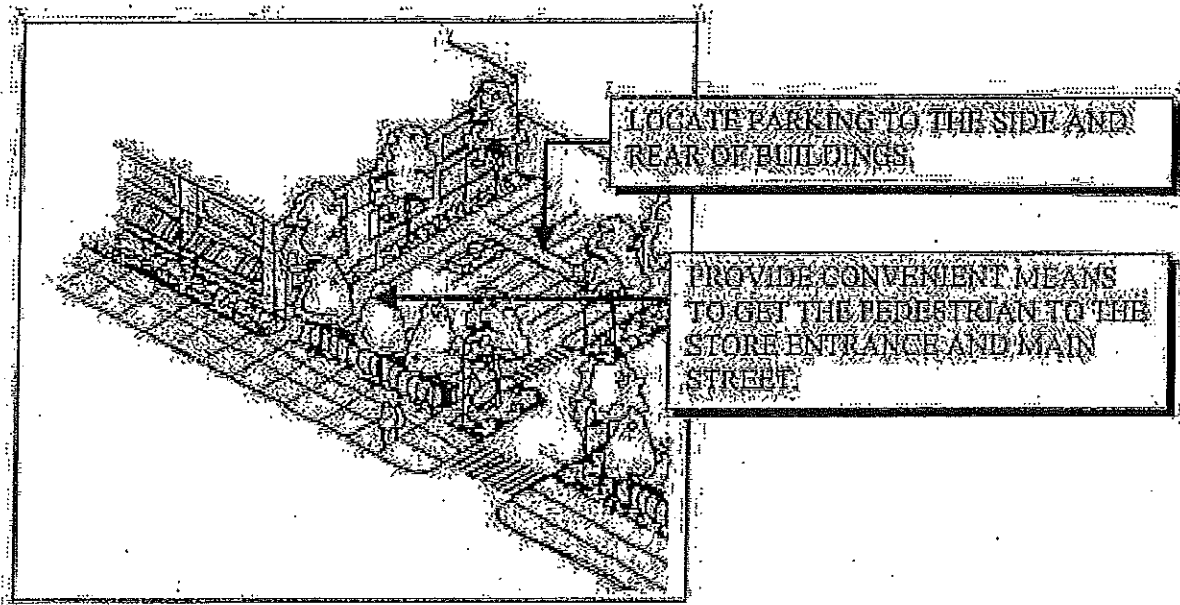
- Building design shall adhere to the allowable height, size, projections, setbacks, etc. Defined by CITY Zoning ordinances. Additionally, the special design requirements included herein shall apply.
- Building height within the Town Center area is two stories. A third story is allowed, if stepped back from the front façade a minimum of ten feet. Projections, such as spires and pediments, can exceed the maximum height as long as the projection is less than 25% of the building frontage. Decorative versus commercial or residential uses are not necessarily applicable when considering the overall building height.
 - a. Roof design shall be an integral part of the overall building design. It shall be of a height and proportion so as not to appear as an afterthought or appendage.
 - b. Roof top outdoor living spaces shall be integrated into the building structure. Step backs, parapets and other features shall be used to provide privacy and screening of utilitarian areas and equipment.
 - c. Building rooflines make a profile against the sky and the design of this profile helps define community character. Roofline design shall be consistent with existing block or neighborhood patterns where appropriate.



TRADITIONAL COMMERCIAL PARAPET TREATMENTS

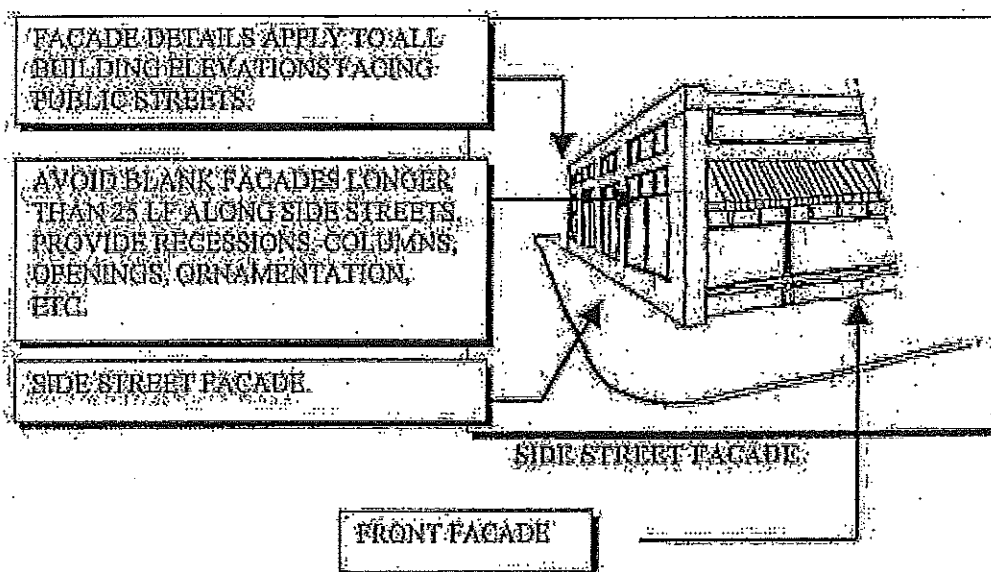


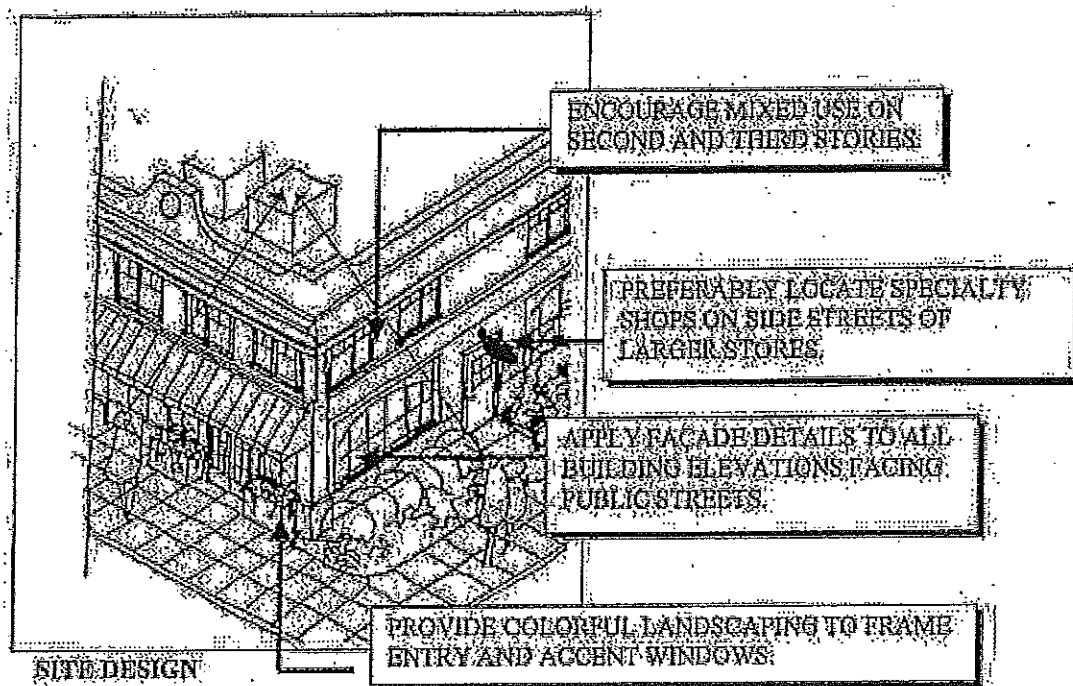
- Landscaped, outdoor use areas are preferred.
- Individual business entries shall be readily identifiable. Primary entries shall front University Avenue. Entries can be articulated with recesses, projections, porches and other distinctive elements.
- Bay windows and building entry porticos may project into the public right-of-way (ROW) provided A minimum 10' clear area remains for pedestrian circulation. Bay windows shall maintain glazing on all projecting faces and may not exceed 15 feet in width. For ground floor windows, there shall be a clearance of at least 12 inches between the bottom of the projecting bay and the sidewalk. A right-of-way lease agreement between the City and private property owner is required for any projection less than 8 ½' in height within the ROW.



PARKING LOT LOCATION

- The preferred location of parking lots is at the rear and/or side of buildings, and where possible, parking should be as unobtrusive as possible. As a whole, the massing and details of the building shall dominate the streetscape-not parking.
- Refer to "Parking Lot Design" Sections included herein.

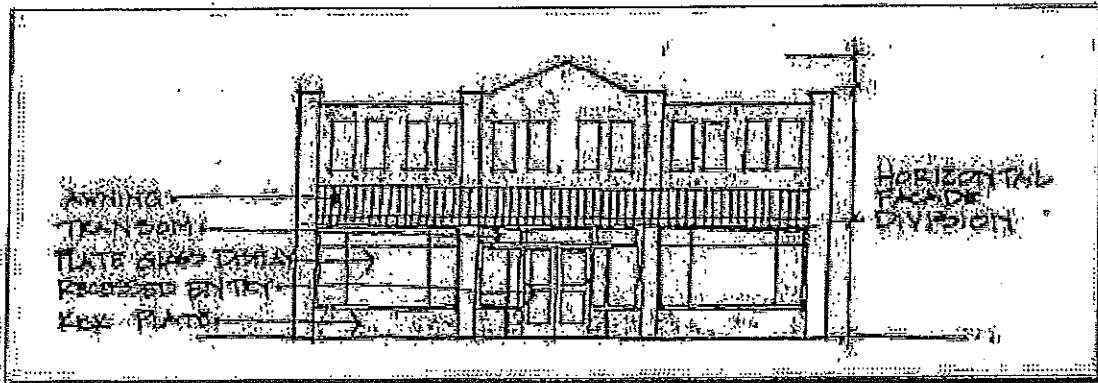




SITE DESIGN

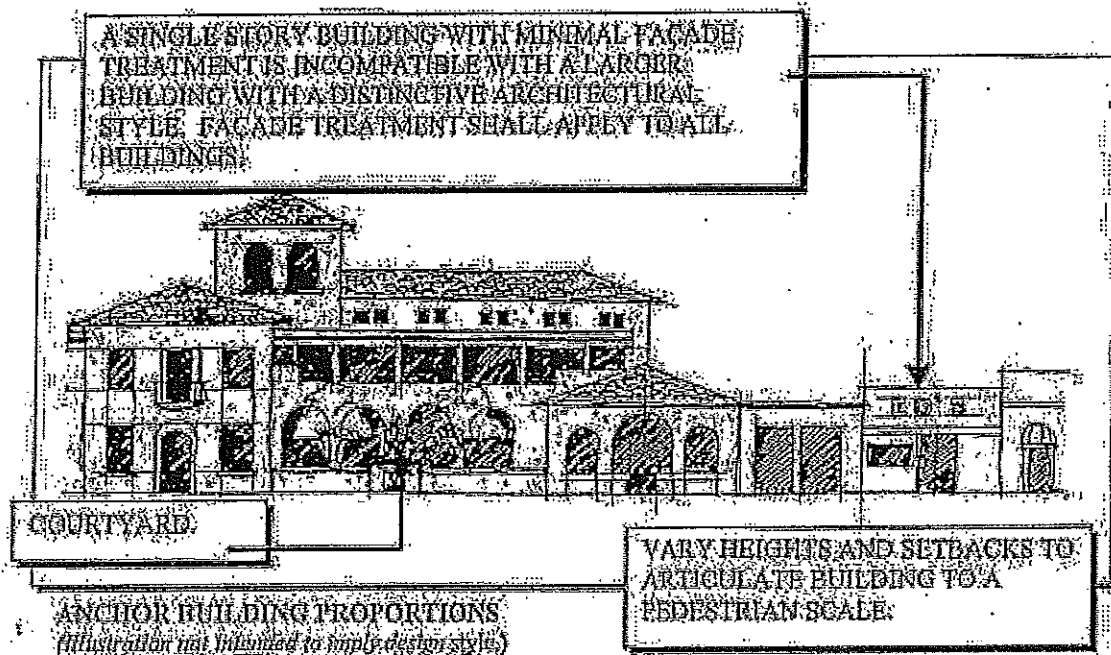
- Separate entries for each unit are encouraged with clustering four or fewer entries allowable with appropriate architectural application, such as an interior breezeway or exterior courtyard.
- Colorful landscaping is encouraged to frame doorways or accent windows. Landscaping may be planting beds, sidewalk planters, containers and/or window boxes. Planters, containers and window boxes are encouraged complement the architectural style and color of the building it is framing.
- Façades that reflect the building architectural style shall be used on all exposed building elevations, not just the street facing or entry façade.
- Monotonous, uninterrupted expanses of wall are discouraged. Recesses, projections, columns, openings, ornamentation, materials and colors shall be used to add texture and detail. Blank walls shall not normally exceed 10 feet of lineal frontage along University Avenue and 25 feet along a minor street.

Murals, pictorial mosaics and other wall art intended for public view should be tasteful and non-offensive to an average citizen.



FAÇADE TREATMENT

- Building volume and mass are partially defined by façade treatment. Facades shall be designed to be proportional to the overall building and reflect the architectural style. Building volumes shall be reduced through wall offsets or projections.
- Both horizontal and vertical division shall be incorporated into the building façade.
- Stairways and stairwells shall be integrated into and complement the overall architectural form and style. Simple, functional design is encouraged. Flimsy, open metal, prefabricated stairs are not allowed. Uncovered stairs shall be screened from view with wing walls or landscaping.
- Entries and windows shall contribute to the volume, mass, proportion and texture of the building. They shall be designed as an integral part of the overall building design and shall reflect the building's architectural style.
- Street fronting windows shall be at least 12 inches and no more than 30 inches above the sidewalk level.
- Building entries, windows and other openings shall be compatible in location, scale and pattern to the existing structures within the Town Center.



ANCHOR BUILDING PROPORTIONS

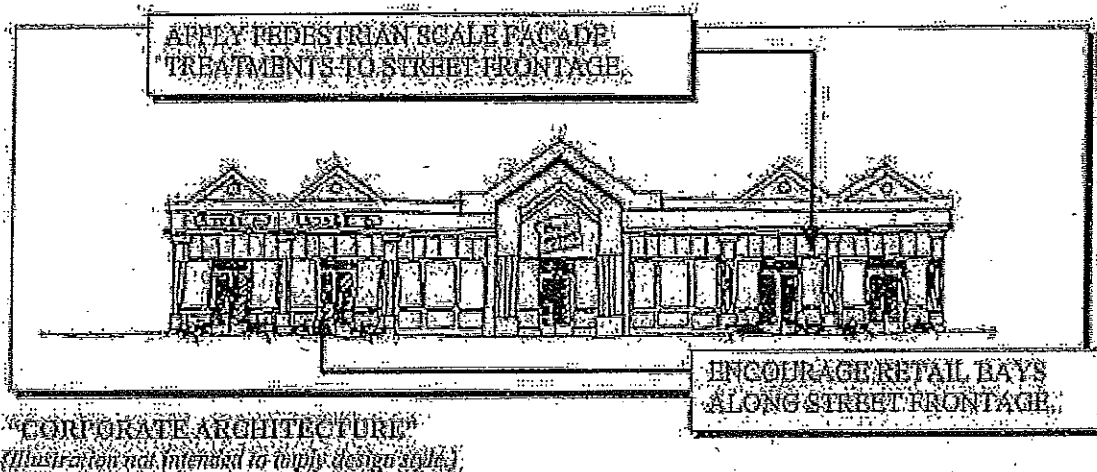
(Illustrations not intended to imply design style.)

- The height of new development shall “transition” from the height of adjacent development. This can be achieved by varying the height of the building so it appears to be divided into distinct elements and/or articulating the building façade by horizontal and vertical offsets in wall planes.
- Building articulations shall be used to create interest and reduce building scale. This can be achieved through varying heights and setbacks within the same building, offsetting wall planes and adding architectural interest with roof overhangs, awnings, trellises, windows, moldings and other elements.
- Upper stories shall be differentiated from the lower floor by wall offsets, step backs, balconies or other features. For example, third stories shall be stepped back 10 feet from the front face of the second story.
- Courtyards are encouraged with multiple entrances/uses serving the courtyard.

Building Materials

- New and renovated developments shall exhibit high quality design and construction that will enhance the community.
- Architectural compatibility shall be demonstrated through consistent and complementary building style, mass, scale, materials, and colors to the neighborhood.

- Materials and colors shall be compatible with the community character, streetscape and adjacent structures (where appropriate).
- The selected material and color palette shall be used on all exposed sides of a building.
- Roof material shall be appropriate to the buildings' architectural. Materials with highly reflective surfaces are not allowed.
- Exterior wall materials shall be brick, stone stucco or other high quality materials appropriate to the architectural style of the area.



"CORPORATE ARCHITECTURE"

(Illustration not intended to imply design style.)

- Standardized "corporate" architectural styles associated with franchise or "chain" facilities shall be modified to be compatible with the Town Center architecture following these guidelines.
- New construction should use contemporary translations of traditional storefront components.

PARKING LOT DESIGN – SITE PLANNING

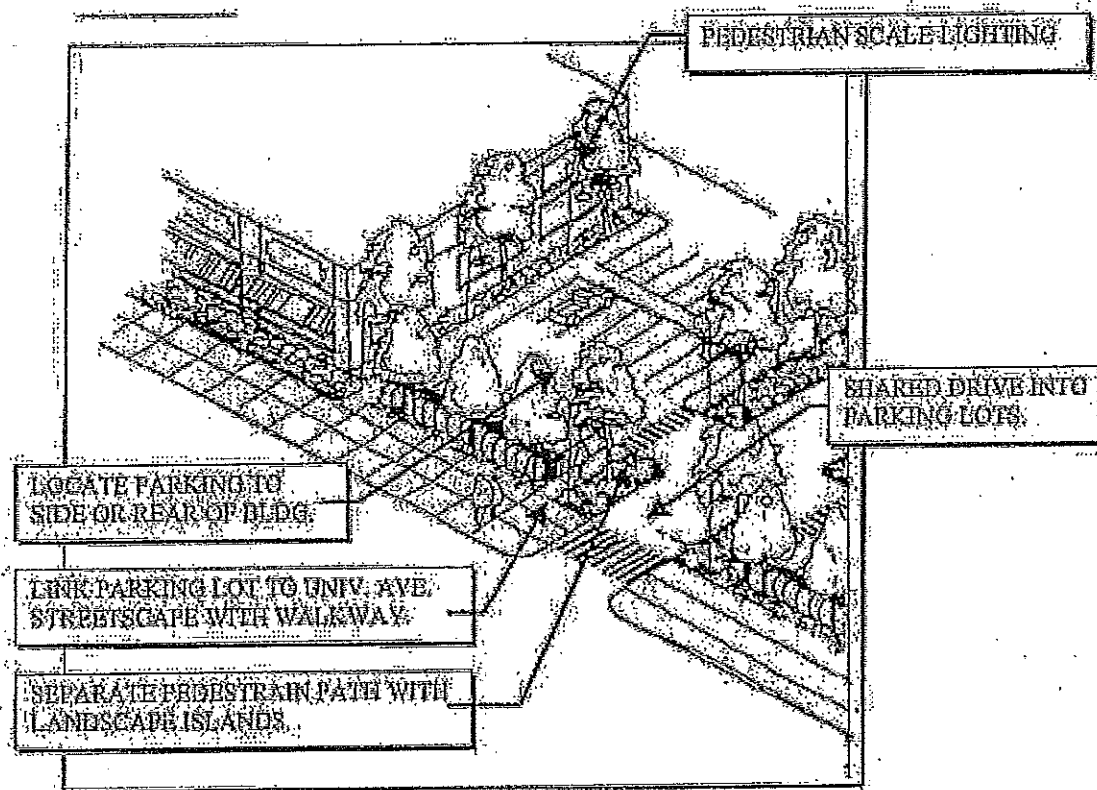
GOALS

Manage the amount of street frontage used for surface parking and prevent parking from being the dominant visual element of the University Avenue Area.

Create a place in which the automobile functions primarily as a means to get pedestrians to the Town Center area. When the car is parked, the space should function on a pedestrian level.

GUIDELINES

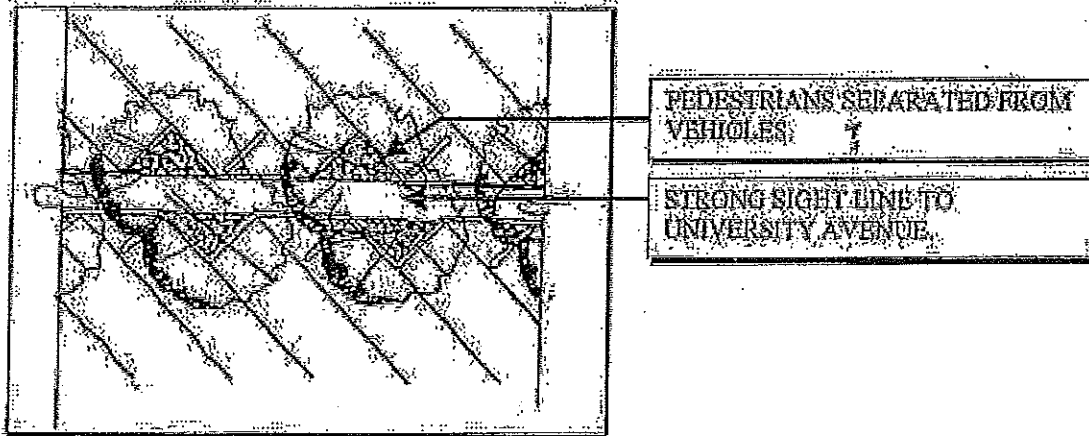
P-1 PARKING LOT FOR PEDESTRIANS AND AUTOMOBILES



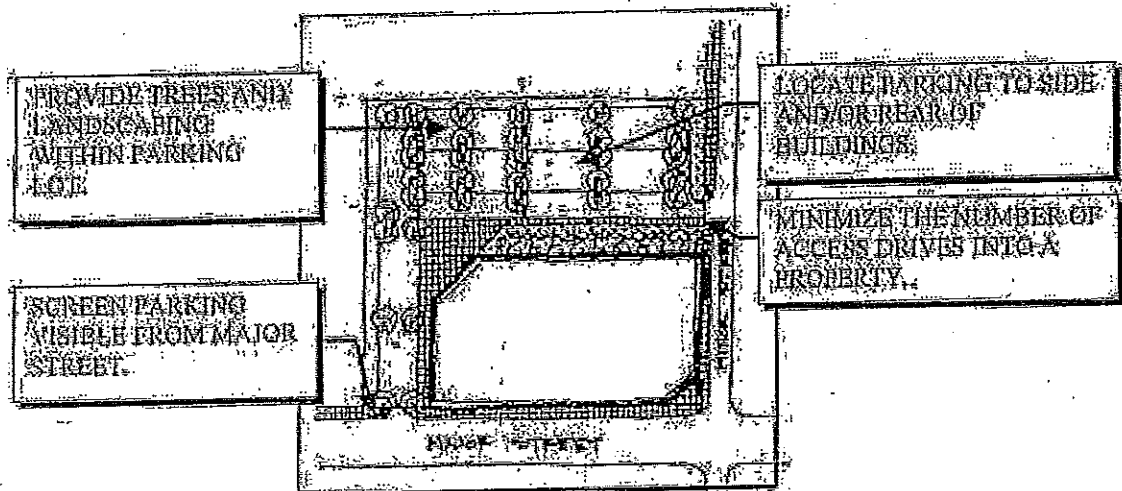
- Parking facilities should be designed in a manner that is pedestrian friendly, including appropriate lighting. Parking lots and sidewalks should be cleaned daily.

- Encourage the use of shared drives into parking lots to minimize the number of curb cuts allowed. Fewer curb cuts will reduce the number of auto/pedestrian conflicts, reduce the number of automobile accidents and maintain a strong visual line along the streetscape corridor.

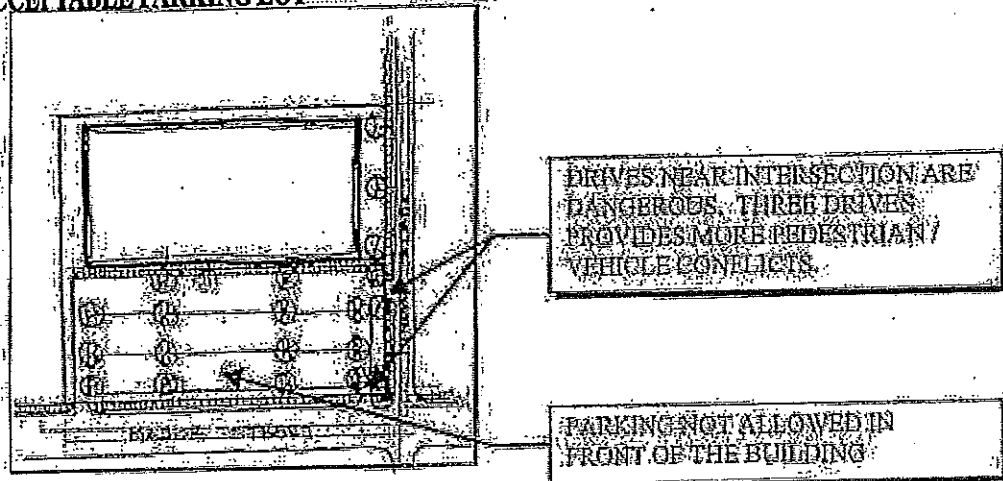
P-2 STRONG PEDESTRIAN CONNECTION FROM PARKING TO STREETScape



P-3 ACCEPTABLE PARKING LOT



P-4 UNACCEPTABLE PARKING LOT



P-5 ADDITIONAL PARKING GUIDELINES

- Drive Thru" services shall be allowed within the parking zones of the site only within the Transitional Zones of University Avenue.
- Shared parking between mixed uses is encouraged. Uses with hours of different operations, function the best.
- Seasonal overflow parking shall be located in the rear of the lot or in a off-site. Private/public co-use of spaces should be considered with parking spaces within an one block distance counting toward the minimum parking space requirements of the development.

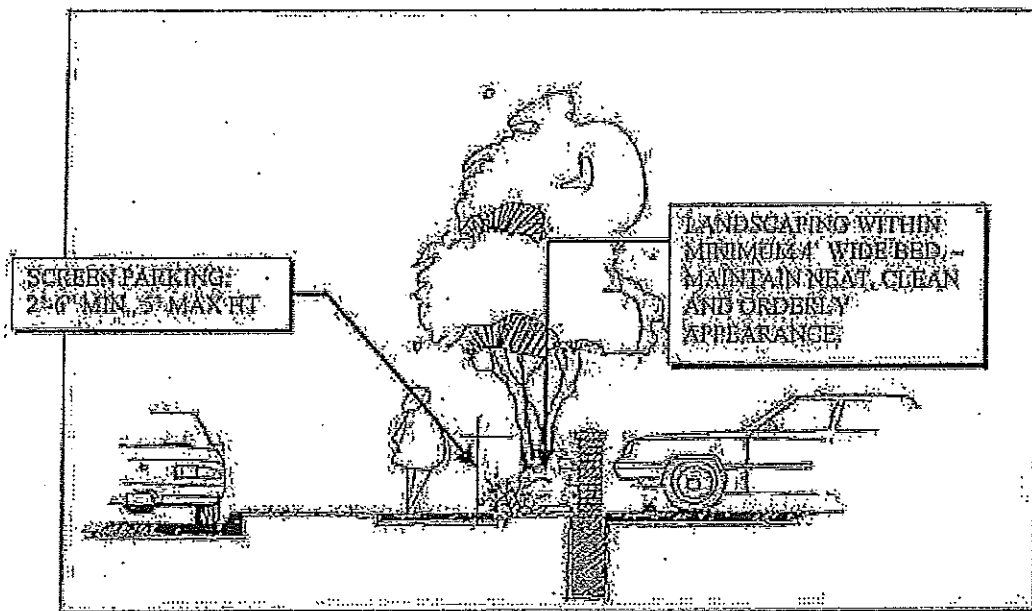
- Parking lots located behind buildings should consider connecting drives across properties to ease in vehicular/consumer circulation.
- Provide trees in the parking lots to shade cars and pavement, reduce heat and glare, provide a sense of scale to the lot, and enhance the comfort of pedestrians.
 - Trees shall be planted within a curbed planting island.
 - Islands should be interspersed throughout parking.
 - Grass, ground cover or shrubs shall also be planted within the island with the trees.

PARKING LOT DESIGN – LANDSCAPING AND BUFFERING

GOAL

Screen the view of the parked car and headlights from the public right of way, strengthen the pedestrian integrity of the streetscape and create strong pedestrian sit lines within the streetscape.

GUIDELINES



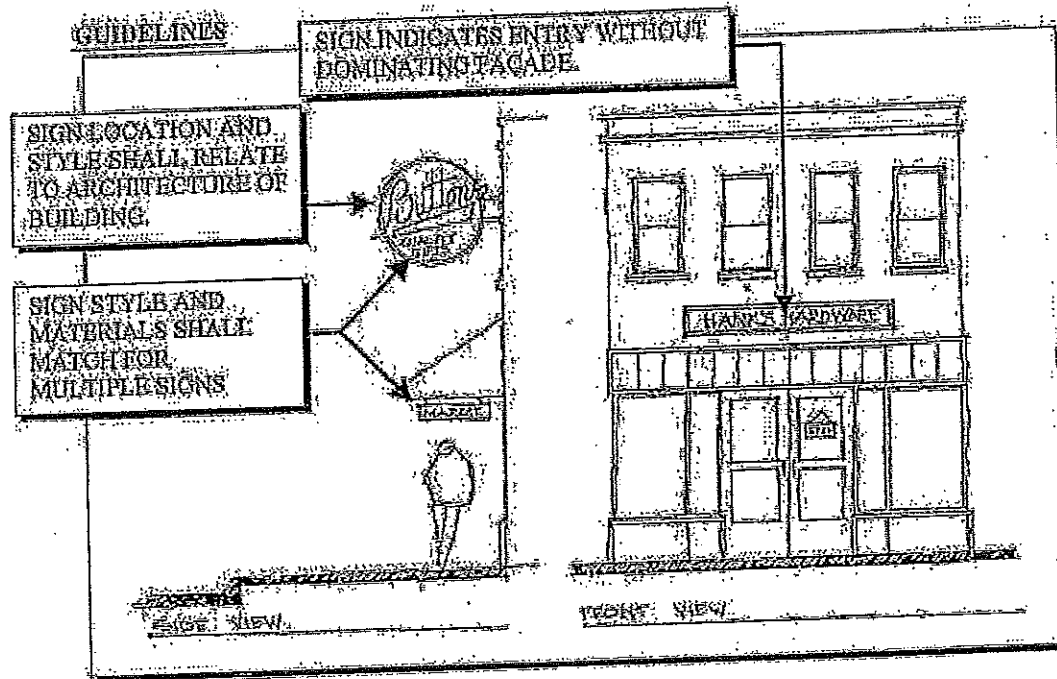
P-1 SCREEN PARKING LOT FROM UNIVERSITY AVENUE

- Parking that is visible from the street or other public use areas must be screened and softened by low screen walls and landscaping to a minimum height of 2'-6" and maximum height of 5'-0". Landscaping shall be maintained as necessary within this height range.
- Perimeter masonry screen walls are encouraged with landscaping to screen parking from view of street right-of-way. Where possible, landscaping shall be provided within a minimum 4' wide planting bed and include trees, shrubs and/or groundcovers. Landscaping shall coordinate with the streetscape landscaping. Landscaping shall be kept in a neat and orderly manner.

GOAL

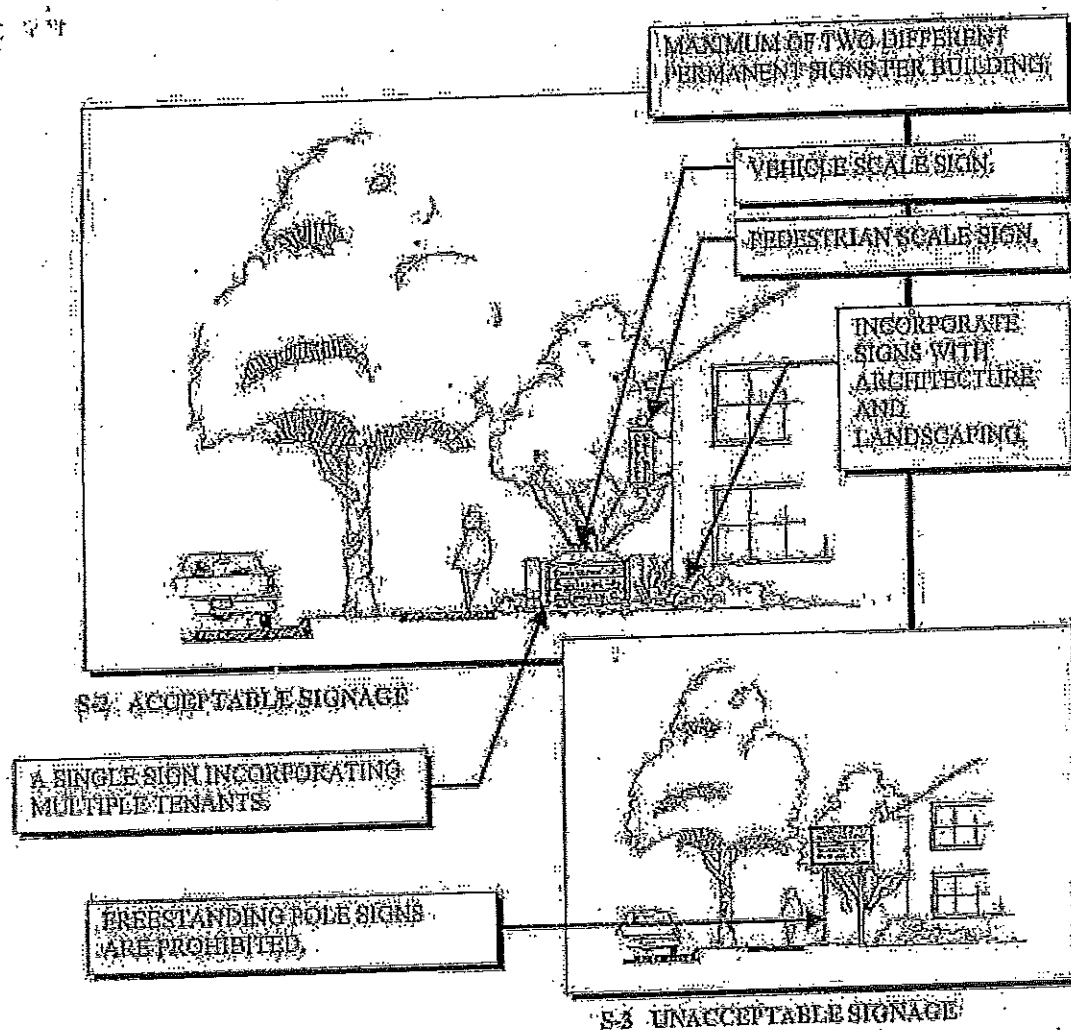
Signs shall be compatible with the surrounding community, street, block and adjacent structures. Signage plans shall strive to create harmony and avoid ostentation, competition and obstruction with other businesses.

GUIDELINES



S-1 INCORPORATION OF SIGN WITH ARCHITECTURE

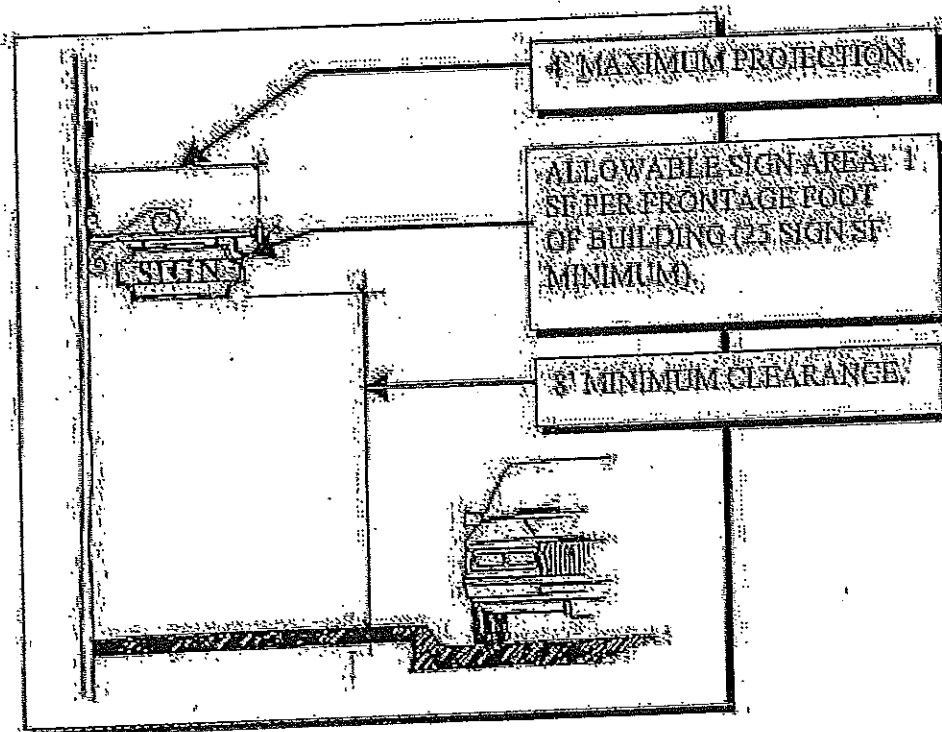
- Every building or commercial complex shall incorporate sign design into the overall project design plan. Sign design, materials and illumination shall compliment the building scale, proportions, architectural style, materials and colors.
- Where there is more than one sign per occupant, all signs shall be designed using the same construction methods and materials, colors, lettering and logo styles.
- The location and size of signs shall clearly relate to the architecture of that particular structure. Signs shall not cover windows, roof shapes or dominate trim. Roof and wall signs that extend above roof lines are prohibited.
- Wall and fascia signs shall be located to indicate building entries without dominating the façade.



- Only low profile monument signs are permitted. Monument signs shall be placed so as not to obstruct vision or create a traffic hazard. Refer to the City's Zoning Code for specific requirements.
- A single, monument sign may incorporate the addresses and business names for multiple tenants of a building or complex. All tenants signs shall be of a uniform size, color and style when combined in a single sign format.

Signs should be located so that they are visible below the foliage of street trees for the amenity and convenience of the pedestrians.

- A business shall have a maximum of two permanent signs, but not more than one of each type such as: a wall sign, a projecting sign or a permanent banner.



S-4 PROJECTING SIGN

- Projecting signs are allowed on storefronts up to a height of 14 feet, with maximum projection of 4 feet from the face of the building. Clearance of at least 8 feet must be maintained to the sidewalk. The overall size of the sign shall not exceed 10 feet square.
- The total area of all signs on a building should be limited to a size equal to one square foot per frontage foot of building face, with a maximum allowance of 18 square feet regardless of front footage.
- Additional or larger signs may be allowed for large scale projects provided that the function of a design is justified through a comprehensive sign plan for the project and approved by the City. Justification for additional signs shall be based on functional needs, such as multiple entrances or uses within a development. Larger signs shall be justified by specific site conditions and appropriate proportional scale to the overall building.

- Internally illuminated signs are prohibited.
- Individually illuminated sign letters within an allowable wall sign area may be used, provided the entire sign and background are not internally illuminated. Such internally illuminated signs shall be limited to four square feet (per side for projecting signs).
- Additional signs are allowed for businesses that provide pedestrian access to sales and service areas through the rear of buildings. For such businesses, rear access signage shall be equal to allowable signage for front facades.
- Window graphics shall be applied so that they do not obscure visibility into a shop. No more than 25% of an area of any one window shall be used for a sign or graphics. Such signage shall be designed to complement the other signs and the design of the storefront.
- Window graphics are recommended to be painted or applied vinyl letters on glass or a clear acrylic panel behind the windows. These types of window graphics are permanent signs.
- Banners and cloth signs shall not be permitted.
- Standardized corporate signs are permitted, if they comply with these guidelines.

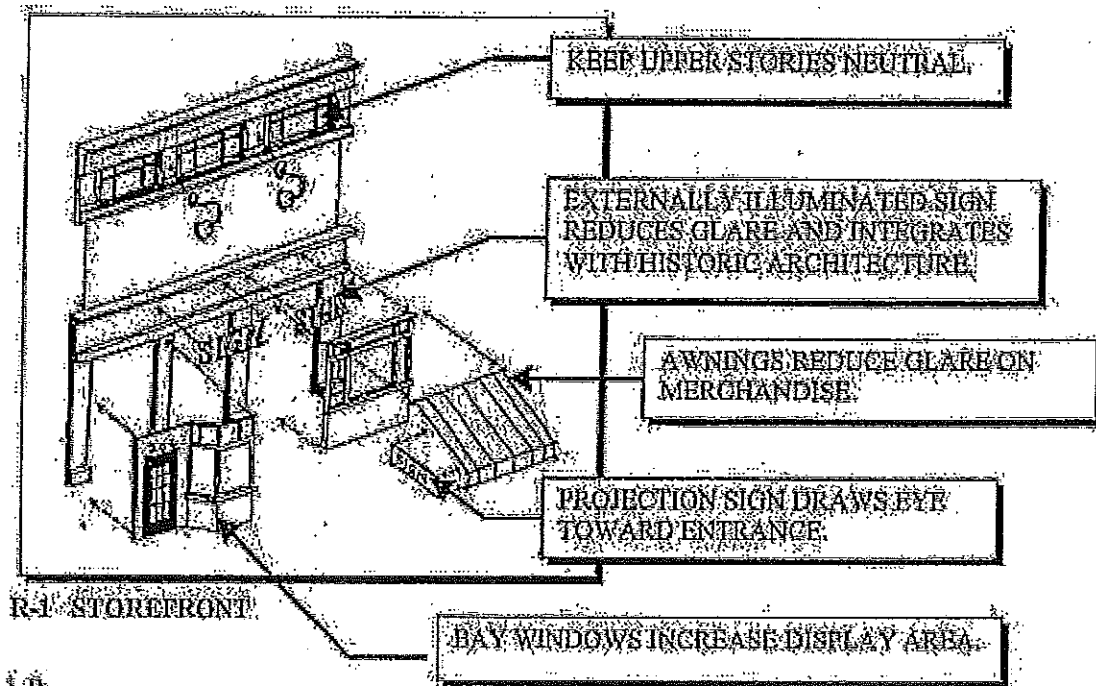
RETAILING & MANAGEMENT

GOAL

To create a successful and profitable mixed use area that successfully competes against other retail, office and residential use areas. Updating primary building facade treatments periodically is encouraged.

OBJECTIVES

- Storefront
 - a. Keep storefronts simple and clean.
 - b. Window display, entry design, signage, lighting, and amenities are all necessary to hold the shoppers' attention and indicate the type and quality of the business.





**STAFF REPORT
CITY COUNCIL**
October 2, 2023

TO: CITY COUNCIL
FROM: Jason Roberts, Public Works Director
SUBJECT: Consideration of Purchase of Case 521-G End Loader

GENERAL INFORMATION

The Public Works Department has budgeted \$150,000 in the Equipment Reserve Fund for the purchase of a replacement front-end loader. The current end loader is a 1999 John Deere 444H with 3,000+ operation hours.

The 444H was slated for replacement in the ERP two years ago, but it was determined at the time to undertake \$18,662.27 in repairs to extend its service life. After the 2021 repairs, the 444H remained in need of a replacement brake valve and a front axle rebuild. Recently transmission issues have arisen and the 444H is believed to need either a torque converter or a new transmission. Essential repairs are estimated in total at between \$42,417 and \$62,287 by Murphy Tractor, and other non-essential repairs would still remain outstanding. Because John Deere no longer provides replacement parts for it, the 444H could potentially go out of service for an extended period if a part failure were to occur while 3rd party parts are being sourced.

While the 444H only has 3,000 hours of operation, it is frequently exposed to salt and harsh winter conditions, which has led to significant wear and rust. Furthermore, maintenance on the 444H has not been consistent over the past 10 years, likely contributing to a shortened useful life. Earlier this month, the Public Works department implemented a new maintenance tracking program across the fleet with the intention of adhering to manufacturers' guidelines for maintenance going forward. Andy Larson has been assigned to implement and document maintenance for Public Works' fleet going forward.

An end loader is essential to Public Works operations during inclement weather; most critically, it is used during snowfall for loading snowplow trucks with salt. If the loader is out of operation, Public Works would have to rent a loader that could cost up to \$3,800 a week. The end loader is also utilized during emergency situations, and while these emergencies can be infrequent, such events can be regional in nature and quickly deplete heavy equipment rental and contractor availability due to high equipment demand. As such, it is important for the Public Works department to maintain a reliable end loader, as the 444H is the only one in the fleet, to

help clear roads and conduct other miscellaneous functions during emergencies.

Past examples of general and emergency end loader use include the following:

- Loading of rock, blacktop, salt, sand, and other miscellaneous materials
- Removing snow during emergencies
- Clearing roads of debris during severe weather
- Assisting in flooding events, sandbagging, moving pumps in place
- Loading broken asphalt, concrete, & tree limbs
- Towing out emergency vehicles
- Removing garbage

Because the City of Windsor Heights only retains one end loader that sees somewhat less use than end loaders in larger communities, Windsor Heights must balance the need to maintain its end loader in reliable operational condition for use along with the need to maximize the economic useful life given its annual lower mileage.

The Public Works Committee has discussed replacement of the end loader extensively and recommended the following at its last committee meeting: “continuing the procurement process to determine availability and cost.” The Public Works department has evaluated three major brands of loaders, assessing power, visibility, ease of maintenance, and comfort, as well as other various features. Staff also looked into smaller end loader options, but after detailed review, staff determined they would not meet the department’s range of needs.

Public works has obtained three competitive proposals per the State bid contract and the Windsor Heights 2019 purchasing policy and procedures manual. Public Works recommends moving forward with the low-price option, a Case 521-G end loader. The Case 521-G is priced at \$169,259, after current expected trade-in value. The expected wait time to obtain the end loader is six or less months. If approved, the 521-G will be entered into the maintenance program with an expected minimum life cycle of 15 years.

Attached are the specifications and pricing of the three models evaluated.

Model	Price	Trade-in	Net Price	Warranty	Bucket Capacity	Max Bucket Height	Net Power	Delivery
John Deere 524 - P	\$215,000	(\$40,000)	\$175,000	5 years	3.00 yards	9ft	161hp	6 months
Case 521 G-Wheel Loader	\$169,259	(\$40,000)	\$129,259	3 years	2.3 yards	10ft	142hp	6 months

Caterpillar 920 M Wheel Loader	2.5 to 3 yards11ft	123hp	6 mon
\$171,080 (\$40,000) \$133,605			

SUMMARY

ATTACHMENTS

1. End Loader Specifications

Model	Price	Trade- In	Net Price	Warranty	Bucket Capacity	Max Bucket Height	Net Power	Delivery Window	Local Service Provider
John Deere 524 -P	\$215,000	(\$40,000)	\$175,000	5 years	3.00 yards	9ft	161hp	6 months	Murphy Tractor
Case 521 G-Wheel Loader	\$169,259	(\$40,000)	\$129,259	3 years	2.3 yards	10ft	142hp	6 months	Titan Machinery
Caterpillar 920 M Wheel Loader	\$171,080	(\$40,000)	\$133,605		2.5 to 3 yards	11ft	123hp	6 months	Ziegler Cat



Murphy Tractor & Equipment Co., Inc.
5087 E Broadway Ave.
Des Moines, IA 50317
Phone: 515-263-0055
Toll Free: 800-822-2212
Fax: 515-263-0002



Invoice To Account No: 14000401

Deliver To:

SERVICE INVOICE

CITY OF WINDSOR HEIGHTS
DALTON JACOBUS
1133 68TH STREET
WINDSOR HEIGHTS IA 50324

CITY OF WINDSOR HEIGHTS
1133 68TH STREET
WINDSOR HEIGHTS IA 50324

Invoice Number: 1820974
Invoice Date: 05/16/2022
Location: 14
Work Order Number: 395482
Payment Type: Account

Bus Phone: (515)297-3662
Prv Phone:

Bus Phone: (515)297-3662
Prv Phone:

Page: 1 of 9

Make/Model:	Meter	Serial Number:	EQ Id:	Fleet No:
JOHN DEERE 444H	2875	DW444HX577426	45736W	

Gen1- Retail

COMPLAINT:

01 Quoting Several Repair

CAUSE:

CORRECTION:

Thoroughly inspected all parts of machine and noted what would be required in order to make this machine brand new as requested by customer

Took photos of part numbers off of valving

Went through parts advisor and found every hydraulic, transmission, and axle line on this machine as well as fittings that have rusted

Went through parts and found all hydraulic valving and their components

Went through parts and found seal kits for cylinders that will be needed

Went through parts and found all pins and bushings

Inspected sheet metal around machine and noted what is damaged and will need replaced

Inspected cab components and noted what will need replaced in the cab including the front glass

Labor: \$2,681.25	Parts: \$0.00	OL&M: \$0.00	Misc: \$0.00	Sub-Total: \$2,681.25
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/Hauling Retail

COMPLAINT:

03 HAULING

CAUSE:

CORRECTION:

03/28/22 - HAULING FROM WINDSOR HEIGHTS TO MURPHY

05/06/22 - HAULING FROM MURPHY TO WINDSOR HEIGHTS

OL&M Charges:

Description	Value
HAULING	\$640.00
HAULING	\$450.00

Labor: \$0.00	Parts: \$0.00	OL&M: \$1,090.00	Misc: \$0.00	Sub-Total: \$1,090.00
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Gen2- Retail

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Murphy Tractor & Equipment Co., Inc.
5087 E Broadway Ave.
Des Moines, IA 50317
Phone: 515-263-0055
Toll Free: 800-822-2212
Fax: 515-263-0002



JOHN DEERE

Invoice To Account No: 14000401

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CITY OF WINDSOR HEIGHTS
DALTON JACOBUS
1133 66TH STREET
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Invoice Number: 1820974
Invoice Date: 05/16/2022
Location: 14
Work Order Number: 395482
Payment Type: Account
Page: 2 of 9

Make/Model:	Meter	Serial Number:	EQ Id:	Fleet No:
JOHN DEERE 444H	2875	DW444HX577426	45736W	

COMPLAINT:

04 Diagnose boom raising slow while bucket is loaded

CAUSE:

CORRECTION:

Hydraulic max system pressure test- spec is 3600 + or - 50 psi

Actual result at operating temp- 3530

This is adjusted with the load sense relief valve on the loader control valve. Note: load sense relief valve is extremely corroded so it is possible that something may break if attempting to adjust this pressure

Both o-rings appear to be blown between the steel lines and fittings going in to the cylinder

Performed loader relief valve pressure test which is done by removing inlet line to control valve, installing a run tee, hooking up a hydraulic pump to run tee, and slowly pressuring system until pressure overcomes relief valve. Increased pressure by roughly 100 psi at a time. Once 1500 psi was reached I noticed a slight steady drop in pressure until it had leaked down to around 1200-1400 psi in the system. Circuit relief will likely need replaced

Tested for margin (differential) pressure- the difference between load sense, and pump output pressure. Spec is 230 + or - 15 psi

Actual result was roughly 165 psi differential- this is another contributor to slow boom up with load

Labor: \$1,108.25	Parts: \$0.00	OL&M: \$0.00	Misc: \$0.00	Sub-Total: \$1,108.25
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Gen3- Retail

COMPLAINT:

05 Diagnose front differential lock doesn't work

CAUSE:

CORRECTION:

Checked hydraulic pressure for front diff lock, was reading about 100-125 PSI, on or off. Could hear solenoid engage when commanded. Ran machine, diff lock was functioning but would slip intermittently under a load. Checked pressure from the pressure reducing valve, was about 650 PSI on the high end of spec. Checked load sense and pump standby pressures, both were in spec and marginal pressure was about 240 PSI. Removed and capped lines at pressure reducing valve, pulled out check valves, solenoids and all other valves, found no debris or contamination on any of the valves. All solenoids were ohming out the same. Inspected inside valve did not see an noticeable cracks between cut outs, would recommend replacing pressure reducing valve as a whole with all new solenoids.

Miscellaneous Charges:

Service Accessories

\$200.00

Labor: \$986.70	Parts: \$0.00	OL&M: \$0.00	Misc: \$200.00	Sub-Total: \$1,186.70
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CITY OF WINDSOR HEIGHTS DALTON JACOBUS 1133 66TH STREET WINDSOR HEIGHTS IA 50324 Bus Phone: (515)297-3662 Prv Phone:	CITY OF WINDSOR HEIGHTS 1133 66TH STREET WINDSOR HEIGHTS IA 50324 Bus Phone: (515)297-3662 Prv Phone:	Invoice Number: 1820974 Invoice Date: 05/16/2022 Location: 14 Work Order Number: 395482 Payment Type: Account Page: 3 of 9
Make/Model: JOHN DEERE 444H	Meter: 2875 Serial Number: DW444HX577426	EQ Id: 45736W Fleet No:

Gen4- Retail

COMPLAINT:

06 Replace hydraulic pressure reducing manifold

CAUSE:

CORRECTION:

Cleaned out buckets to drain hydraulic oil in to and reuse
 Drained hydraulic system
 Tagged all lines, and 3 solenoid harnesses with colored zip ties
 Removed all hydraulic lines from valve (ran in to issues because of the rust, and not much room to work in that area of the machine)
 Disconnected solenoids
 Removed 2 mount bolts and removed from machine
 Removed fittings one at a time and swapped over to new valve with all new o-rings (boss and ORFS)
 Installed solenoid connectors, started all lines before tightening mount bolts
 Tightened all hydraulic lines to valve
 Removed colored zip ties
 filled hydraulic tank with 116qts of hy-guard

<u>PartNumber</u>	<u>Description</u>	<u>Quantity</u>	<u>Net Price</u>	<u>Extended Price</u>	<u>Taxed Ind</u>
AT203487	HYD ACTUAT	1.00	2,356.29	\$2,356.29	N
<u>Miscellaneous</u>	<u>Description</u>	<u>Quantity</u>	<u>Net Price</u>	<u>Extended Price</u>	<u>Taxed Ind</u>
FREIGHT	FREIGHT & SHIPPING	1.00	62.22	\$62.22	N

Labor: \$858.00 Parts: \$2,356.29 OL&M: \$0.00 Misc: \$62.22 Sub-Total: \$3,276.51

Gen5- Retail

COMPLAINT:

07 Replace starter

CAUSE:

CORRECTION:

Removed wires from posts one at a time and zip tied them together
 Removed started mount bolts and removed from flywheel housing
 Inspected ring gear and found it to be chewed up on the edges from starter not fully engaging every time
 Talked to foreman about this issue and he contacted the customer
 Unboxed new starter and the wire connections are a lot different so we will have to figure out where all of the wires go on the new one

CONTINUED ON NEXT PAGE->



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 5087 E Broadway Ave.
 Des Moines, IA 50317
 Phone: 515-263-0055
 Toll Free: 800-822-2212
 Fax: 515-263-0002



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 WINDSOR HEIGHTS IA 50324

CITY OF WINDSOR HEIGHTS
 1133 66TH STREET
 WINDSOR HEIGHTS IA 50324

Invoice Number: **1820974**
 Invoice Date: 05/16/2022
 Location: 14
 Work Order Number: 395482
 Payment Type: Account

Bus Phone: (515)297-3662
 Prv Phone:

Bus Phone: (515)297-3662
 Prv Phone:

Page: 4 of 9

Make/Model:	Meter	Serial Number:	EQ Id:	Fleet No:
JOHN DEERE 444H	2875	DW444HX577426	45736W	

put new starter on
 hooked up all of the wires
 tested and works properly

PartNumber	Description	Quantity	Net Price	Extended Price	Taxed Ind
SE501406	STARTER	1.00	783.81	\$783.81	N
SE501406-CR	CORE for:Starter Motor Reman	-1.00	75.00	-\$75.00	N
Labor: \$257.40		Parts: \$708.81	OL&M: \$0.00	Misc: \$0.00	Sub-Total: \$966.21

Gen6- Retail

COMPLAINT:

08 Repair leak at orbital motor

CAUSE:

CORRECTION:

disassembled plastic body pieces
 pulled the two wet hoses off of the orbital
 replaced both o rings on both lines
 put everything back together and cleaned lines up
 started and operated machine, hose still leaking
 pulled old hose off and had a new one made
 installed new hose
 put plastic body pieces back on

PartNumber	Description	Quantity	Net Price	Extended Price	Taxed Ind
X1J743-10-10	ELBOW FITT	1.00	37.06	\$37.06	N
X1JC43-12-10	HOSE FITTI	1.00	21.63	\$21.63	N
X487TC-10-RL	BULK HOSE	52.00	0.88	\$45.76	N
Labor: \$214.50		Parts: \$104.45	OL&M: \$0.00	Misc: \$0.00	Sub-Total: \$318.95

Gen7- Retail

COMPLAINT:

09 Reseal bucket cylinder

CAUSE:

CONTINUED ON NEXT PAGE->

MURPHY

TRACTOR & EQUIPMENT CO., INC.

Murphy Tractor & Equipment Co., Inc.
5087 E Broadway Ave.
Des Moines, IA 50317
Phone: 515-263-0055
Toll Free: 800-822-2212
Fax: 515-263-0002



JOHN DEERE

Invoice To Account No: 14000401

Deliver To:

SERVICE INVOICE

CITY OF WINDSOR HEIGHTS DALTON JACOBUS 1133 66TH STREET WINDSOR HEIGHTS IA 50324 Bus Phone: (515)297-3662 Prv Phone:	CITY OF WINDSOR HEIGHTS 1133 66TH STREET WINDSOR HEIGHTS IA 50324 Bus Phone: (515)297-3662 Prv Phone:	Invoice Number: 1820974 Invoice Date: 05/16/2022 Location: 14 Work Order Number: 395482 Payment Type: Account Page: 5 of 9
Make/Model: JOHN DEERE 444H	Meter: 2875 Serial Number: DW444HX577426	EQ Id: 45736W Fleet No:

CORRECTION:

Inspected bucket cylinder and determined it is not leaking out of the wiper seals, but the piston line is leaking out of both connections, as well as both boom cylinders are leaking from both connections on the piston lines
Removed and capped hydraulic lines going to boom, and bucket cylinders
Loosened jam nut and removed the fitting from each cylinder
Put it parts washer and cleaned majority of the debris from the outside and cleaned the inside of the fittings thoroughly
Cleaned sealing areas inside/ on cylinders'
Removed boss, and flat face o-rings from each fitting, inspected and found them to be coned out, matched to o-rings in kit
Installed new o-rings, installed in to cylinders, and tightened
Installed lines, held each function over relief both ways and checked, found o-rings to be sealing properly now

Labor: \$858.00	Parts: \$0.00	OL&M: \$0.00	Misc: \$0.00	Sub-Total: \$858.00
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Gen8- Retail

COMPLAINT:

10 Repair quick coupler not working

CAUSE:

CORRECTION:

Tested operation and confirmed it is still not working with the new pressure reducing valve
Checked for power and ground going to the switch and it is good
Ensured switch is connecting properly and it is
Located the Y20 pin disconnect solenoid on service advisor and then on the machine
Tested for power and ground at the solenoid and it is good
Checked ohms in solenoid coil and it is high
Looked up coil on parts advisor and we had one, tested ohms and found new to be about 8 ohms less resistance compared to the original coil
Installed new coil and it is still not working
Removed whole spool from valve and inspected, found it to be plugged with debris
Checked to see if spring moves freely in either direction, pushed in hard and did not spring back out like it should
Put parts list together and gave to parts
Once delivered, installed and tightened spool
Installed new coil and tightened nut
Connected to machine harness and operated, quick coupler is now functioning as it should be

PartNumber	Description	Quantity	Net Price	Extended Price	Taxed Ind
AN280239	Solenoid Valve	1.00	252.86	\$252.86	N
AT139433	ELECTRICAL	1.00	256.26	\$256.26	N
T130847	PLATE	1.00	33.78	\$33.78	N

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Make/Model:	Meter	Serial Number:	EQ Id:	Fleet No:	
JOHN DEERE 444H	2875	DW444HX577426	45736W		

Labor: \$543.40 Parts: \$542.90 OL&M: \$0.00 Misc: \$0.00 Sub-Total: \$1,086.30

Gen9- Retail

COMPLAINT:

11 Repair float function not working

CAUSE:

CORRECTION:

Read theory of operation on the float circuit
 Took machine out back to test the operation and found that the magnetic detent is functioning properly, so this will definitely need some hydraulic testing done to diagnose and fix this issue
 Found that it needs pilot oil to be 500 psi minimum to push boom spool in to the float
 Looked up procedure for checking pilot oil pressure and tested, found it to be just above 500 psi, but with as old as the system is, it will likely need more to continuously hold the spool in the float position
 Looked up procedure for adjusting pilot oil pressure, this is done on the pressure reducing valve
 Spec is 600- 650 psi
 Warmed hydraulic oil to 120 degrees
 Adjusted pilot oil pressure and set to 640 psi
 Took machine out back and tested float operation and it is still not working properly
 Checked service advisor for possible causes for this system and was lead to turning up pump pressure to top of spec, attempted to do this but adjusting screw and jam nut are seized together under the cab and cannot free them up
 Talked to another tech about this issue and he lead me in a different direction to check load sense relief valve and system pressure relief valve
 Decided to mess with the system relief valve and load sense relief valve to see if they were set low and possibly causing the system to not work properly
 Ran the tests to check these pressure settings and found the system pressure to be okay, but load sense pressure was set low
 Removed front plate and located load sense relief valve, found this to be extremely rusty, but in a much easier spot to get to compared to the hydraulic pump adjusting screw, this is also much easier to access compared to the system relief valve so I will try it first
 Finally got adjusting screw to the point where we could adjust the pressures somewhat
 At first, the adjusting screw was not doing anything to the pressure whatsoever, then it shot way high over spec
 Getting this to adjust in small increments took a lot of time due to the springs being old and having to cycle all functions to get the valves to seat properly in between testing to get an accurate reading
 Finally got pressure within spec after numerous attempts and dealing with the corrosion causing difficulties when it comes to the fine tuning of hydraulic pressure setting
 Took machine out back again and tested operation, boomed down all the way until there was little weight on the front wheels, pushed joystick in to detent position and the boom floated back up and let the machine down like it should because both ends of the cylinder are connected when the spool is in the float position
 Boomed all the way up and pushed joystick in to detent position and it seems to be extremely fast like it is just a power boom down
 Went back inside and looked up cycle time specs and found "boom lower (float)" spec to be 3.0 seconds from full height to the ground in the float position
 Went back out to machine and warmed hydraulics back up to 120 degrees

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JOHN DEERE 444H	2875	DW444HX577426	45736W		

Ran cycle time test and found float the machines cycle time to be extremely close to the spec for the age and hours on the machine

Labor: \$1,751.75 Parts: \$0.00 OL&M: \$0.00 Misc: \$0.00 Sub-Total: \$1,751.75

Gen10- Retail

COMPLAINT:

12 Replace front windshield

CAUSE:

CORRECTION:

Called Scott's auto glass and set up appointment for them to come replace windshield.

PartNumber	Description	Quantity	Not Price	Extended Price	Taxed Ind
T196237	WINDSHIELD	1.00	396.05	\$396.05	N

OL&M Charges:

Description	Value
Windshld Replacement	\$350.00

Labor: \$0.00 Parts: \$396.05 OL&M: \$350.00 Misc: \$0.00 Sub-Total: \$746.05

Gen11- Retail

COMPLAINT:

13 Replace flywheel ring gear

CAUSE:

CORRECTION:

Removed engine compartment hood
 Drained coolant from radiator and engine block and stored in clean containers but it is slightly low so will need to get more later
 Color coded and removed all radiator hoses, oil lines, and electrical connections
 Had a tough time undoing drive shaft from transmission due to location, cannot get to it from the bottom and it is difficult to reach from the engine compartment
 Got U- joint separated from transmission
 Checked service advisor procedure for engine removal to see what all has to be removed from the front side as far as the fan, fan shroud etc
 Removed metal fan shroud
 Tried to remove plastic fan shroud but it is wedged in by bolts for external panels
 Decided it would be easier to just remove the fan, and fan mounting spacer than remove a bunch of panel bolts

CONTINUED ON NEXT PAGE->



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Invoice To Account No: 14000401

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DALTON JACOBUS
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WINDSOR HEIGHTS IA 50324

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Fleet No:

JOHN DEERE 444H

2875

DW444HX677426

45736W

Slowly lifted engine from machine, had to turn 90 degrees and avoid all the other harnesses/ oil lines in the way
Got engine lifted out of machine and set on jack stands to be worked on with a study base
Removed flywheel cover plates and drive shaft plate
Removed 2 flywheel mount bolts and installed dowels
Removed remaining 2 bolts, hit with soft hammer to break free
Flywheel will not pull straight out due to the teeth, removed dowels and wiggled until flywheel came out sideways
Took to work bench, used hammer and punch to knock old ring gear off
Oriented, heated and bottomed out new ring gear on flywheel shoulder and let cool off and shrink all the way before attempting to put it back in
Got installed and hand tightened new flywheel to crank bolts, looked up torque spec and tightened to 102 ft/ lb
Reinstalled driveshaft plate to flywheel with new bolts and tightened bolts to 105 ft/ lb
Installed cover plates and tightened bolts
Lifted back in to machine and installed mount bolts
Lined up drive shaft and installed bolts and tightened new bolts to 32 ft/ lb
Tightened mount bolts to 320 ft/ lb
Hooked up starter wires, alternator wires, plugged sensors back in, reinstalled all oil and coolant lines and cut color coded zip ties off
Reinstalled fan mount spacer and had to realign pulley holes with fan mount bolt holes
Installed all bolts with medium strength loctite and tightened
Installed all fan shroud mount bolts
Reinstalled hood
Filled system with coolant, started and let run until thermostat opened and topped coolant off
Started machine a few times, everything is running smooth, and no starter grinding issues anymore

PartNumber	Description	Quantity	Net Price	Extended Price	Taxed Ind
19M7788	SCREW	4.00	2.60	\$10.40	N
R135918	BOLT	4.00	3.15	\$12.60	N
R28811	RING GEAR	1.00	94.03	\$94.03	N
T113128	SCREW	4.00	1.71	\$6.84	N
TY26576	COOL-GARD	1.00	36.43	\$36.43	N

Labor: \$3,432.00

Parts: \$160.30

OL&M: \$0.00

Misc: \$0.00

Sub-Total: \$3,592.30

Please remit payments to Murphy Tractor at the address shown on your monthly statement.

Customer PO No:

Tax Exempt No: ON FILE

Advisor: ZACH NEHRING

Labor: \$12,691.25

Parts: \$4,268.80

OL&M: \$1,440.00

Misc: \$262.22

Sales Tax: \$0.00

Total: \$18,662.27

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MURPHY

TRACTOR & EQUIPMENT CO.

Date:	8/16/2023
Proposal #:	
Expiration Date:	9/16/2023

Murphy Tractor
5087 E Broadway Ave
Des Moines, IA 50317

515-263-0055



JOHN DEERE

TO:
City of Windsor Heights
1133 66th street
Windsor Heights IA 50324

JOB DESCRIPTION					
Quote for fixing issues on your 444H					
	John Deere	Model	444H	Serial Number	DW444HX577426

ITEMIZED ESTIMATE: TIME AND MATERIALS		AMOUNT
Replace brake valve under cab	labor	\$1,720.85 \$685.95
Front axil rebuild	labor	\$25,000.00 \$ 5,775.00
Torque Converter replace	labor	\$5,515.28 \$3,720.00
Transmission replace	labor	\$22,596.00 \$6,510.00
Service Accessories		\$ 200.00
TOTAL ESTIMATED JOB COST		\$ 71,723.08

TERMS AND CONDITIONS
This is an estimate only, not a contract. This estimate is for completing the job described above, based on our evaluation. Quoted price does not include applicable sales/local option taxes or miscellaneous expenses. Murphy Tractor Terms and Conditions apply. See additional page.

Shawn Hindman-CSS
PREPARED BY

ACCEPTED BY

August 16, 2023
DATE

DATE